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2022 January - Tennessee Monthly Climate Report

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January 2022 Tennessee State Climate Summary

Tennessee Climate Office * East Tennessee State University

Prepared by William Tollefson and Dr. Andrew Joyner

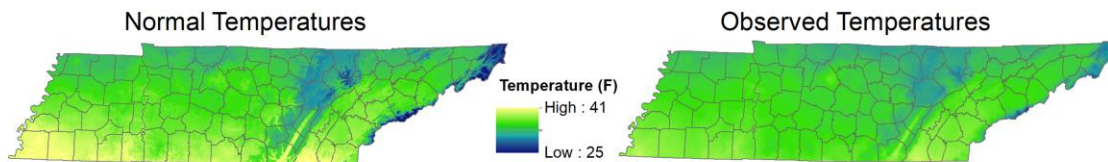
With contributions by [Climate Data Representatives](#) across the state

Monthly Temperature Summary:

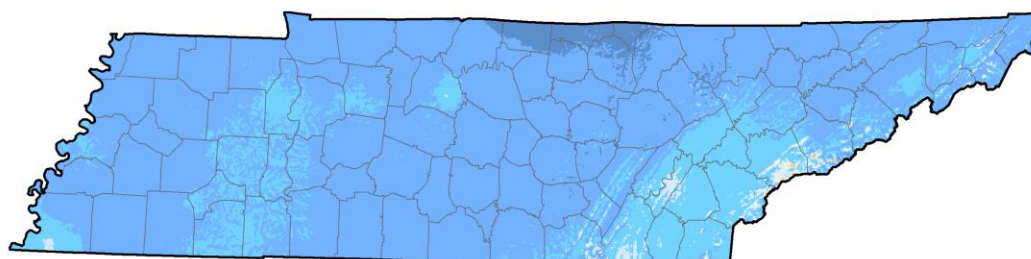
The mean temperature for January was below the 1991-2020 30-year climate normals for the state, with most areas averaging 2-4°F below normal. Temperatures this month ranged from 79°F at a few weather stations on January 1 to -6°F at Mount LeConte on January 30. The month started out with record-setting warmth, with 48 broken and 2 tied daily record-warm high temperatures set between the first and second. Of those, there were 6 broken records for the warmest high temperature recorded during the month of January, and the airport weather stations at Memphis, Nashville, Crossville, Chattanooga, and Knoxville all tied their warmest high temperature ever recorded during the month of January on the 1st. Additionally, on the 1st or 2nd there were 22 broken and 6 tied daily record-warm low temperatures, with Norris setting a monthly record-warm low temperature for January. After the first few days of the month, temperatures returned to near normal or below normal for much of the remainder of the month, with 9 broken and 2 tied daily record cool-high temperatures set between January 21 to 23 or on January 30. The biggest difference for a new record was at the Memphis National Weather Service Office with a high of 28°F on January 23, breaking the old coolest-high by 7 degrees (previous record was 34°F on Jan 23, 2016).



January 2022 Mean Temperature



Departure From Normal Temperatures



Stations with the highest mean temperature

Station Name	Station Type	Mean Temperature (F)
CHATTANOOGA AP	WBAN	40.3
MEMPHIS INTERNATIONAL AP	WBAN	40.3
SHILOH NMP TENNESSEE	RAWS	38.6
GERMANTOWN 4SE	COOP	37.9
CLEVELAND FILTER PLANT	COOP	37.8

Map Data From: PRISM Climate Group, Oregon State University, 1991-2020 Normals Used
Station Data retrieved from SC ACIS2

Stations with the lowest mean temperature

Station Name	Station Type	Mean Temperature (F)
MT LECONTE	COOP	23.5
NEWFOUND GAP	COOP	28.1
ROAN MOUNTAIN 3SW	COOP	30.5
TAZEWELL	COOP	30.9
ONEIDA	COOP	30.9

Monthly Precipitation Summary:

Most of the state recorded precipitation totals above the 1991-2020 30-year climate normals, with each of the first three weeks of the month bringing heavy rains/snows to portions of the state. Some areas of East Tennessee, most notably southern sections of the Tennessee Valley and extreme northeast Tennessee, did record below normal precipitation for the month. A strong cold front swept the state just after New Year's Day bringing heavy rains and severe weather, and then snow-producing weather systems swept the state on January 2-3 with the highest snow totals found in southern Middle Tennessee. A second snowstorm impacted the state January 6-7, with the highest snow totals in northern Middle Tennessee. A third major snow-producing storm impacted the state over Martin Luther King Jr weekend (January 16-17), with the highest snow totals in northern portions of the Cumberland Plateau and East Tennessee mountains. Another system brought light snow to the eastern half of the state, with high elevations in the mountains recording some major accumulations at the end of the month. Throughout the month there were 41 broken daily snowfall records set in Tennessee, and three weather stations tied for their snowiest January day on record, including Mt LeConte which recorded 12.01-inches of snowfall on January 17 and again on January 29.

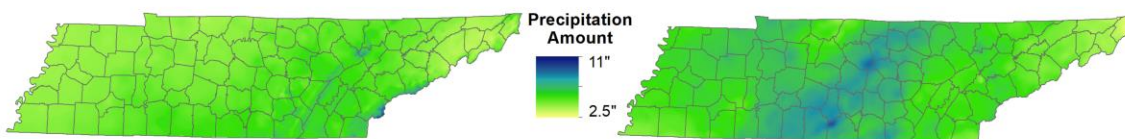


January 2022 Precipitation

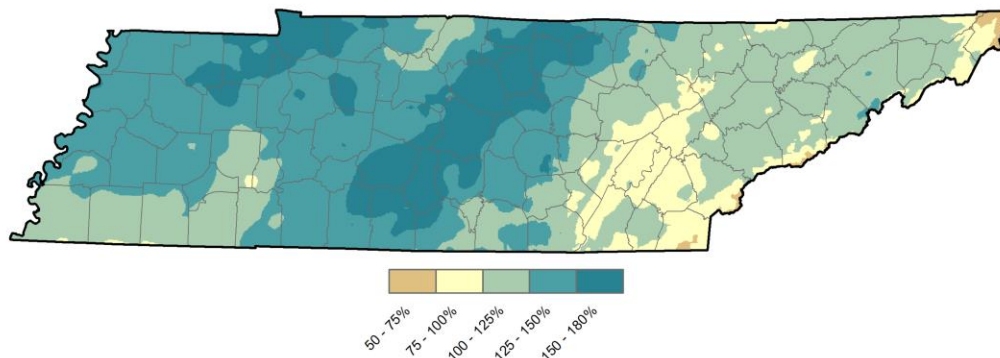


Normal Precipitation

Observed Precipitation



Percent Normal Precipitation



Stations with the most precipitation

Station Name	Station Type	Total Precipitation (in)
GLADEVILLE	COOP	16.94
BENTON 2.3 ESE	CoCoRaHS	12.11
FAYETTEVILLE 7.9 WNW	CoCoRaHS	10.66
FRANKEWING 4.0 ENE	CoCoRaHS	10.21
MOUNT PLEASANT 1N	COOP	8.89

Map Data From: PRISM Climate Group,
Oregon State University.
1991-2020 Normals Used
Station Data retrieved from SC ACIS2

Stations with the least precipitation

Station Name	Station Type	Total Precipitation (in)
CLARKSVILLE NO.2	COOP	2.27
GOODLETTSVILLE 7WNW	COOP	3.04
ONEIDA	COOP	3.15
OAK GROVE 3.0 E	CoCoRaHS	3.43
MURFREESBORO 5.5 NNW	CoCoRaHS	3.73

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	51.5	29.0	40.3	-1.8	79	1/1	17	1/21	3.81	-0.33	92%
Jackson	47.7	24.2	35.9	-3.1	76	1/1	10	1/22	4.86	0.79	119%
Clarksville	44.9	24.5	34.7	-2.3	75	1/1	7	1/7	5.05	1.77	154%
Nashville	47.3	26.5	36.9	-2.7	78	1/1	13	1/7	6.53	2.51	162%
Chattanooga	50.0	30.7	40.3	-1.4	78	1/1	20	1/29	4.52	-0.5	90%
Crossville	42.2	23.2	32.7	-2.6	72	1/1	10	1/29	5.10	0.15	103%
Knoxville	45.4	27.6	36.5	-2.6	77	1/1	18	1/29	5.74	0.98	121%
Bristol	44.5	24.6	34.6	-1.8	78	1/1	12	1/30	4.08	0.43	112%

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
WOODBURY 1 WNW	COOP	79	1
NEWPORT 1 NW	COOP	79	1
MEMPHIS INTERNATIONAL AP	WBAN	79	1
BETHPAGE 1 S	COOP	78	2
KINGSPORT	COOP	78	1
NASHVILLE BERRY FIELD	COOP	78	2
GLADEVILLE	COOP	78	2
CHEATHAM LOCK & DAM	COOP	78	2
ROCK ISLAND STATE PARK	COOP	78	2
SHELBY BOTTOMS NATURE CENTER	COOP	78	1
HAMBLEN CO HQ TENNESSEE	RAWS	78	1
SHILOH NMP TENNESSEE	RAWS	78	1
CHATTANOOGA AP	WBAN	78	1
NASHVILLE INTL AP	WBAN	78	1
BRISTOL AP	WBAN	78	1

Twelve stations tied for the 4th hottest temperature (78°F)

Coldest Stations (lowest minimum temperature)

Station Name	Station Type	Lowest Temperature (F)	Date
MT LECONTE	COOP	-6	30
MILAN EXP STN	COOP	1	7
NEWFOUND GAP	COOP	1	30
WHITE HOUSE	COOP	2	7
ROAN MOUNTAIN 3SW	COOP	5	31
BETHPAGE 1 S	COOP	7	30
GOODLETTSVILLE 7WNW	COOP	7	7
CROSSVILLE AREA OFFICE TENNESS	RAWS	7	22
CLARKSVILLE OUTLAW AP	WBAN	7	7
CARTHAGE	COOP	8	8
JAMESTOWN	COOP	8	23
MONTEREY	COOP	8	8
TAZEWELL	COOP	8	30
WARNER PARK	COOP	8	7

Five stations tied for the 10th coldest temperature (8°F)

Warmest Stations (highest mean temperatures)

Station Name	Station Type	Mean Temperature (F)
CHATTANOOGA AP	WBAN	40.3
MEMPHIS INTERNATIONAL AP	WBAN	40.3
SHILOH NMP TENNESSEE	RAWS	38.6
GERMANTOWN 4SE	COOP	37.9
CLEVELAND FILTER PLANT	COOP	37.8
AMES PLANTATION	COOP	37.6
MEMPHIS WFO	WBAN	37.6
JACKSON EXP STA	COOP	37.5
PIKEVILLE	COOP	37.4
FAYETTEVILLE WATER PLANT	COOP	37.3
MOUSETAIL LANDING STATE PARK	COOP	37.3

Two stations tied for the 10th warmest mean temperature (37.3°F)

Coollest Stations (lowest mean temperatures)

Station Name	Station Type	Mean Temperature (F)
MT LECONTE	COOP	23.5
NEWFOUND GAP	COOP	28.1
ROAN MOUNTAIN 3SW	COOP	30.5
TAZEWELL	COOP	30.9
ONEIDA	COOP	30.9
CROSSVILLE EXP STN	COOP	31
MILAN EXP STN	COOP	31.4
JAMESTOWN	COOP	31.4
GOODLETTSVILLE 7WNW	COOP	32
CROSSVILLE AREA OFFICE TENNESS	RAWS	32.2

Wettest Stations (highest precipitation totals):

Station Name	Station Type	Total Precipitation (in)
GLADEVILLE	COOP	16.94
BENTON 2.3 ESE	CoCoRaHS	12.11
FAYETTEVILLE 7.9 WNW	CoCoRaHS	10.66
FRANKEWING 4.0 ENE	CoCoRaHS	10.21
MOUNT PLEASANT 1N	COOP	8.89
MT LECONTE	COOP	8.88
MOUNT JULIET 5.2 SSW	CoCoRaHS	8.86
HOLLADAY 4.4 NNE	CoCoRaHS	8.85
MCMINNVILLE 8.5 ESE	CoCoRaHS	8.65
WAYNESBORO	COOP	8.63

Driest Stations (lowest precipitation totals):

Station Name	Station Type	Total Precipitation (in)
CLARKSVILLE NO.2	COOP	2.27
GOODLETTSVILLE 7WNW	COOP	3.04
ONEIDA	COOP	3.15
OAK GROVE 3.0 E	CoCoRaHS	3.43
MURFREESBORO 5.5 NNW	CoCoRaHS	3.73
FAIRFIELD GLADE 0.5 SE	CoCoRaHS	3.74
KINGSPORT	COOP	3.79
MEMPHIS INTERNATIONAL AP	WBAN	3.81
GREENEVILLE 3.0 S	CoCoRaHS	3.83
GERMANTOWN 4SE	COOP	3.85

Snowiest Stations (highest snowfall accumulations)

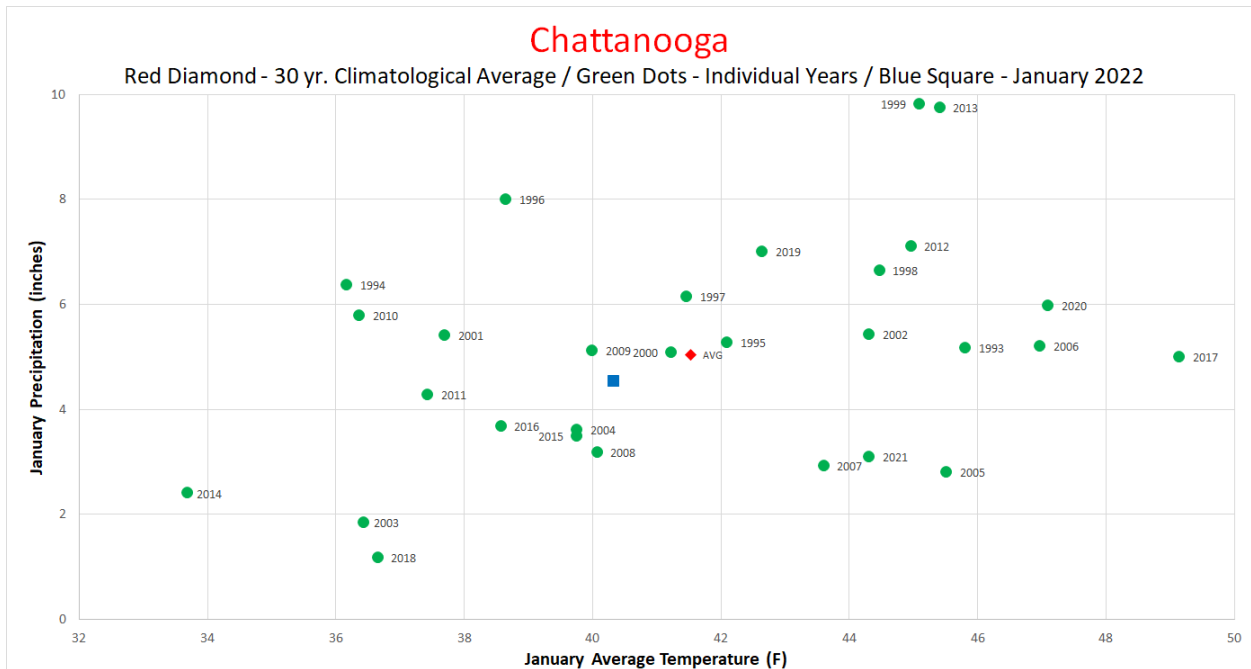
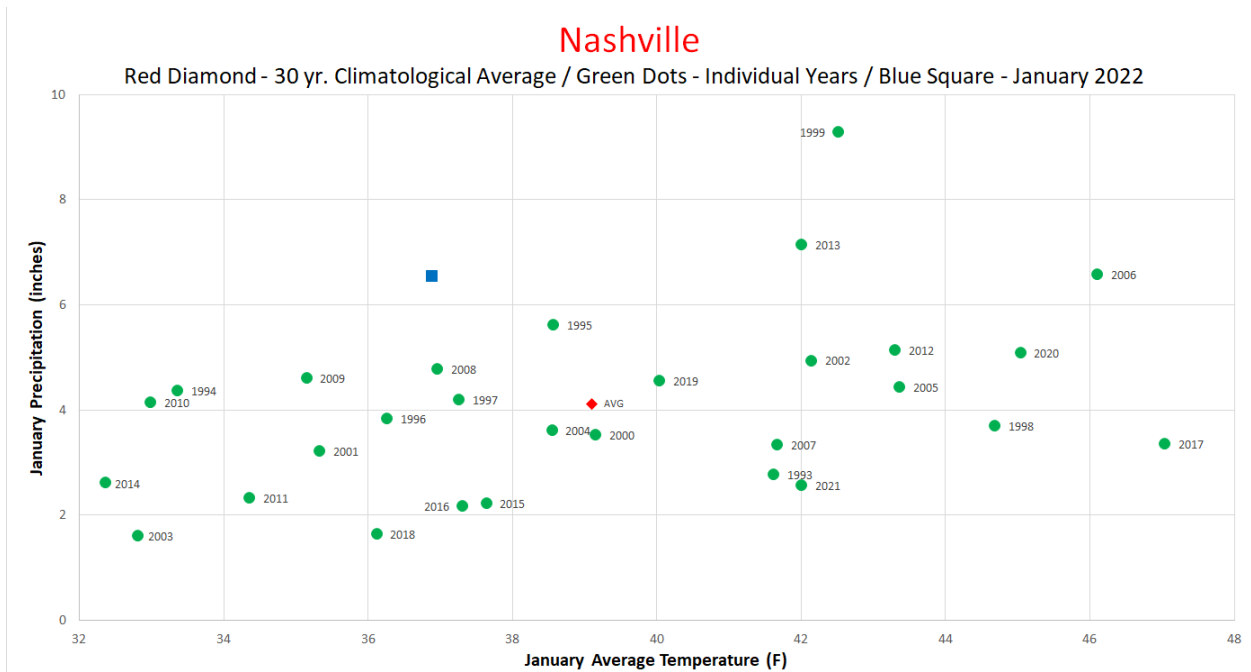
Name	Station Type	Total Snowfall (in)
MT LECONTE	COOP	39.7
NEWFOUND GAP	COOP	28.1
ALLARDT	COOP	20.1
ONEIDA	COOP	17.9
ROAN MOUNTAIN 3SW	COOP	17.5
MONTEREY	COOP	17
BYRDSTOWN	COOP	17
NEWCOMB	COOP	16.9
JAMESTOWN 12.9 S	CoCoRaHS	16.7
MURFREESBORO 8.7 E	CoCoRaHS	16

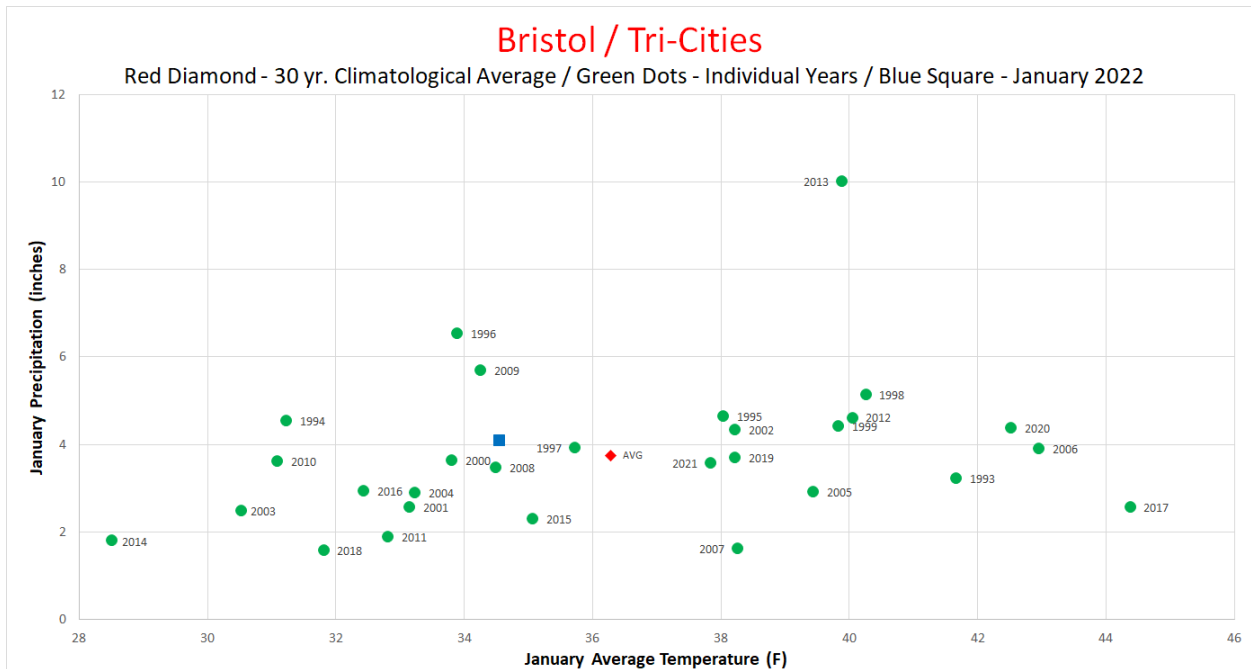
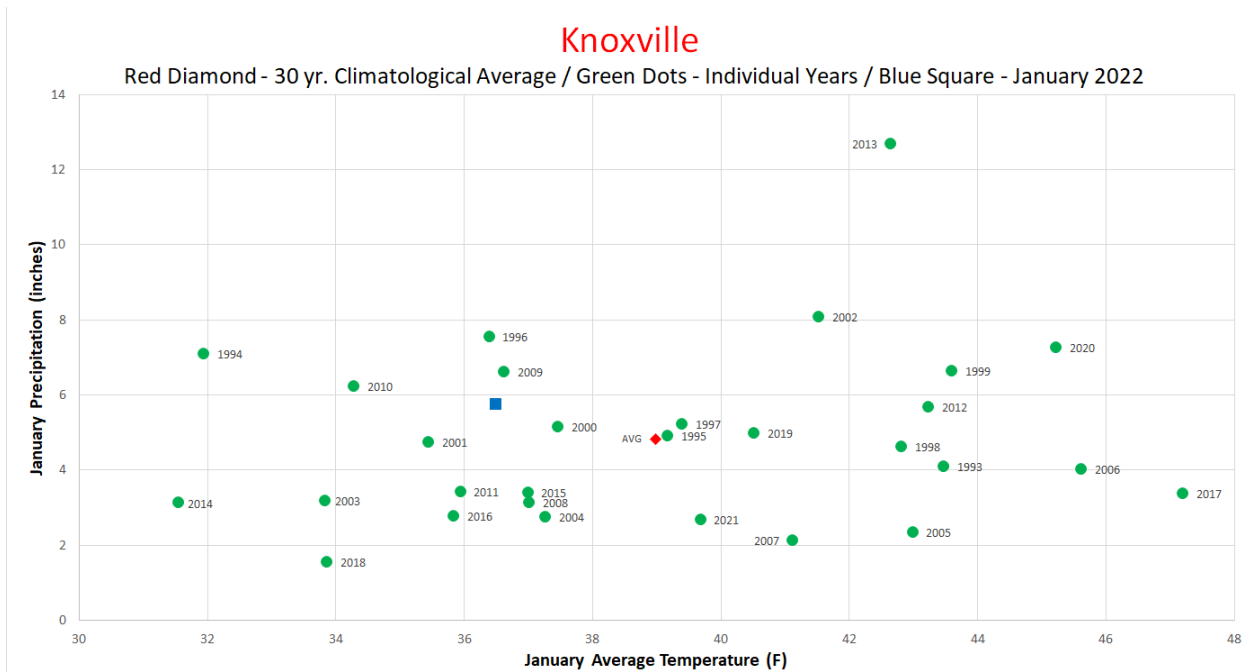
42 weather stations recorded a foot or more of snowfall during the month of January

The Month in Comparison:

Comparing the average temperature and total precipitation for January 2022 to the conditions for January in the past thirty years at select automated airport weather stations, it was cooler than average all across the state. However, it was not a major outlier at any airport as many other years were cooler, notably 2014 brought one of the coldest Januaries to the state, with the average temperature of that month 2-6°F cooler than January 2022. Memphis and Chattanooga recorded just below average precipitation during January 2022, but the other four airports recorded above average precipitation. Nashville had the most above normal precipitation of these airports, recording its 4th highest total precipitation for January in the past 30 years, and with 9.5-inches of snow recorded at Nashville International it was also the snowiest January since 1985 for the city!







Drought Monitor:

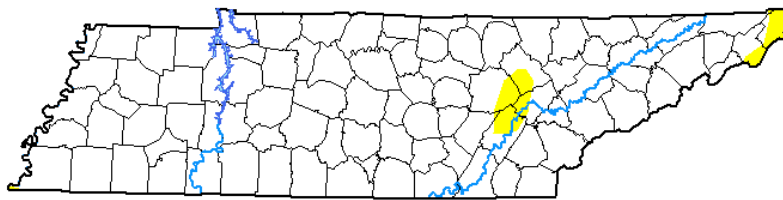
In the last release of the US Drought Monitor in January there were two small areas of Abnormally Dry (D0) conditions in East Tennessee, totaling to 2.56% of the state's area. This was a large improvement from the end of December, when 0.63% of the state was in Moderate Drought (D1), and 23.46% of the state was Abnormally Dry. The biggest improvements in drought/dry conditions were in West Tennessee where heavy rains and snows allowed for the elimination of all D1 and D0 conditions in the region.

Author:

Brad Rippey
U.S. Department
of Agriculture

U.S. Drought Monitor Tennessee

January 25, 2022
(Released Thursday, Jan. 27, 2022)
Valid 7 a.m. EST



Intensity:

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

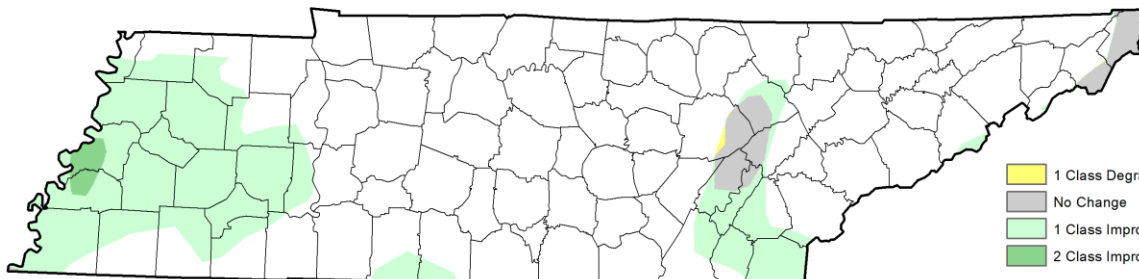
droughtmonitor.unl.edu



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 25, 2022
compared to
December 28, 2021

U.S. Drought Monitor Class Change - Tennessee 4 Week



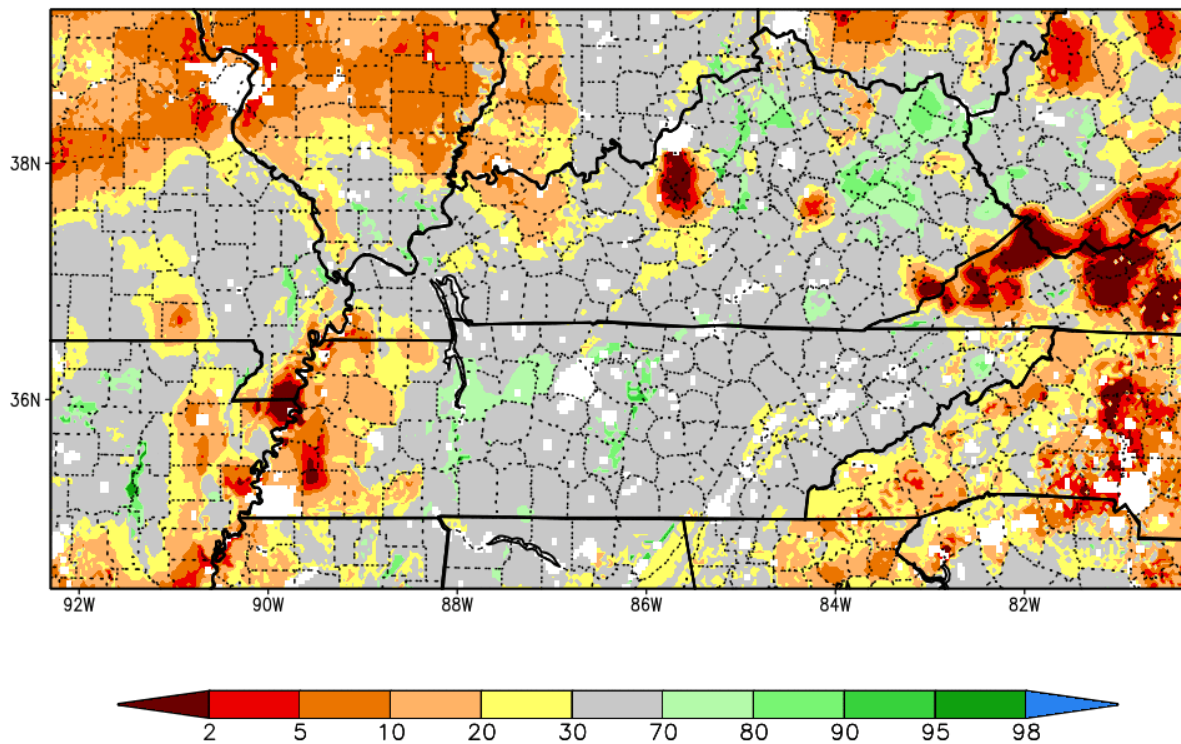
- 1 Class Degradation
- No Change
- 1 Class Improvement
- 2 Class Improvement

droughtmonitor.unl.edu

Soil Moisture:

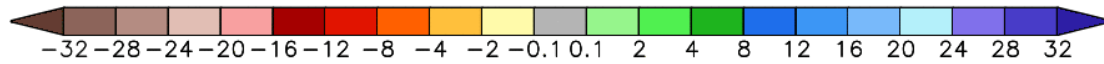
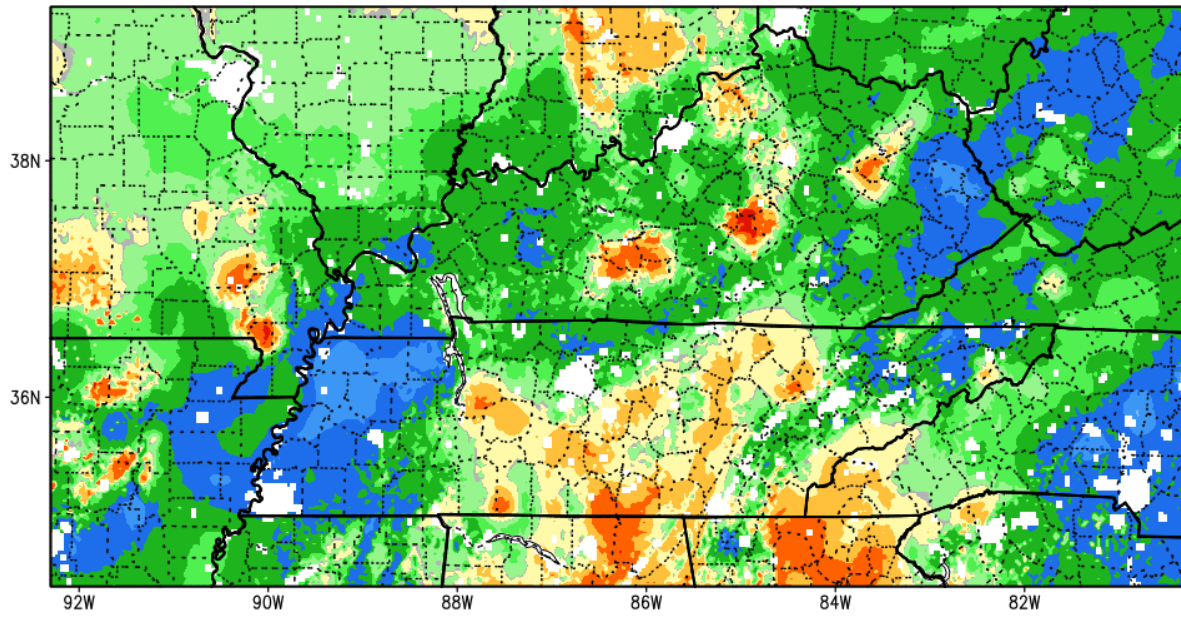
Above normal rainfall and heavy snows paired with cooler than normal temperatures during January meant that most areas of the state saw an increase in soil moisture levels during the month. The USDA National Agricultural Statistics Service reported that for the week ending January 23, topsoil moisture rated 1% short, 56% adequate, and 43% surplus, and subsoil moisture rated 3% short, 60% adequate, and 37% surplus across Tennessee. The NASA SPoRT Land Information System shows that most of the state is in the normal range (30-70th percentiles) for soil moisture integrated from the surface to 2-meters down with the largest deficits, but also the most increase in soil moisture levels, found in West Tennessee.

SPoRT-LIS 0-2 m RSM percentile valid 31 Jan 2022



****NOTE****
****Experimental****

1-Month Difference in Column Relative Soil Moisture (%) valid 12z 31 Jan 2022



****NOTE****
****Experimental****

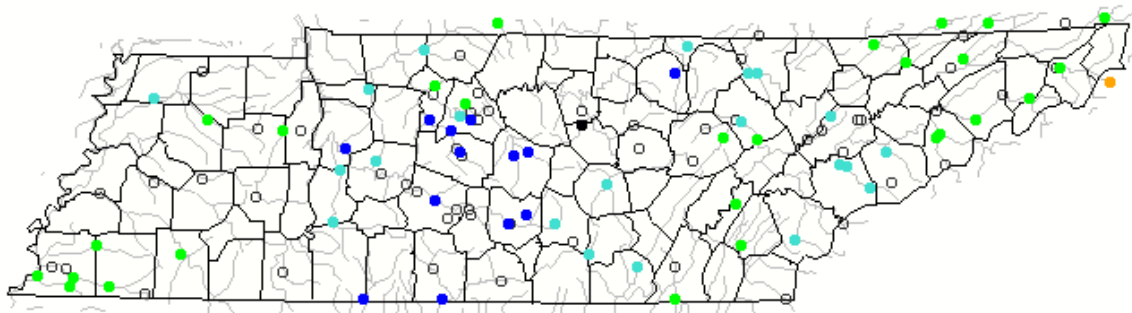
Streamflow:

Streamflow for January averaged normal to above normal for almost all streams in Tennessee. Middle Tennessee and the northern Cumberland Plateau reported the most above normal streamflow rates for the month due to the high rainfall and snowfall totals in those regions.

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

Tennessee or Water-Resources Regions

January 2022



Search USGS streamgage

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

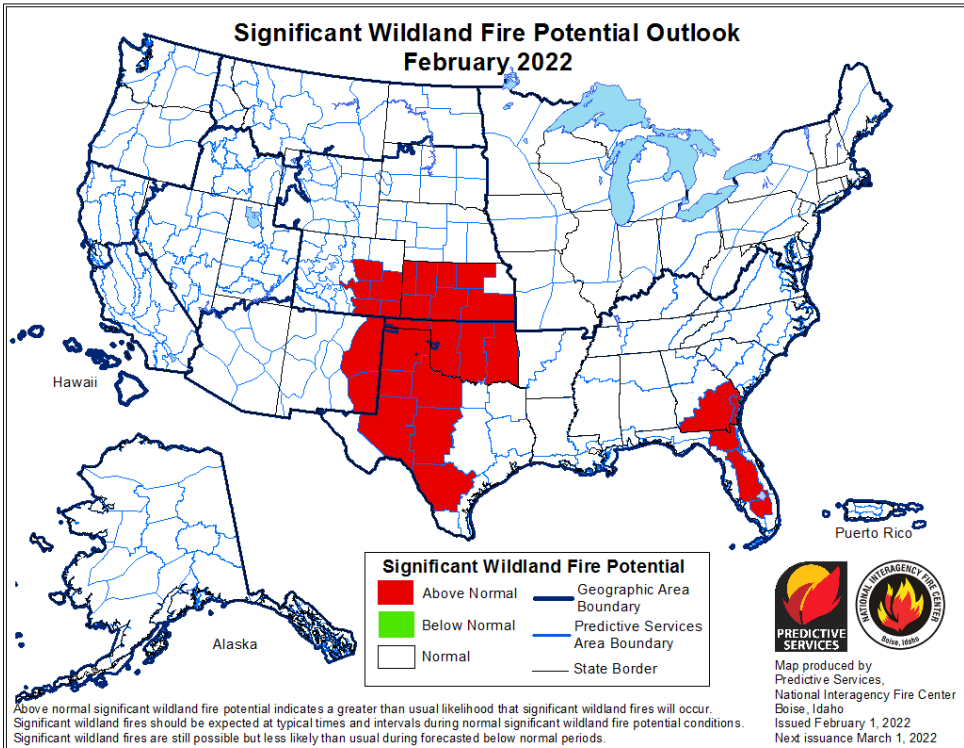
- List of all stations
- Single station
- Nearest stations
- Peak flow

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

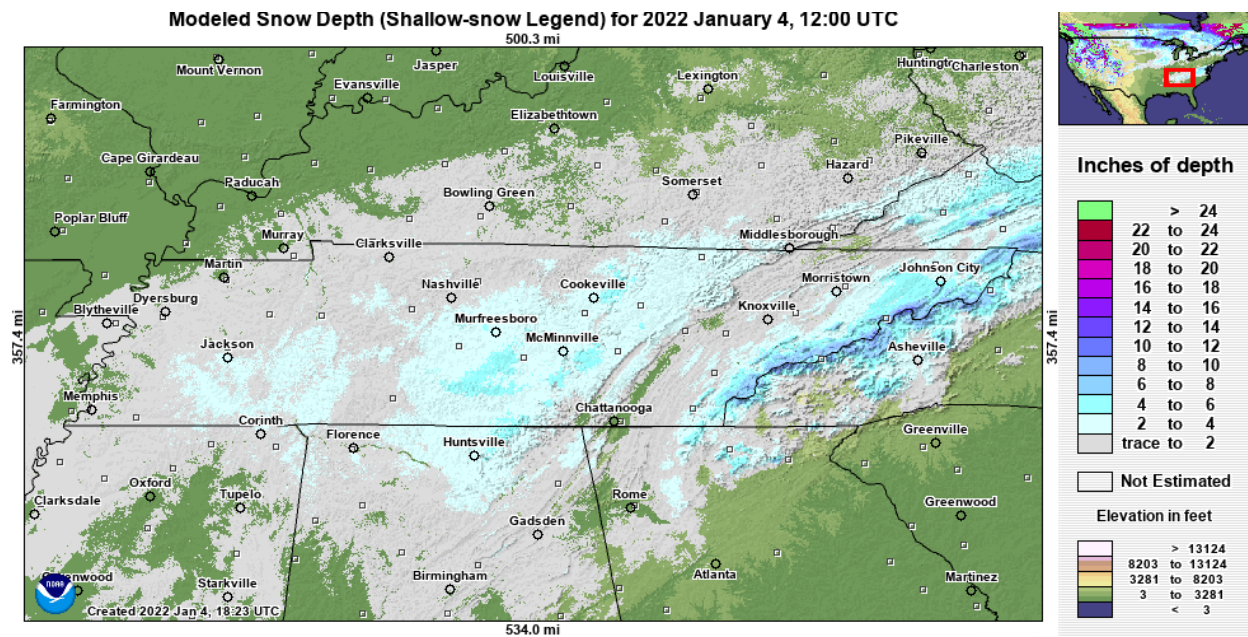
Miscellaneous:

Crop Conditions from USDA: Tennessee experienced increased precipitation and snow in January. Many fields are flooded and muddy. Pastures are reported as mostly fair. Winter wheat is reported as mostly good despite the challenging weather. Hay and roughage supplies appear adequate for the winter season. There is some concern about hay and roughage supplies due to the recent impacts on pastures from wet weather.

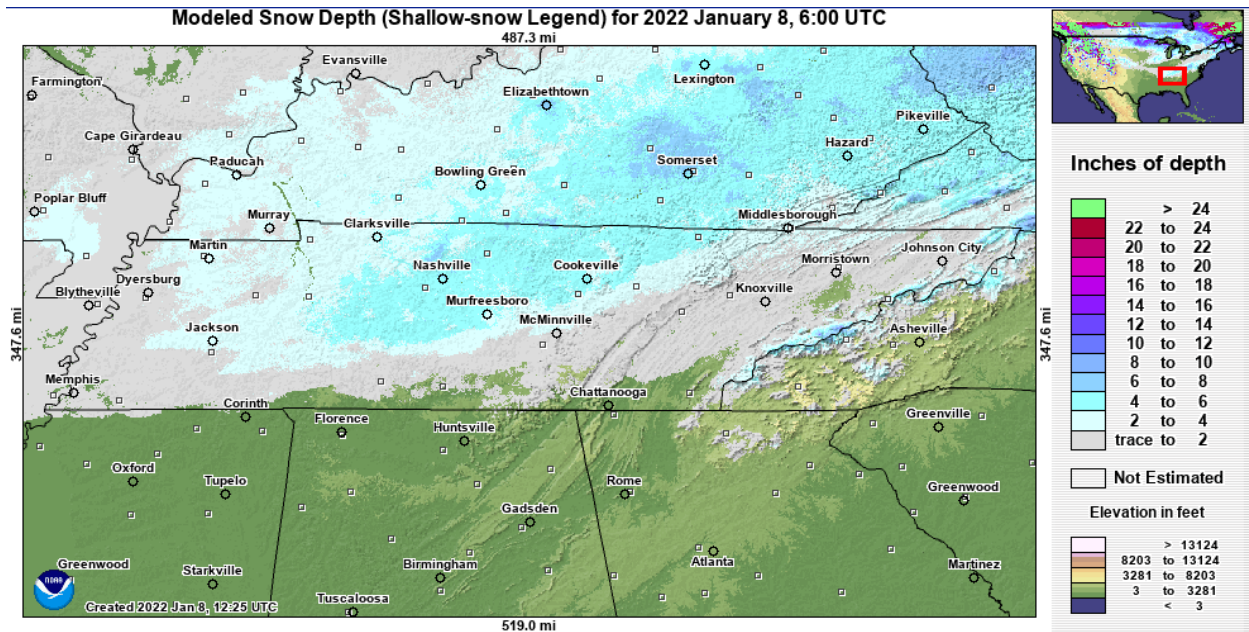
Fire Danger: The National Interagency Fire Center significant wildland fire potential outlook for February shows all of Tennessee and surrounding areas with normal potential for wildfire risk.



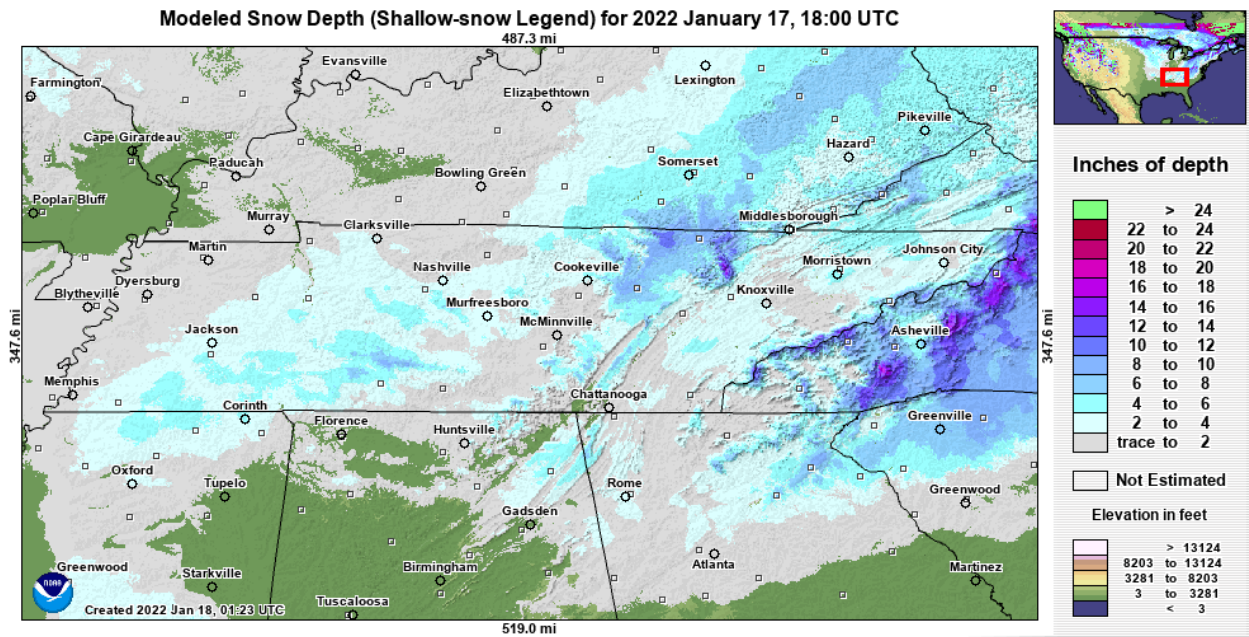
Snow: January 2022 was a snowy month for most areas of Tennessee, with three storm systems bringing snowfall to wide swaths of the state January 2-3, 6-7, and 16-17, and another high-elevation snow system in the East Tennessee mountains at the end of the month (January 28-29).



Modeled Snow Depth at 6:00am CST Jan 4, 2022.



Modeled Snow Depth at 12:00am CST Jan 8, 2022.

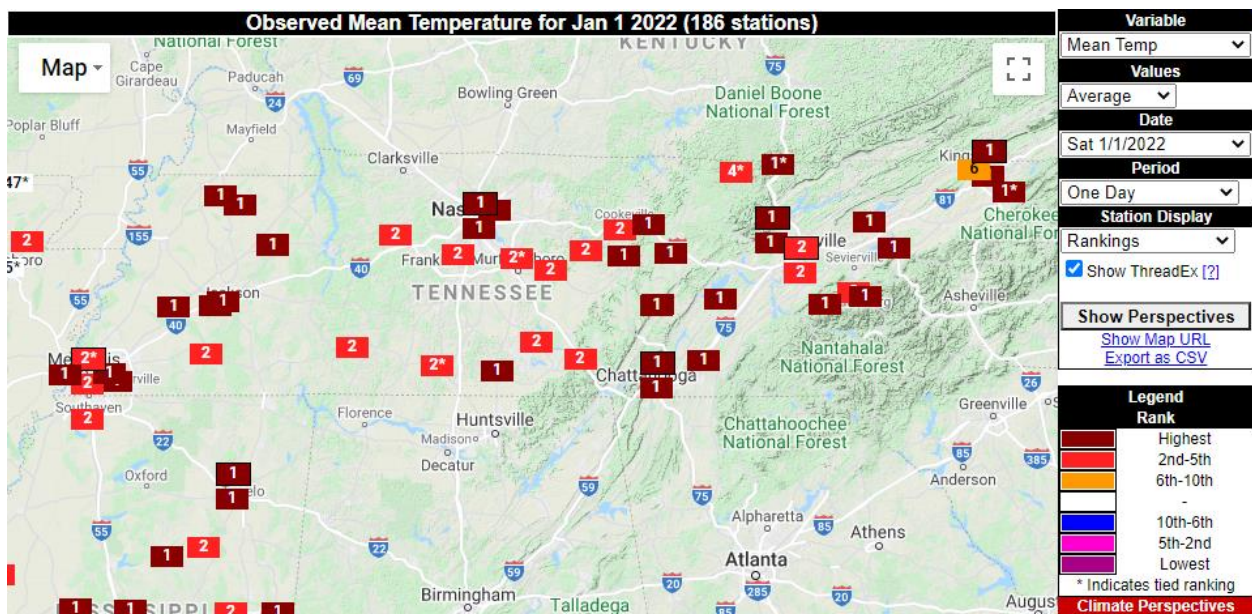


Modeled Snow Depth at Noon CST Jan 17, 2022.

Story of the Month:

The major story of the month for January 2022 was the weather whiplash for the first week of the year, which brought record-setting warmth and severe weather on New Year’s Day, followed later in the week by two major snow-producing winter storms that swept across the state.

January 1, 2022 brought record-setting warmth across the state, with all long-term climate reporting stations across Tennessee setting or tying the record warmest high temperature for the day, and all having one of the top-two warmest mean temperatures for the date. The high temperatures recorded at airport weather stations on January 1, 2022 tied records for the warmest high temperature during the month of January at those stations, with Memphis International reaching 79°F (last recorded Jan 31, 2002), Nashville International reaching 78° (last recorded Jan 24, 1972), Crossville Memorial Airport reaching 72°F (last recorded Jan 30, 2002), Chattanooga Airport reaching 78°F (last recorded Jan 11, 1949), and the Knoxville Airport reaching 77°F (last recorded Jan 11, 2020).



This map from the Southeast Regional Climate Center’s Climate Perspectives Tool shows the rank of mean temperatures recorded on January 1, 2022 across Tennessee. For almost all stations in the state it was the warmest or second warmest mean temperature ever recorded for that date. Stations with a black outline are ThreadEx long-term climate reporting stations.

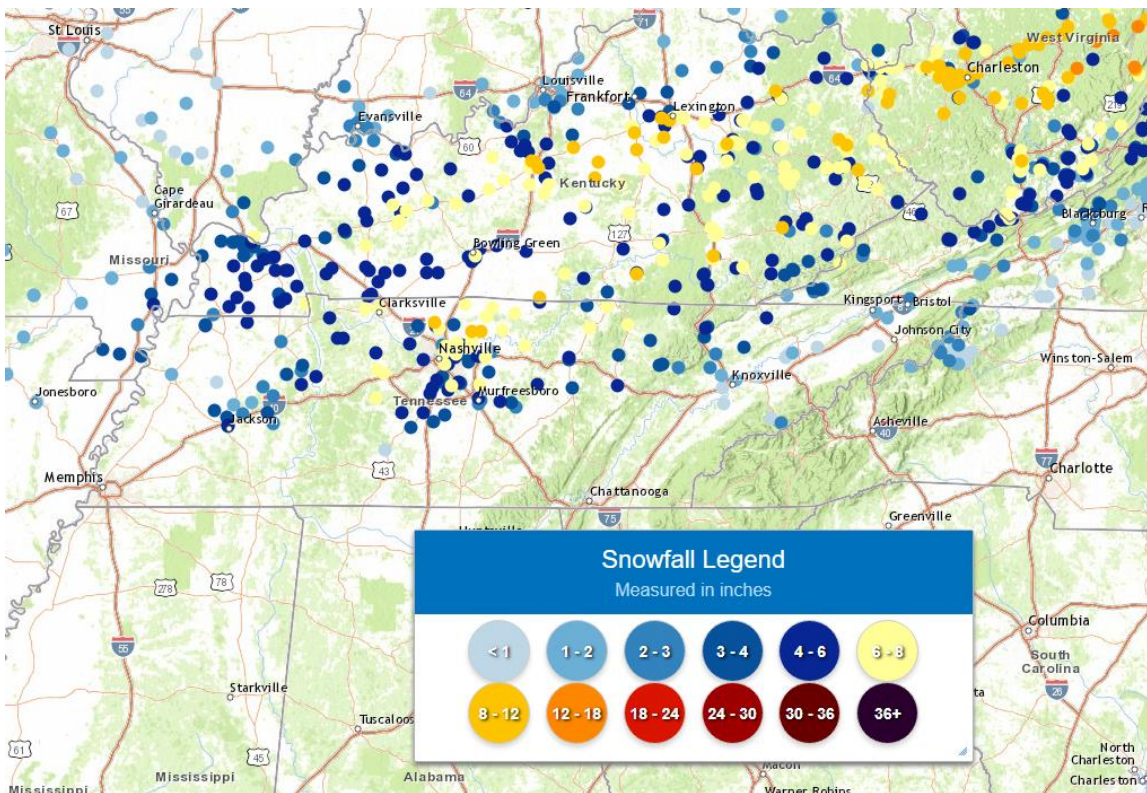
The warmth did not last long into the month, as a strong cold front brought some severe weather to the state and much colder air on January 2, followed by state-wide snowfall January 2-3. Some of the highest snowfall totals from the January 2-3 snowfall event occurred in southern sections of Middle Tennessee, with reports of up to 7-inches of snow in Franklin County.

A second storm system moved across the state later that week (January 6-7) and brought heavy snowfall, with the highest totals found in northern sections of Middle Tennessee.

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Snow in Waverly, January 6, 2022 (Photo via Humphreys County Sherriff's Office)



January 6-7 snowfall accumulations across Tennessee and Kentucky (map via National Weather Service Storm Report)

A third snow-producing storm system moved across the state January 16-17 on the Martin Luther King Jr. weekend, with heaviest snow totals found in northern portions of the Cumberland Plateau and the mountains of East Tennessee.



Snow-covered road near Johnson City, Tennessee on January 17, 2022

A final snow system impacted the mountains in East Tennessee January 29-30 with major-to-moderate accumulations limited to higher elevations.

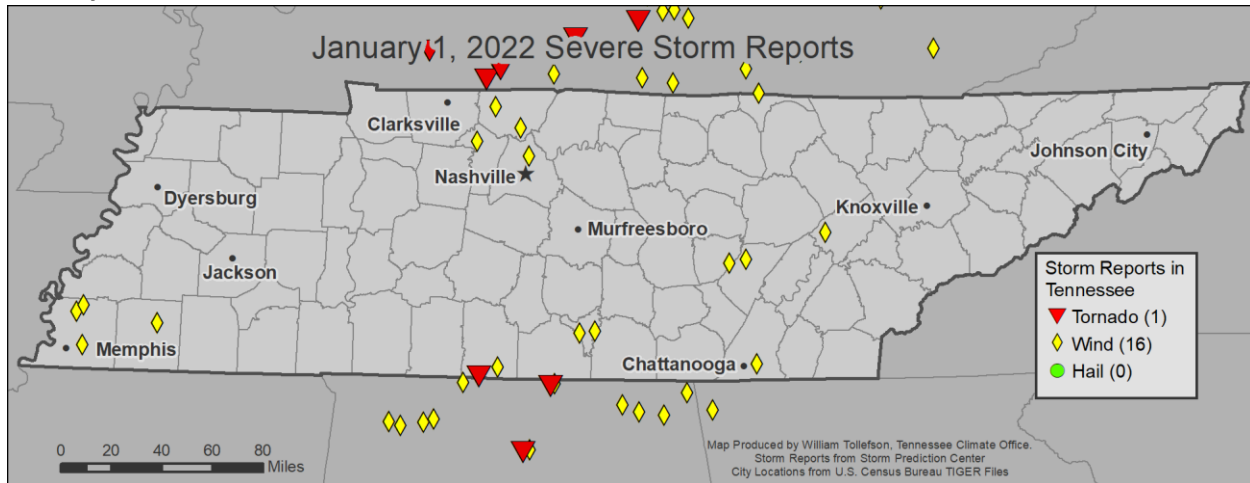
Across the state, at weather stations with at least a 30-year reporting history, there were 41-daily record snowfall totals set, including 5 records at stations with over a 100-year reporting history. Overall for the month, 42 weather stations recorded a foot or more of snowfall during January, with Mt LeConte in the Great Smoky Mountains National Park leading the state, recording a total of 39.7-inches of snowfall, including 12.01-inches recorded January 29th, setting a daily-snowfall record for the date and tying for the 3rd snowiest January day on record for the weather station. It was also the snowiest January in Nashville since 1985, and the weather station at the Old Hickory Dam tied its all-time record for deepest snow cover reported, with 10-inches on the ground January 7, 2022, which was last recorded January 1, 1964 (the station has a 67-year weather reporting history).

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 1 day with severe storms reported in Tennessee with a total of 1 tornado, 16 severe wind damage reports, and 0 severe hail reports.

January 1:



Tornado:

Time (UTC)	Strength	Location	County	Lat	Lon	Comments
22:12	EF0	5 SE MINOR HILL	GILES	35.0	-87.1	THIS TORNADO TOUCHED DOWN IN LIMESTONE COUNTY... ALABAMA AT 404 PM CST NEAR THE INTERSECTION OF PERSIMMON TREE ROAD AND SINIARD ROAD... WHERE A FEW TREES WERE SNAPPED O (OHX)

Wind:

Time UTC	Speed (mph)	Location	County	Lat	Lon	Comments
16:10	--	2 WSW MILLINGTON	SHELBY	35.32	-89.92	TREES DOWN AND SOME HOUSE DAMAGE. (MEG)
16:15	68	2 NNE MILLINGTON	SHELBY	35.36	-89.87	(MEG)
16:28	--	EAST MEMPHIS	SHELBY	35.13	-89.87	LOTS OF TREES DAMAGED... BROKEN BRANCHES AND DOWN... IN EAST MEMPHIS. POWER LINES DOWN AS A RESULT. (MEG)
17:00	--	2 N SOMERVILLE	FAYETTE	35.27	-89.35	AN OUTBUILDING'S ROOF WAS DESTROYED AND IT DAMAGED GRAIN BINS AND OTHER BUILDINGS. (MEG)
17:45	--	2 N SOMERVILLE	FAYETTE	35.27	-89.35	AN OUTBUILDING'S ROOF WAS DESTROYED AND IT DAMAGED GRAIN BINS AND OTHER BUILDINGS. (MEG)
17:55	--	CEDAR HILL	ROBERTSON	36.55	-87	TREE DOWN ON HOME ON MUDCAT ROAD. (OHX)
18:10	--	1 WNW GREENBRIER	ROBERTSON	36.43	-86.82	LARGE TREE ON VEHICLE AND POWER LINES DOWN ON HIGHWAY 431 S. (OHX)

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Time UTC	Speed (mph)	Location	County	Lat	Lon	Comments
18:24	--	7 NW ASHLAND CITY	CHEATHAM	36.35	-87.13	POWERLINE AND TREE DAMAGE IN CHAPMANSBORO... REPORTED BY CUMBERLAND ELECTRIC. (OHX)
18:33	--	5 SSW GOODLETTSVILLE	DAVIDSON	36.27	-86.76	TREES AND LIMBS REPORTED DOWN NEAR OLD HICKORY BLVD AND DICKERSON PIKE. (OHX)
22:22	--	4 W ELKTON	GILES	35.06	-86.97	TREES DOWN AND DAMAGE REPORTED IN THE AREA. POSSIBLE TORNADO. (OHX)
23:00	--	8 SE SPENCER	VAN BUREN	35.66	-85.35	MULTIPLE TREES REPORTED DOWN IN FALL CREEK FALLS PARK. (OHX)
23:42	--	4 ESE LYNCHBURG	MOORE	35.27	-86.29	TREE DOWN ALONG SHASTEEN HOLLOW RD. (HUN)
0:23	--	3 SW LYNCHBURG	MOORE	35.26	-86.4	TREE DOWN ALONG OLD FAYETTEVILLE HIGHWAY. (HUN)
0:38	--	1 NNE MOUNT CREST	BLEDSON	35.68	-85.23	SEVERAL TREES DOWN. (MRX)
1:15	--	3 S ROCKWOOD	ROANE	35.83	-84.67	A FEW TREES DOWN. (MRX)
3:28	--	3 SSW HARRISON	HAMILTON	35.08	-85.16	TREES AND POWER LINES DOWN. (MRX)

CPC Outlooks for the Next Month:

The NOAA Climate Prediction Center outlooks for February show all of Tennessee leaning towards warmer than normal conditions for the next month, with higher confidence in the eastern portions of the state. The precipitation outlook shows most of Tennessee leaning towards a wetter than normal February with higher confidence in West Tennessee; however the eastern-most portion of the state is shown with equal chances for above or below normal precipitation.

