

February 2024 Tennessee State Climate Summary

Tennessee Climate Office * East Tennessee State University

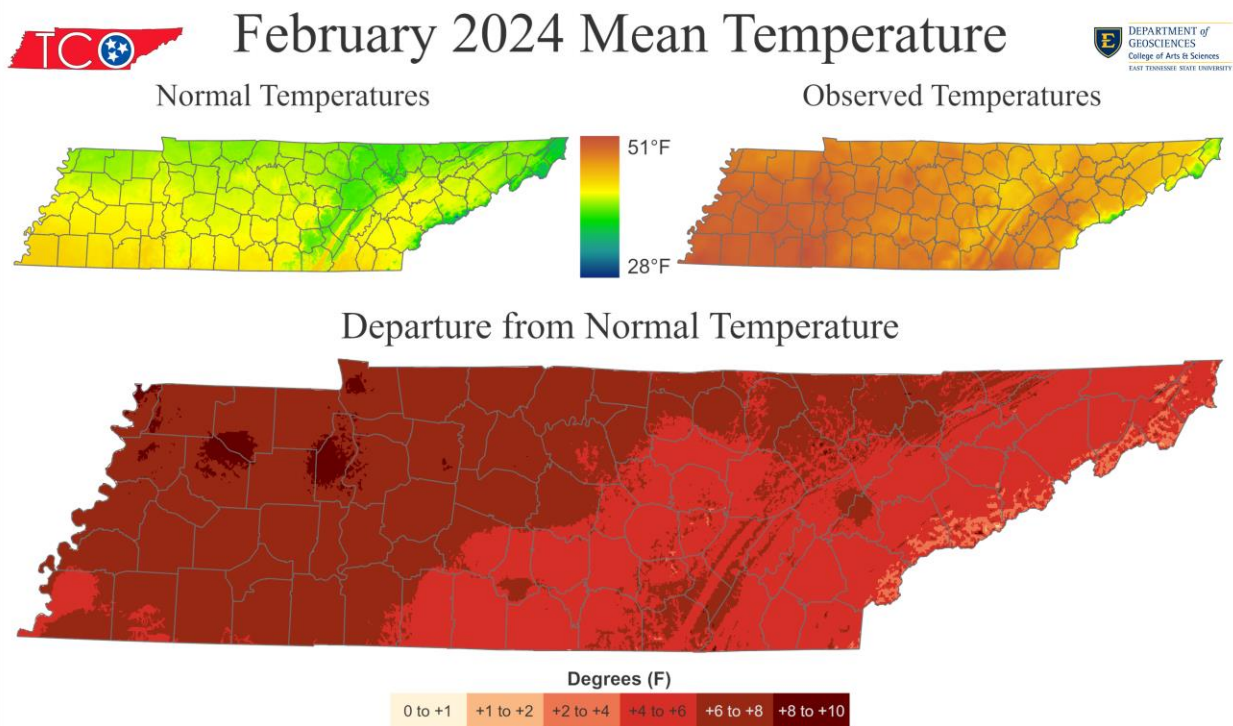
Prepared by William Tollefson and Dr. Andrew Joyner

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

Monthly Temperature Summary:

February 2022 was warmer than normal across the state, with most of the eastern half of the state averaging 4-6°F above normal while most of the western half of the state averaged 6-8°F warmer than normal. The warm conditions were common in most weeks of the month, with the third week of the month being the closest to normal, even slightly cooler than normal in West Tennessee. Leap day was another anomaly as cold air impacted the state in the wake of a strong cold front.

Over the course of February there were 7 broken and 10 tied daily records for high temperatures and 32 broken and 3 tied daily records for the warmest low temperature set at weather stations across the state. Additionally, the weather station at the Jackson airport tied their monthly record for warmest low temperature recorded during the month of February, with a low of 66°F on February 27, tying the record last set in February 2018. There were no cold-related records set in Tennessee this month.



Stations with the highest mean temperature

Station Name	Station Type	Mean Temperature (F)
MEMPHIS INTERNATIONAL AP	WBAN	52.4
CHATTANOOGA AP	WBAN	50.8
MEMPHIS WFO	WBAN	50.8
JACKSON MCKELLAR- SIPES AP	WBAN	50.6
NASHVILLE INTL AP	WBAN	50.3

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

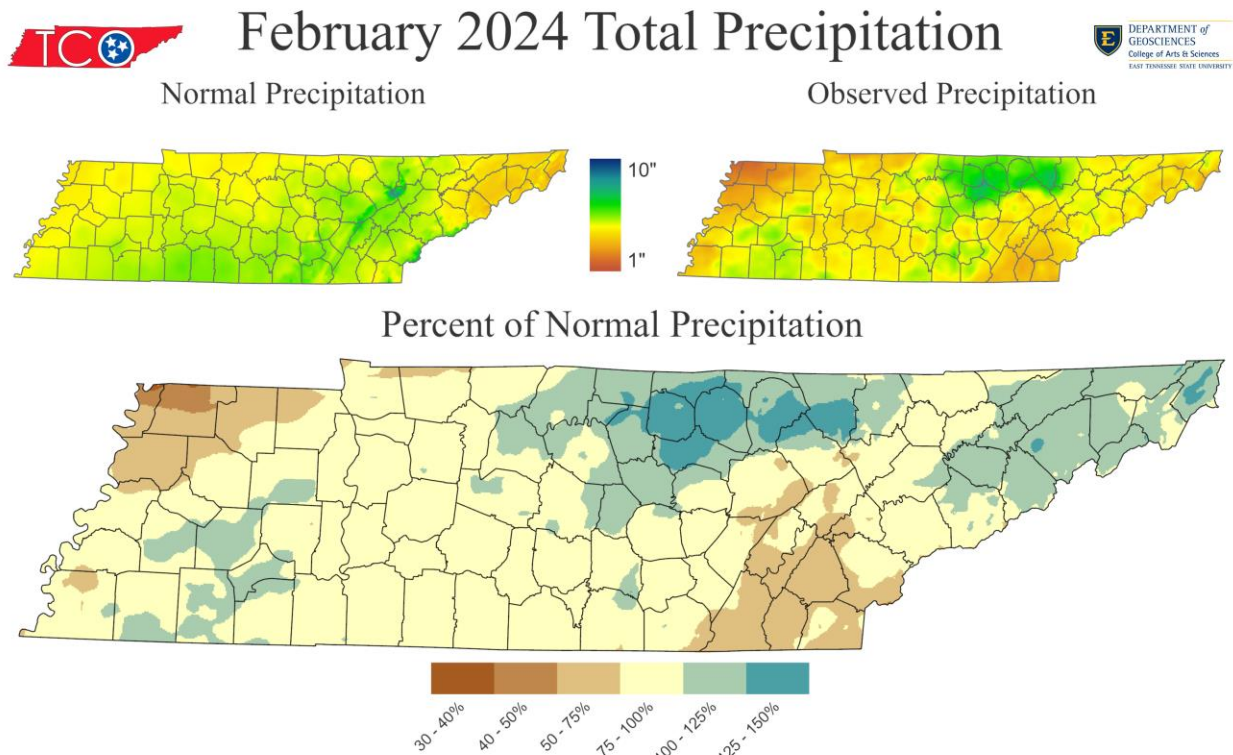
Stations with the lowest mean temperature

Station Name	Station Type	Mean Temperature (F)
MT LECONTE	COOP	32.5
NEWFOUND GAP	COOP	38.1
ROAN MOUNTAIN 3SW	COOP	40.6
MOUNTAIN CITY 2	COOP	41.2
ERWIN 1 W	COOP	42.1

Monthly Precipitation Summary:

Most areas of Tennessee had close to normal precipitation for the month ($\pm 25\%$ of normal), with some drier than normal conditions in the northwest and southeast corners of the state. The northern Cumberland Plateau also recorded some heavier rainfall in the second and fourth weeks of the month, pushing them into the 125-150% of normal category for precipitation. February started out dry, but then the second week of the month brought wide-spread heavy rains totaling 2-4 inches in most parts of the state. Drier conditions returned in the second half of the month with widespread, but light rainfall and some light snowfall.

With the heavy rains there were 7 broken and one tied daily rainfall records set this month, with two of the broken records at stations with at least a 100-year weather record.



Stations with the most precipitation

Station Name	Station Type	Total Precipitation (in)
CLARKRANGE 6.0 NE	CoCoRaHS	8.33
COOKEVILLE 6.4 N	CoCoRaHS	7.75
JAMESTOWN 12.9 S	CoCoRaHS	7.31
SEWANEE	COOP	7.11
COOKEVILLE 3.3 SSW	CoCoRaHS	6.91

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)
CLARKSVILLE 3.4 NNW	CoCoRaHS	1.86
CLEVELAND 1.2 W	CoCoRaHS	1.94
CLARKSVILLE WWTP	COOP	2.41
LOOKOUT MTN-POINT PARK	COOP	2.43
CLARKSVILLE 9.3 ESE	CoCoRaHS	2.66

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	62.8	42.0	52.4	+6.3	78	2/27	25	2/18	3.82	-0.73	84%
Jackson	63.4	37.8	50.6	+7.9	77	2/27	18	2/18	4.70	+0.30	107%
Clarksville	61.2	36.3	48.7	+8.0	77	2/26	16	2/18	2.87	-1.00	74%
Nashville	62.3	38.3	50.3	+6.9	76	2/26	19	2/18	3.81	-0.66	85%
Chattanooga	63.2	38.3	50.8	+5.2	74	2/28	27	2/19	3.15	-1.88	63%
Crossville	56.0	33.4	44.7	+5.9	69	2/26	15	2/18	3.82	-1.31	74%
Knoxville	60.2	36.2	48.2	+5.3	73	2/26	24	2/19	4.64	-0.17	96%
Bristol	58.2	31.1	44.7	+4.7	70	2/27	19	2/19	4.22	+0.41	111%

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
CLARKSVILLE WWTP	COOP	80	26
JACKSON EXP STA	COOP	78	28
FAIRVIEW BOWIE NATURE CENTER	COOP	78	28
MEMPHIS INTERNATIONAL AP	WBAN	78	27
CLARKSVILLE NO.2	COOP	77	25
COLLIERVILLE	COOP	77	28
LOBELVILLE	COOP	77	27
JACKSON MCKELLAR- SIPES AP	WBAN	77	27
DYERSBURG MUNICIPAL AIRPORT	WBAN	77	27
CLARKSVILLE OUTLAW AP	WBAN	77	26

Coldest Stations (lowest minimum temperature)

Station Name	Station Type	Lowest Temperature (F)	Date
UT MARTIN BRANCH EXP STATION	COOP	0	18
MT LECONTE	COOP	7	18
GAINESBORO	COOP	10	19
KINGSTON SPRINGS	COOP	11	19
BETHPAGE 1 S	COOP	13	19
CROSSVILLE 7 NW	WBAN	13	18
TELLICO PLAINS	COOP	14	7
WHITE HOUSE	COOP	14	18
NEWFOUND GAP	COOP	14	18
DICKSON	COOP	15	18
COALMONT	COOP	15	18
CROSSVILLE MEMORIAL AP	WBAN	15	18

Three stations tied for the 10th coldest temperature (15°F)

Warmest Stations (highest mean temperatures)

Station Name	Station Type	Mean Temperature (F)
MEMPHIS INTERNATIONAL AP	WBAN	52.4
CHATTANOOGA AP	WBAN	50.8
MEMPHIS WFO	WBAN	50.8
JACKSON MCKELLAR- SIPES AP	WBAN	50.6
NASHVILLE INTL AP	WBAN	50.3
JACKSON EXP STA	COOP	50.2
DYERSBURG MUNICIPAL AIRPORT	WBAN	50.1
COLLIERVILLE	COOP	50
NASHVILLE BERRY FIELD	COOP	50
FAYETTEVILLE WATER PLANT	COOP	49.3
CLARKSVILLE NO.2	COOP	49.3
CLARKSVILLE WWTP	COOP	49.3

Three stations tied for the 10th warmest temperature (49.3°F)

Cooltest Stations (lowest mean temperatures)

Station Name	Station Type	Mean Temperature (F)
MT LECONTE	COOP	32.5
NEWFOUND GAP	COOP	38.1
ROAN MOUNTAIN 3SW	COOP	40.6
MOUNTAIN CITY 2	COOP	41.2
ERWIN 1 W	COOP	42.1
SPARTA WASTEWATER PLANT	COOP	42.3
MAYNARDVILLE	COOP	42.6
TAZEWELL	COOP	43.4
ONEIDA	COOP	43.5
CROSSVILLE 7 NW	WBAN	43.5

Wettest Stations (highest precipitation totals):

Station Name	Station Type	Total Precipitation (in)
CLARKRANGE 6.0 NE	CoCoRaHS	8.33
COOKEVILLE 6.4 N	CoCoRaHS	7.75
JAMESTOWN 12.9 S	CoCoRaHS	7.31
SEWANEE	COOP	7.11
COOKEVILLE 3.3 SSW	CoCoRaHS	6.91
RICKMAN 3.8 ESE	CoCoRaHS	6.78
COOKEVILLE	COOP	6.72
COOKEVILLE 2.1 NE	CoCoRaHS	6.59
COOKEVILLE 4.6 WNW	CoCoRaHS	6.5
COOKEVILLE 1.0 SW	CoCoRaHS	6.34

Driest Stations (lowest precipitation totals):

Station Name	Station Type	Total Precipitation (in)
CLARKSVILLE 3.4 NNW	CoCoRaHS	1.86
CLEVELAND 1.2 W	CoCoRaHS	1.94
CLARKSVILLE WWTP	COOP	2.41
LOOKOUT MTN-POINT PARK	COOP	2.43
CLARKSVILLE 9.3 ESE	CoCoRaHS	2.66
DYERSBURG MUNICIPAL AIRPORT	WBAN	2.66
OAK GROVE 3.0 E	CoCoRaHS	2.71
EAST RIDGE 0.9 NW	CoCoRaHS	2.71
BELLE MEADE 5.3 WSW	CoCoRaHS	2.73
LOOKOUT MOUNTAIN 0.3 E	CoCoRaHS	2.82

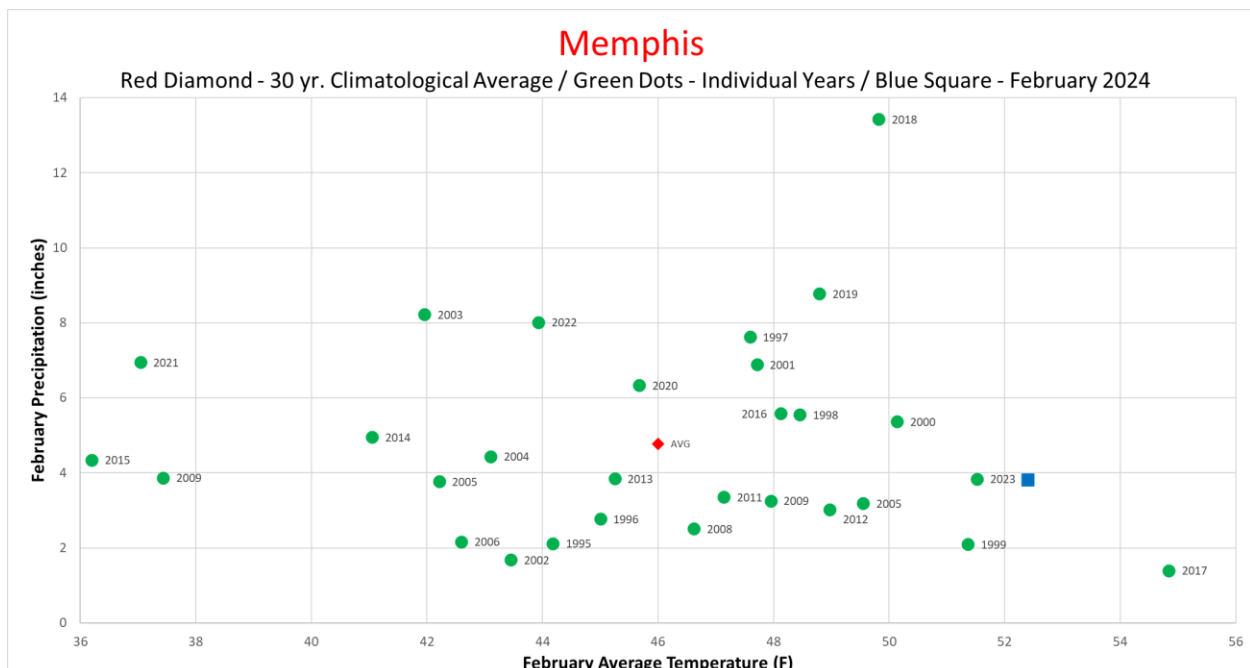
Snowiest Stations (highest snowfall totals):

Station Name	Station Type	Total Snowfall (in)
MT LECONTE	COOP	9
CLARKSBURG 5.6 E	CoCoRaHS	3
DICKSON 5.8 NW	CoCoRaHS	2
NEWFOUND GAP	COOP	1.9
HOLLADAY 4.4 NNE	CoCoRaHS	1.5
MONTEREY 3.2 SE	CoCoRaHS	1.5
JACKSON 4 NE	COOP	1.5
DECATURVILLE	COOP	1.5
MCMINNVILLE 8.5 ESE	CoCoRaHS	1.4
RED BOILING SPRINGS 6.7 NNE	CoCoRaHS	1.1
ATWOOD 0.8 WSW	CoCoRaHS	1.1

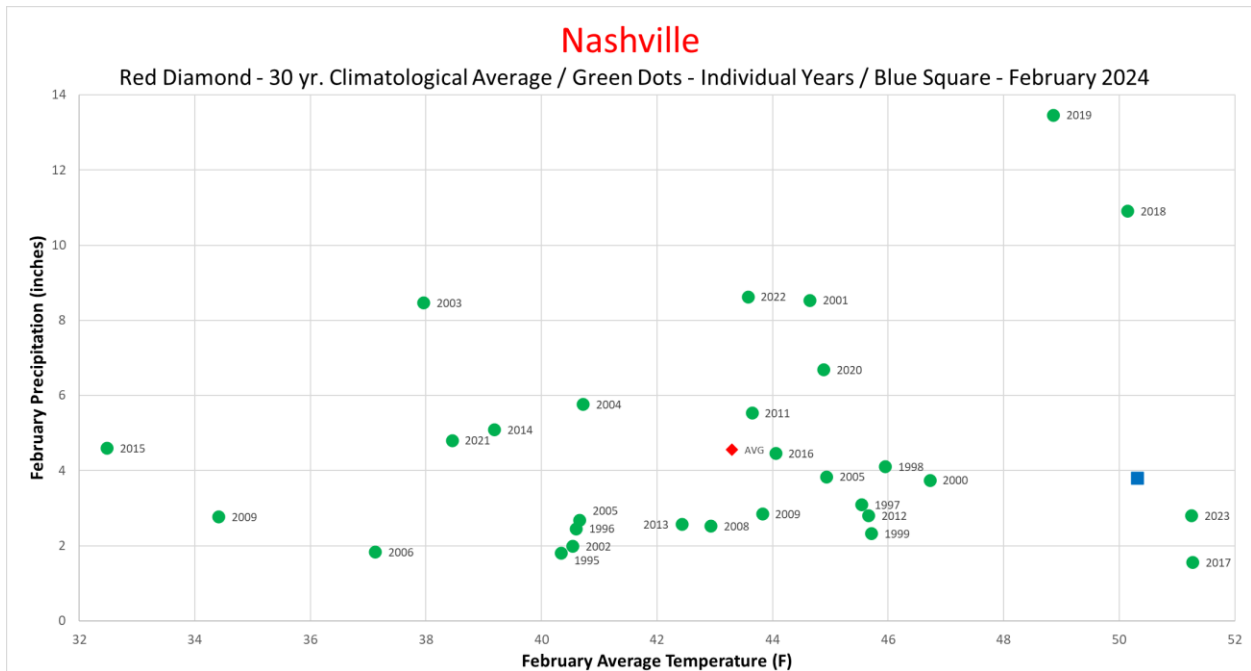
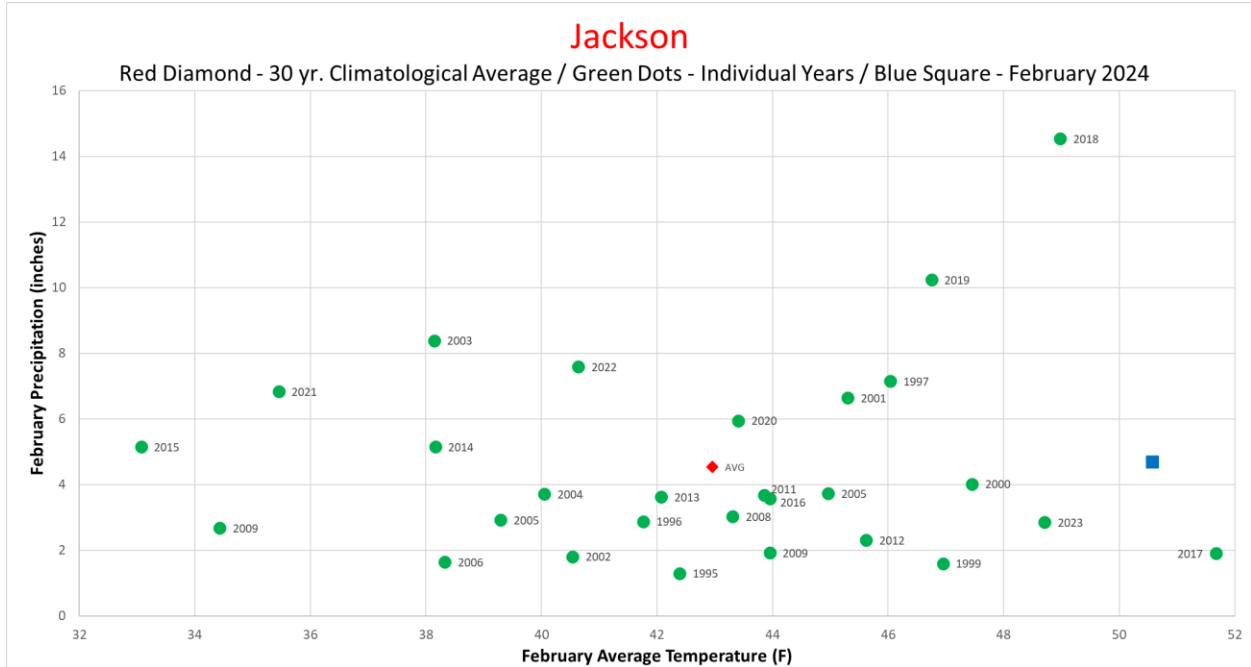
*Two stations tied for the 10th highest snowfall total (1.1")
A total of 54 weather stations reported measurable snowfall this month*

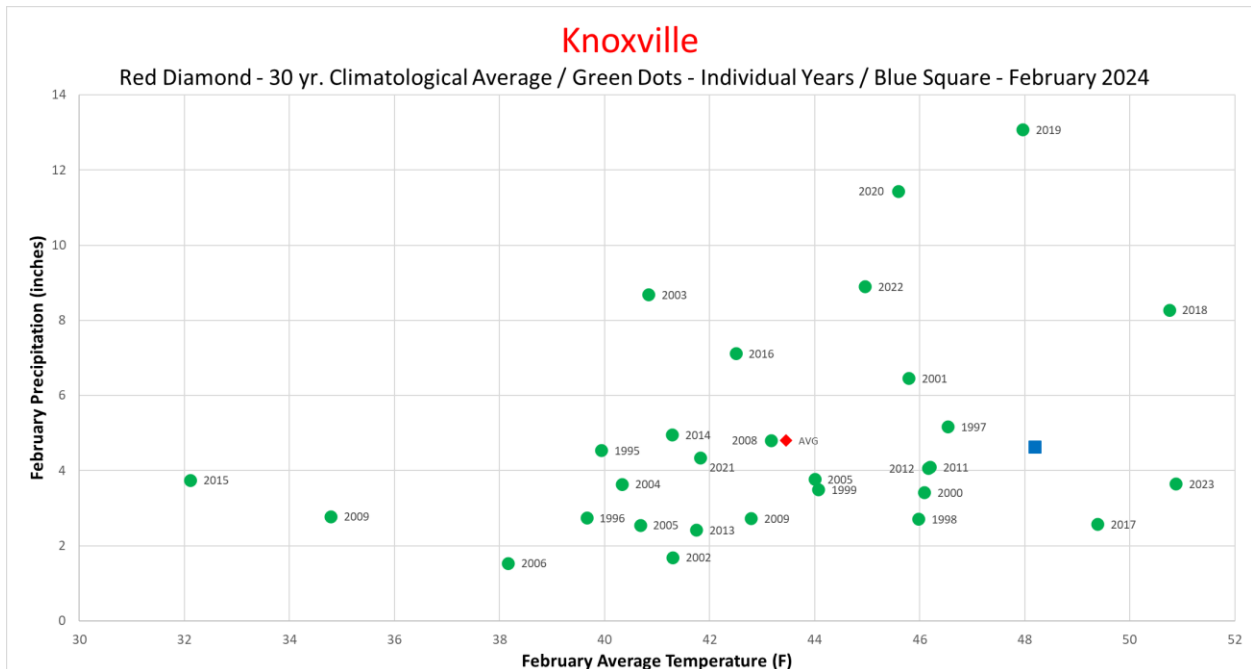
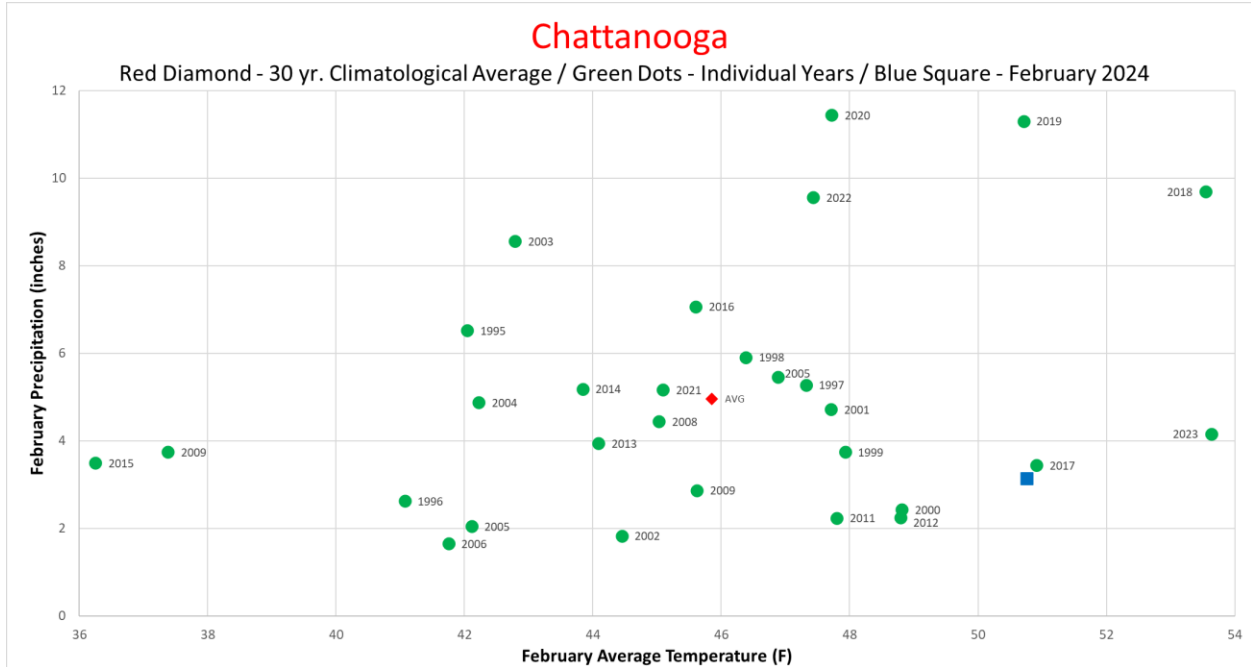
The Month in Comparison:

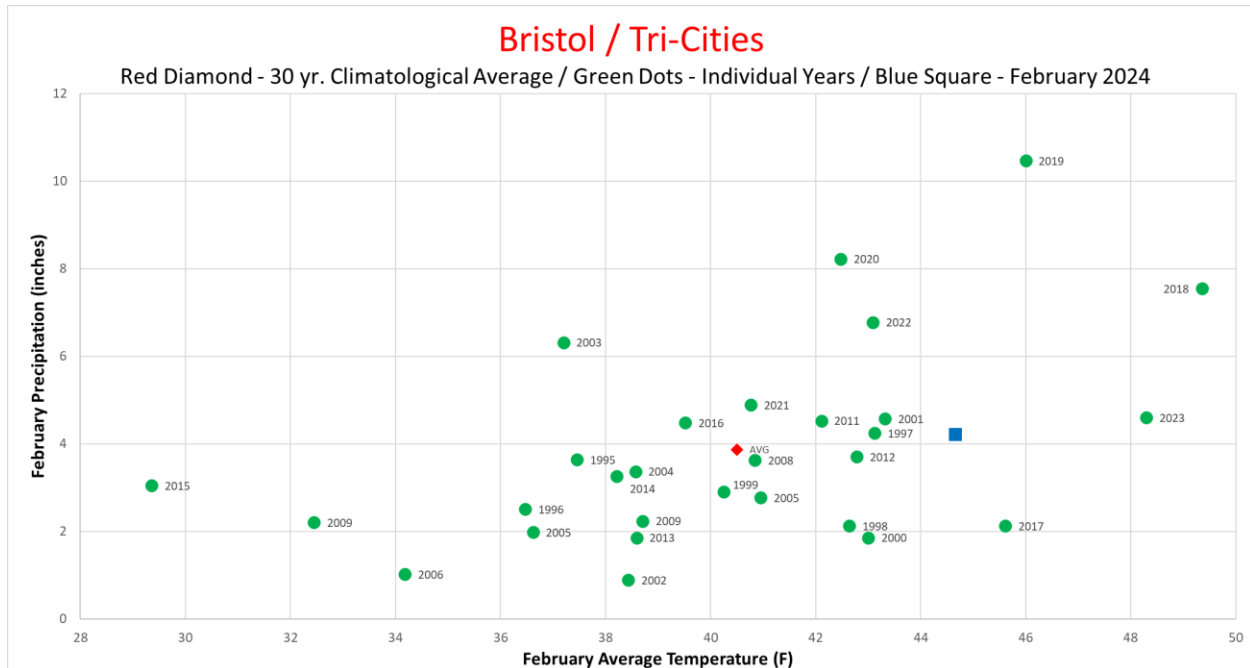
Comparing the monthly average temperature and total precipitation of February 2024 to the conditions of February in the past thirty years, the average temperature this month was well above average at major airports across the state. It was the second warmest February of the past thirty years for Memphis and Jackson, both trailing behind 2017. This month was the third warmest February for Nashville behind 2017 and 2023, it was the 4th warmest February in Chattanooga and Knoxville, and 5th warmest February in the Tri-Cities. However, looking at the full weather history for each of these cities, Jackson tied for the 4th warmest February (119-year history) Nashville (150-year history) and Memphis (147 year history) were tied for their 5th warmest February, Bristol/Tri-Cities (77-year history) recorded its 8th warmest February, Chattanooga (140-year history) its 9th warmest, and Knoxville (148-year history) tied for its 12th warmest February. Precipitation totals this month were not a major outlier for any station.



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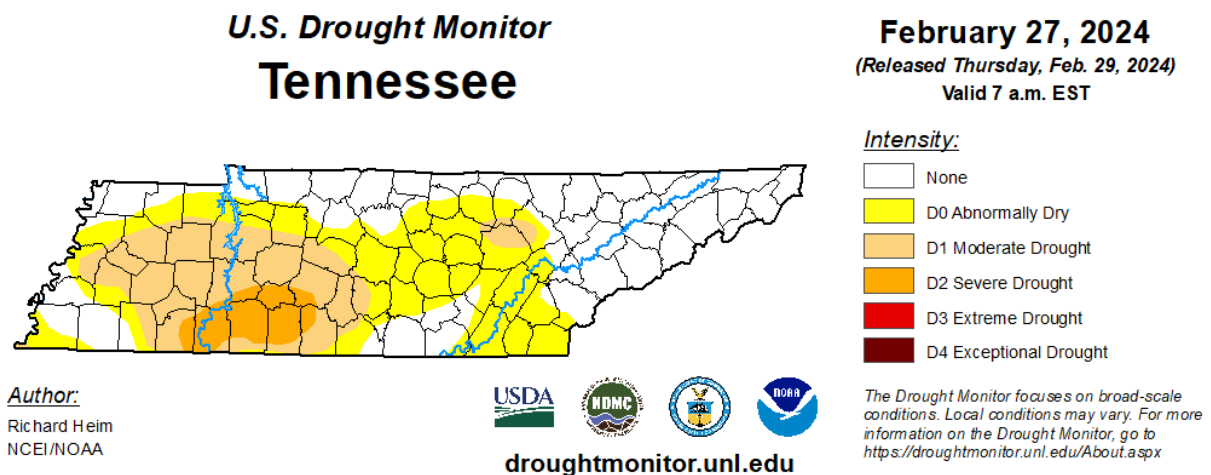






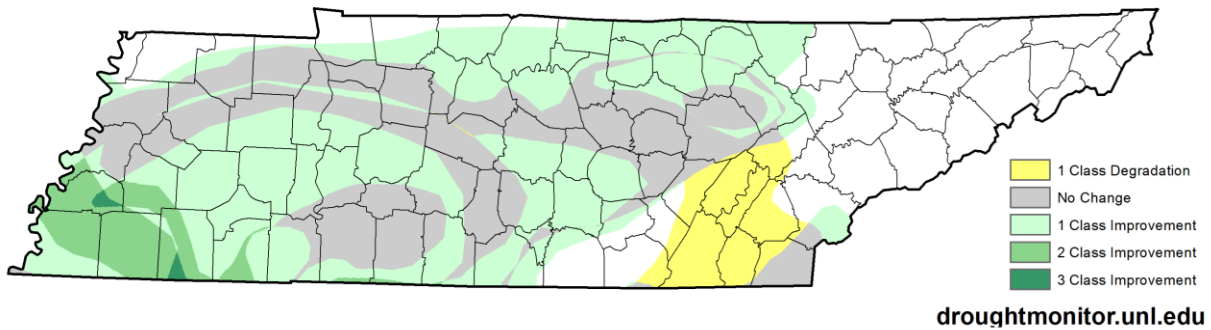
Drought Monitor:

In the last U.S. Drought Monitor released in February, there were still a few areas of Moderate Drought and one area of Severe Drought in the state (stretching from McNairy County to the east/northeast through parts of Lewis, Maury, and Giles counties). In total, 27.11% of the state’s area was shown in some level of drought, with an additional 30.22% of the state shown in Abnormally Dry (D0) conditions. Over the month of February, there were large areas of improvement in the western two thirds of the state early in the month, with some areas in southwest Tennessee seeing 2-3 categories of improvement since January 30th. Some areas in the southern Tennessee Valley (e.g., Chattanooga) experienced some drying and degraded into abnormally dry conditions (D0) over the month.



February 27, 2024
 compared to
 January 30, 2024

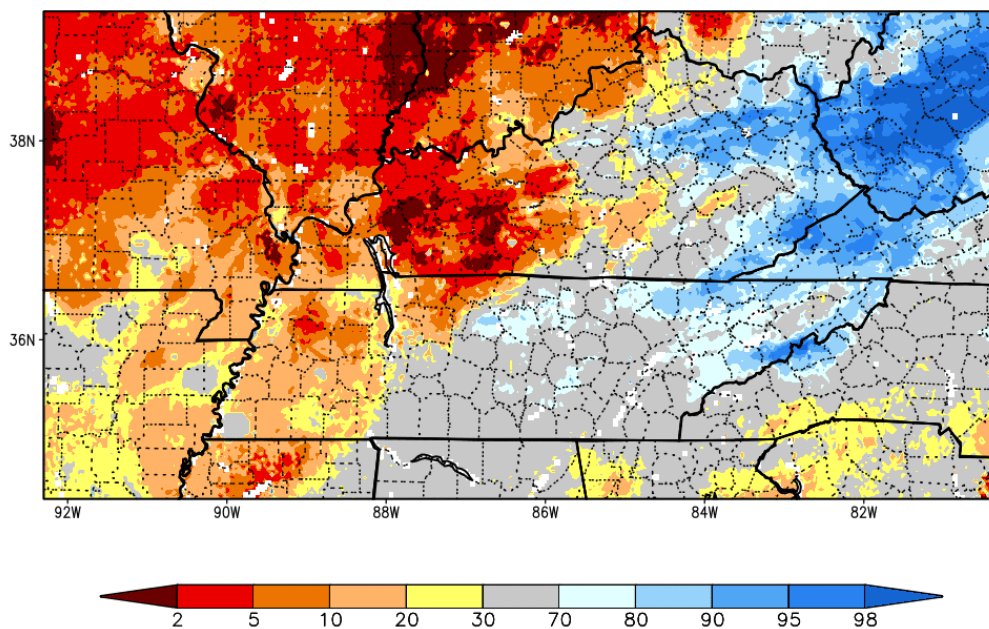
U.S. Drought Monitor Class Change - Tennessee
 4 Week



Soil Moisture:

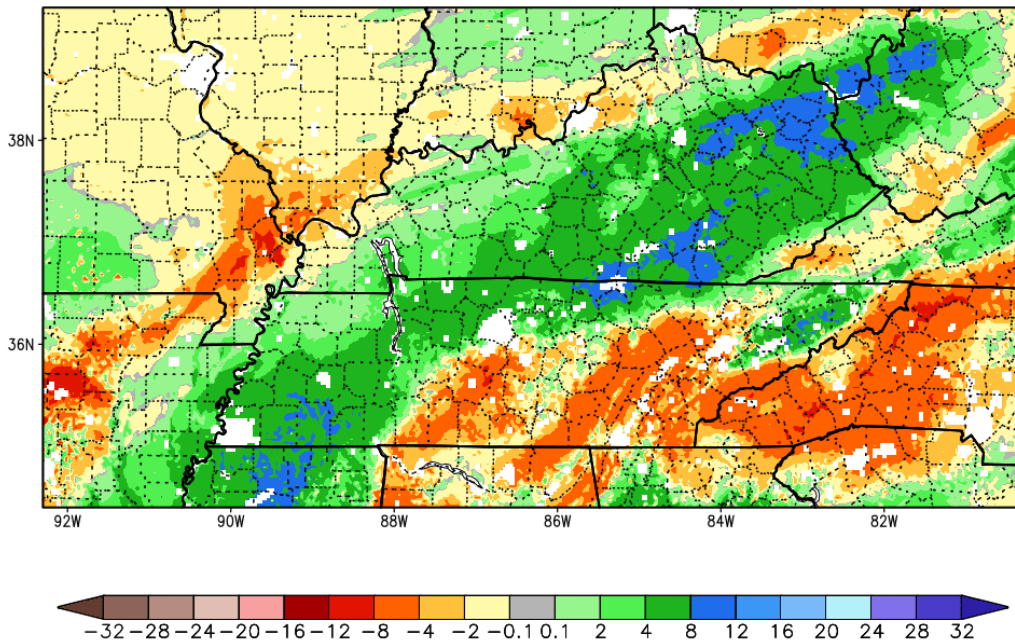
Data from the NASA SPoRT Land Information System shows that almost all areas in the eastern half of the state have normal to above normal soil moisture levels, while most areas in West Tennessee are still lagging behind normal soil moisture levels. In the last week of February, the USDA rated topsoil moisture across Tennessee as 4% short, 76% adequate, and 20% surplus, while subsoil moisture was rated 1% very short, 7% short, 78% adequate, and 14% surplus.

SPoRT-LIS 0-200 cm Soil Moisture percentile valid 29 Feb 2024



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

1-Month Difference in Column Relative Soil Moisture (%) valid 12z 29 Feb 2024



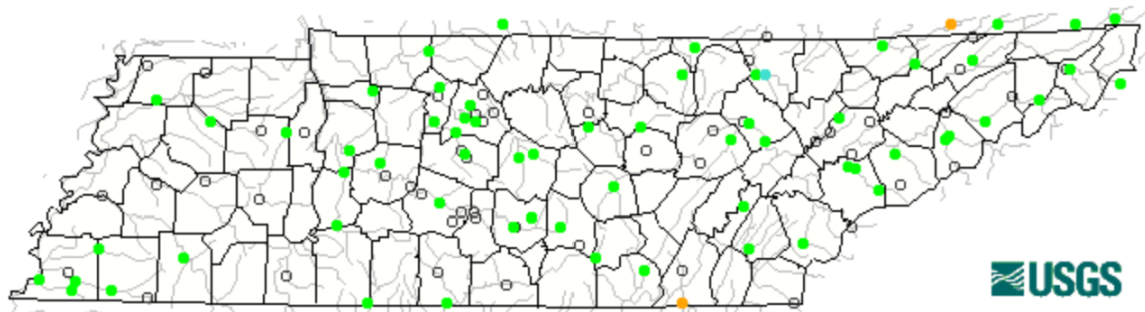
NOTE
Experimental

Streamflow:

Almost all stream gauges in the state averaged in the normal range of streamflow for the month of February, suggesting that stream levels have recovered from the fall to early winter drought that impacted the state in the later parts of 2023.

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

February 2024



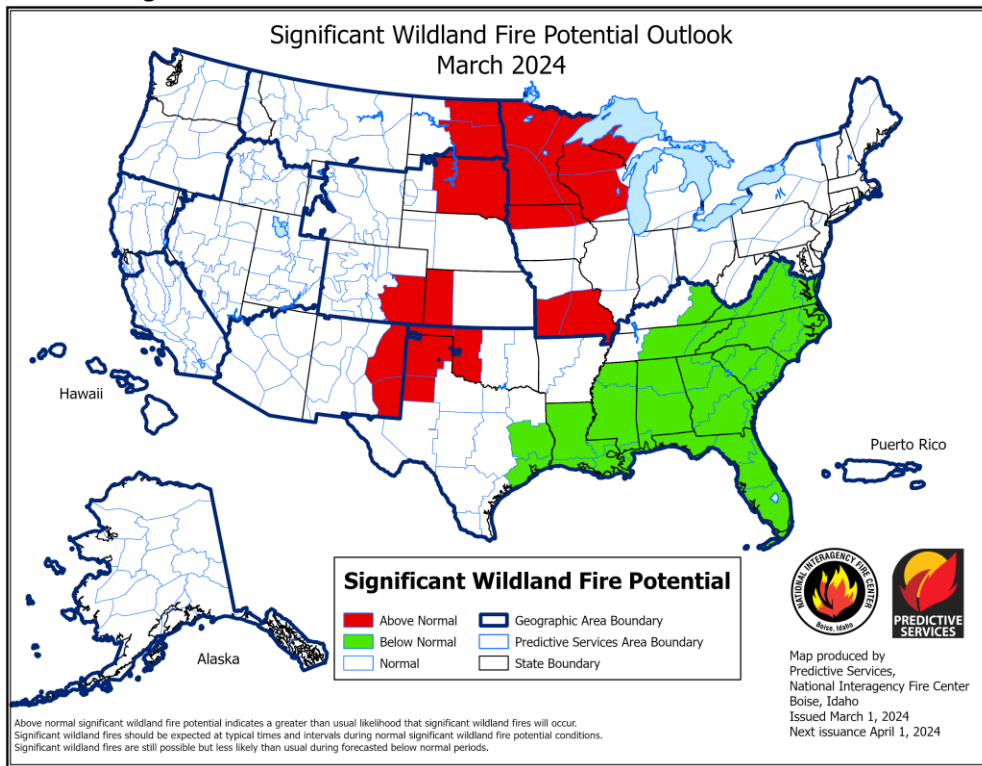
Explanation - Percentile classes							
Low	<10	10-24	25-75	76-90	>90	High	Not-ranked
	Much below normal	Below normal	Normal	Above normal	Much above normal		

Miscellaneous:

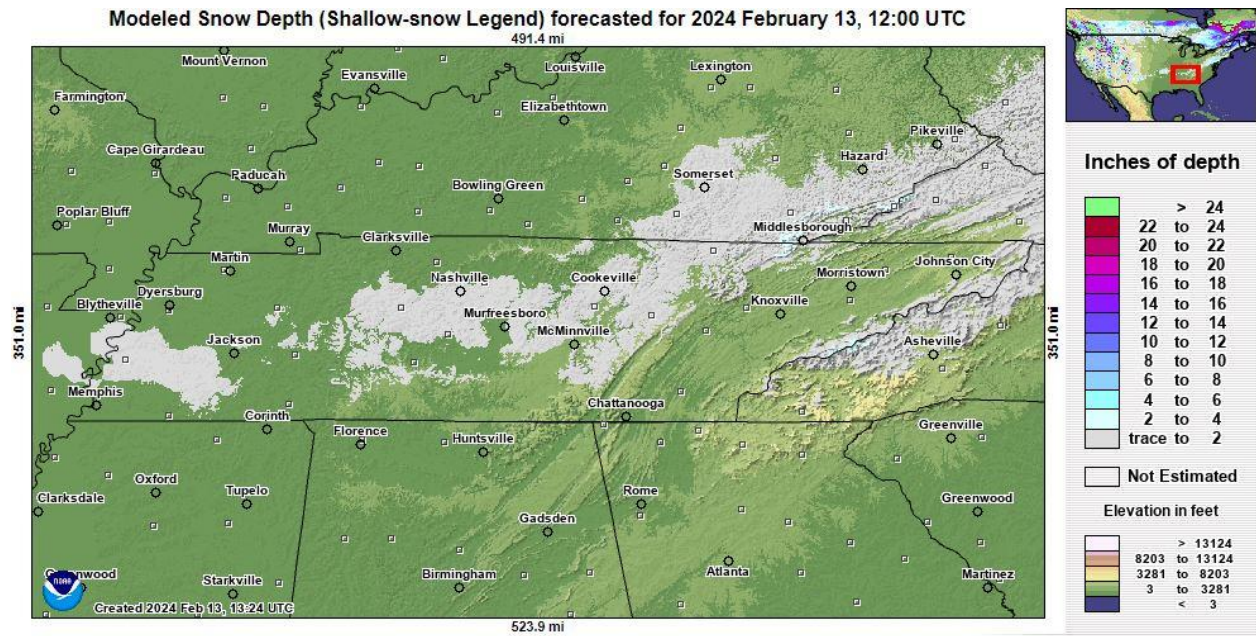
Crop Conditions from USDA: Close to normal rains, and warmer than normal conditions in February have helped crop and cattle conditions to improve from the end of last month. Most producers report that seeded winter wheat remains in good shape thus far. Pastures are slowly recovering from the fall drought and January deep freeze with cool season grasses starting to come in. Pasture regrowth cannot come soon enough, as many cattle producers face low hay supplies. With hay and roughage supplies across the state rated as 7% very short, 34% short, 54% adequate, and 5% surplus.

Crop	Very Poor	Poor	Fair	Good	Excellent
Winter Wheat	0%	11%	37%	40%	12%
Pasture and Range	6%	20%	40%	32%	2%
Cattle	1%	4%	32%	56%	7%

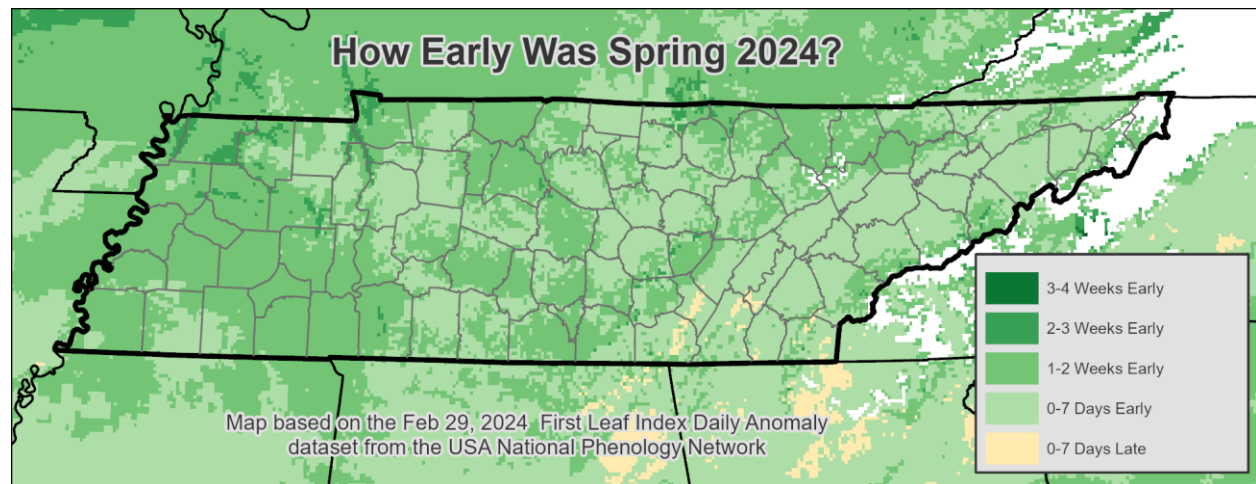
Fire Danger: The Interagency Fire Center significant wildland fire potential outlook for March 2024 shows that the eastern two thirds of Tennessee will have below normal potential and West Tennessee will have normal potential for significant wildland fires.



Snowfall: There were a couple rounds of light snowfall this month, A total of 54 stations reported measurable snow and an additional 43 observations of a Trace (less than 0.1”) of snow this month. The majority of stations that reported trace or measurable snowfall amounts reported their highest totals on February 13, 17, or 25. February 13 was the day with the highest amount of snow coverage in the state, as a band of accumulating snow moved across central portions of the state from West Tennessee over to the Cumberland Plateau and in the high elevations of East Tennessee.



Spring Greenup: Almost all areas of Tennessee had seen the emergence of the first leaf, a metric for the arrival date of spring. Using data from the USA National Phenology Network for February 29th, the map below shows where areas of the state had seen the first leaf emergence by the end of February. Comparing this year’s date of first leaf emergence, with the average of the past 30 years, this year’s spring arrived 1-2 weeks earlier than average for most areas of the state, with a few locations 2-3 weeks early, and a few locations up to 1 week later than average.



Story of the Month:

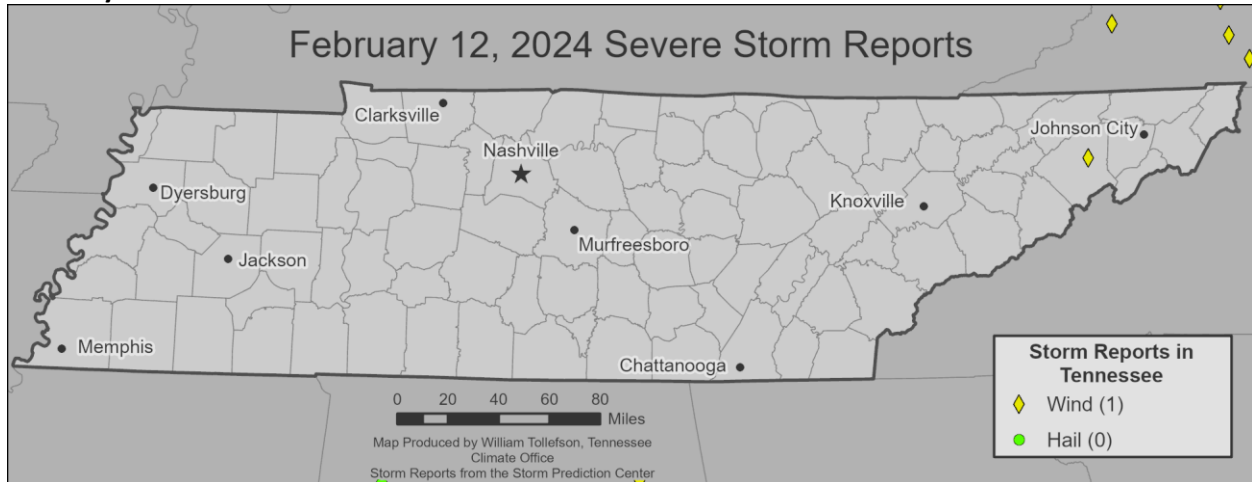
The major story of the month was the much higher than normal temperatures driven by above normal temperatures through most of the month and several rounds of warm weather that sent temperatures into the 70’s across the state. Of the 105 weather stations that reported temperature data in Tennessee this month, 87 stations recorded temperatures in the 70’s. Most of these weather stations recorded their highest temperatures from February 26-28, with a few others recording their highest temperatures on the 3rd or 4th. This is the second year in a row with record-setting heat in February for Tennessee, with most areas in West Tennessee being warmer this February than last year, but for Middle and East Tennessee last year’s February was warmer.

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](https://www.spc.noaa.gov) for any updates.*

During the month of February there were 4 days with severe storm reports, producing a total of 0 tornadoes, 7 severe thunderstorm wind reports, and 1 report of severe hail (at least 1" in diameter).

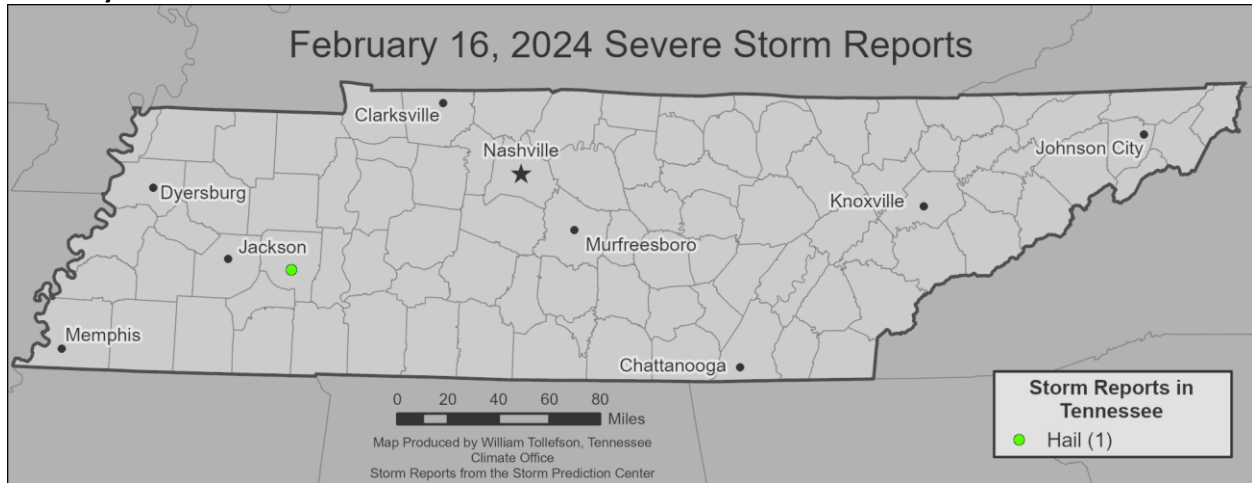
February 12



Wind:

Time (UTC)	Speed (mph)	Location	County	Lat	Lon	Comments
2:38	--	3 NW Afton	Greene	36.22	-82.78	A few trees down reported so far between Tusculum and Mosheim. Time estimated by radar. (MRX)

February 16



Hail

Time (UTC)	Size (in)	Location	County	Lat	Lon	Comments
21:58	1.00	4 S Lexington	Henderson	35.6	-88.39	Quarter size hail fell near I-22 south of Lexington. Time is radar estimated. (MEG)

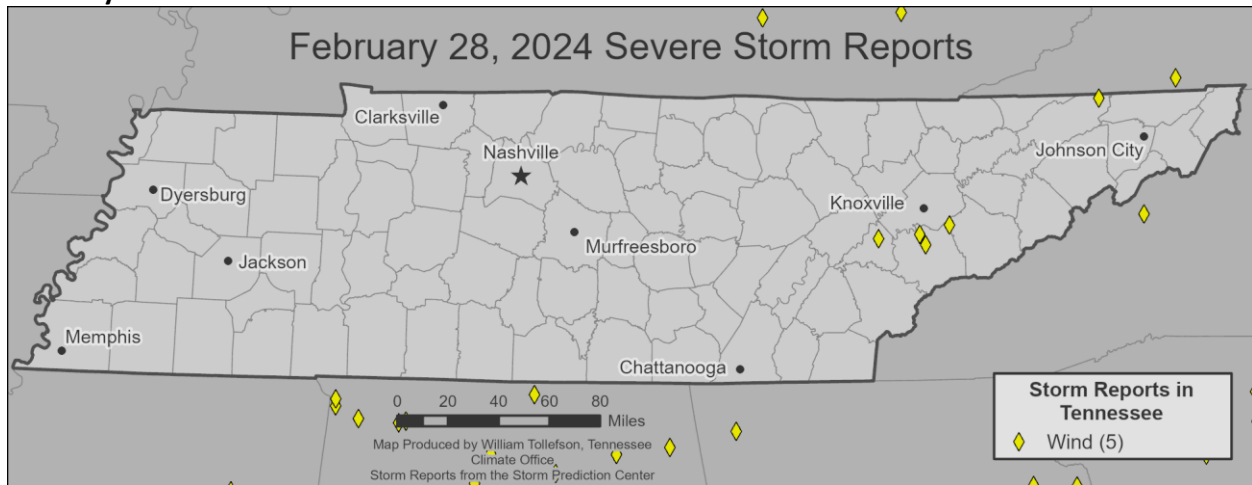
February 27



Wind:

Time (UTC)	Speed (mph)	Location	County	Lat	Lon	Comments
11:00	--	Maury City	Crockett	35.81	-89.23	Tree and roof damage reported by EM. (MEG)

February 28



Wind:

Time (UTC)	Speed (mph)	Location	County	Lat	Lon	Comments
17:05	--	Lenoir City	Loudon	35.8	-84.27	Numerous trees and power lines down across the county. (MRX)
17:23	75	2 N Alcoa	Blount	35.82	-83.98	ASOS station KTYS Knoxville McGhee Tyson. (MRX)
17:37	--	2 WNW Mount Carmel	Hawkins	36.57	-82.69	Reported by Trained Spotter. 3 NE Church Hill - Personal Weather Station (tempest) recorded Thunderstorm wind gust of 62mph. (MRX)
17:42	67	2 S Eagleton Village	Blount	35.76	-83.94	Reported by Trained Spotter. Structural posts used to extend the height of a fence post have been broken/bent. (MRX)
17:45	--	Seymour	Sevier	35.87	-83.77	Multiple reports of trees down across the community. (MRX)

CPC Outlooks for the Next Month:

The NOAA Climate Prediction Center’s outlooks for March 2024 show that all of Tennessee is leaning towards a warmer than normal March, with higher confidence in the northeastern portion of the state. March 2024 is leaning towards a wetter than normal month for most of the state, with higher confidence in East Tennessee and southern parts of Middle Tennessee. The northwest portion of the state is shown with equal chances for a wetter than normal, drier than normal, or normal March.

