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5-1-2023

2023 May - Tennessee Monthly Climate Report

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May 2023 Tennessee State Climate Summary

Tennessee Climate Office * East Tennessee State University

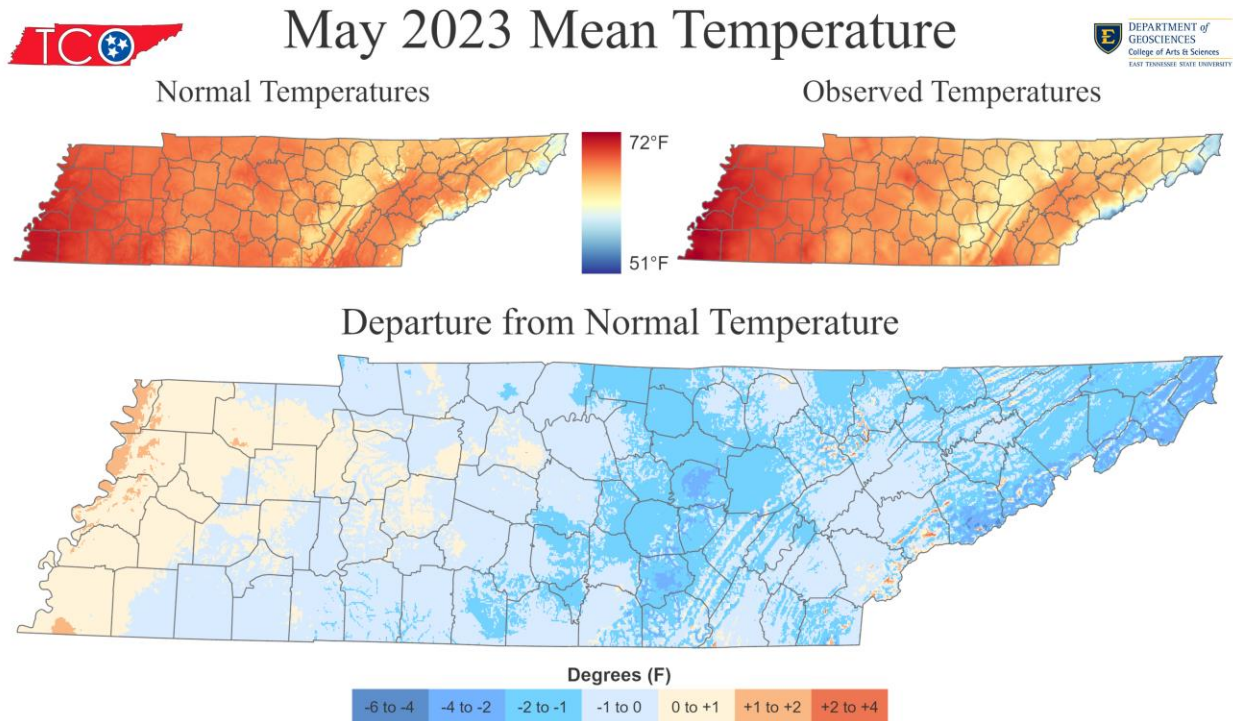
Prepared by William Tollefson and Dr. Andrew Joyner

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

Monthly Temperature Summary:

May 2023 averaged out to be cooler than normal for most areas of the state, with East Tennessee and the Cumberland Plateau averaging 1-4°F cooler than the 1991-2020 climate normals; however, western parts of West Tennessee did record a slightly warmer than normal May. May started off on a cold note, with most areas of the state recording a mean temperature that was 6-8°F cooler than normal for the first week of the month. Temperatures rebounded in the second week, with the majority of the state running 4-8°F warmer than normal, with warmer than normal conditions continuing into the third week of the month although temperatures were not as extreme. Then slightly cooler than normal temperature returned for the last week of the month.

There were no daily high temperature records set, but three were tied, and there were 10 broken and 11 tied records for warmest daily low temperature set this month, mostly in the middle of the month. On the cold side of the record books, there were 5 broken and one tied record low temperatures set this month. Of those, Brownsville and Bolivar (both in West Tennessee) set monthly low temperature records in May, with lows of 31°F on the 2nd and 29°F on the 3rd, respectively. There were also 12 broken and 4 tied daily records for coolest high temperature, mostly at the beginning and end of the month (May 1-4 and 28-31).



Stations with the highest mean temperature

Station Name	Station Type	Mean Temperature (F)
MEMPHIS INTERNATIONAL AP	WBAN	72.6
MEMPHIS WFO	WBAN	70.5
DYERSBURG MUNICIPAL AIRPORT	WBAN	70.4
SHILOH NMP TENNESSEE	RAWS	70.3
NASHVILLE INTL AP	WBAN	70

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	46.6
NEWFOUND GAP	COOP	54.6
ROAN MOUNTAIN 3SW	COOP	57.5
MOUNTAIN CITY 2	COOP	58.8
CHEROKEE TENNESSEE	RAWS	60.3

Monthly Precipitation Summary:

Most of Tennessee recorded below normal precipitation for the month of May, with only spotty areas, mostly in Middle and East Tennessee, recording above average precipitation. A few areas in southeast Tennessee and West Tennessee recorded less than 30% of their normal May precipitation. Most areas that recorded above normal precipitation for the month had heavy rainfall and thunderstorms move through in the first half of the month, with some areas picking up 4-5-inches of rain in the second week of the month. There were isolated heavy rains associated with storms in the third week of the month, and the northeast corner of the state recorded heavy precipitation in the last week of the month associated with the low-pressure system that formed off the coast of the Carolinas. Associated with these heavy rains, there were 20 broken and 1 tied records for highest daily rainfall totals set this month across Tennessee. Despite April having no snowfall reported in Tennessee, the Mt. LeConte COOP station in the Smoky Mountains reported 0.1-inch of snowfall on May 1.

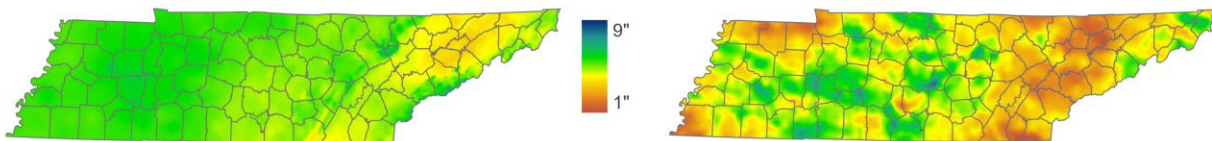


May 2023 Total Precipitation

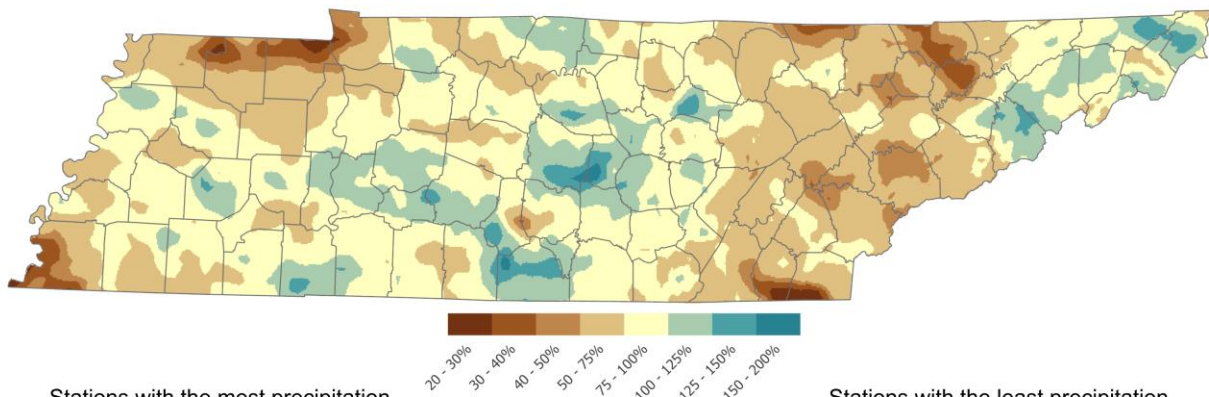


Normal Precipitation

Observed Precipitation



Percent of Normal Precipitation



Stations with the most precipitation

Station Name	Station Type	Total Precipitation (in)
MILAN EXP STN	COOP	11.12
FRANKewing 4.0 ENE	CoCoRaHS	8.71
FAYETTEVILLE 7.9 WNW	CoCoRaHS	7.82
COOKEVILLE 1.0 SW	CoCoRaHS	7.66
COOKEVILLE 3.3 SSW	CoCoRaHS	7.37

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)
ROCK ISLAND STATE PARK	COOP	0.88
KNOXVILLE AP	WBAN	1.32
BROWNSVILLE	COOP	1.51
NORRIS 0.6 NW	CoCoRaHS	1.58
TAZEWELL	COOP	1.58

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	82.2	63.1	72.6	+0.5	91	5/15	46	5/2	2.05	-3.22	39%
Jackson	80.0	57.5	68.7	-0.2	90	5/15	38	5/4	7.03	+1.45	126%
Clarksville	79.8	57.9	68.9	+1.6	90	5/14	40	5/4	3.50	-1.4	71%
Nashville	80.5	59.5	70.0	+0.7	90	5/15	42	5/4	4.51	-0.51	90%
Chattanooga	79.4	59.2	69.3	-0.7	89	5/14	41	5/3	2.14	-1.8	54%
Crossville	72.7	52.2	62.5	-0.7	80	5/16	34	5/4	3.39	-1.79	65%
Knoxville	77.3	56.9	67.1	-0.8	86	5/16	39	5/4	1.32	-2.81	32%
Bristol	75.9	52.2	64.0	-0.7	86	5/12	34	5/4	3.75	-0.07	98%

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
SAVANNAH 6 SW	COOP	91	16
BOLIVAR WATER WORKS	COOP	91	16
BROWNSVILLE	COOP	91	16
JACKSON EXP STA	COOP	91	16
TENNESSEE RIDGE	COOP	91	15
MOUSETAIL LANDING STATE PARK	COOP	91	16
SHILOH NMP TENNESSEE	RAWS	91	15
MEMPHIS INTERNATIONAL AP	WBAN	91	15
DYERSBURG MUNICIPAL AIRPORT	WBAN	91	15
MEMPHIS WFO	WBAN	91	16

Coldest Stations (lowest minimum temperature)

Station Name	Station Type	Lowest Temperature (F)	Date
MT LECONTE	COOP	24	2
BOLIVAR WATER WORKS	COOP	29	3
BROWNSVILLE	COOP	31	2
CARTHAGE	COOP	31	4
ROAN MOUNTAIN 3SW	COOP	31	4
NEWFOUND GAP	COOP	31	1
MOUNTAIN CITY 2	COOP	32	4
ONEIDA	COOP	32	5
COALMONT	COOP	32	5
FALL CREEK FALLS SP	COOP	32	4
CHARLOTTE	COOP	32	9

Five stations tied for the 7th coldest temperature (32°F)

Warmest Stations (highest mean temperatures)

Station Name	Station Type	Mean Temperature (F)
MEMPHIS INTERNATIONAL AP	WBAN	72.6
MEMPHIS WFO	WBAN	70.5
DYERSBURG MUNICIPAL AIRPORT	WBAN	70.4
SHILOH NMP TENNESSEE	RAWS	70.3
NASHVILLE INTL AP	WBAN	70
CHATTANOOGA AP	WBAN	69.3
JACKSON EXP STA	COOP	69.2
SAVANNAH 6 SW	COOP	69.1
CLARKSVILLE WWTP	COOP	69
AMES PLANTATION	COOP	68.9
CLARKSVILLE OUTLAW AP	WBAN	68.9

Two stations tied for the 10th warmest mean temperature (68.9°F)

Coollest Stations (lowest mean temperatures)

Station Name	Station Type	Mean Temperature (F)
MT LECONTE	COOP	46.6
NEWFOUND GAP	COOP	54.6
ROAN MOUNTAIN 3SW	COOP	57.5
MOUNTAIN CITY 2	COOP	58.8
CHEROKEE TENNESSEE	RAWS	60.3
GATLINBURG 2 SW	COOP	60.7
TOWNSEND 5S	COOP	61.1
COALMONT	COOP	61.2
CROSSVILLE 7 NW	WBAN	61.3
CROSSVILLE EXP STN	COOP	61.8
ERWIN 1 W	COOP	61.8

Two stations tied for the 10th coolest mean temperature (61.8°F)

Wettest Stations (highest precipitation totals):

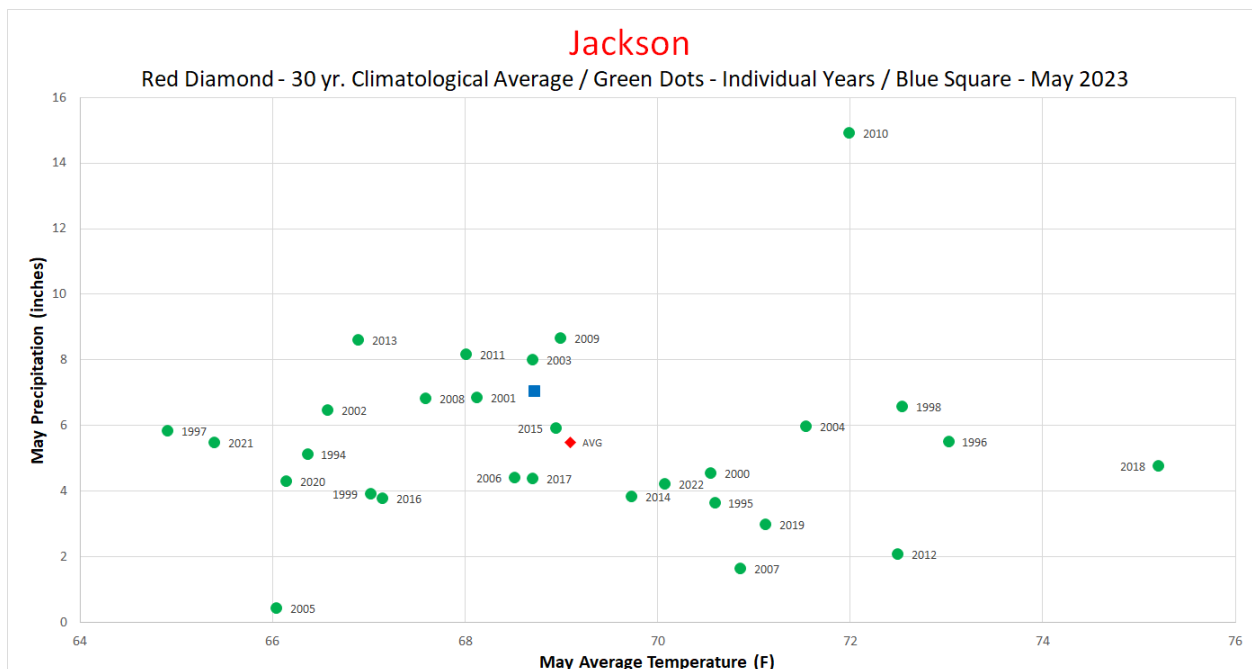
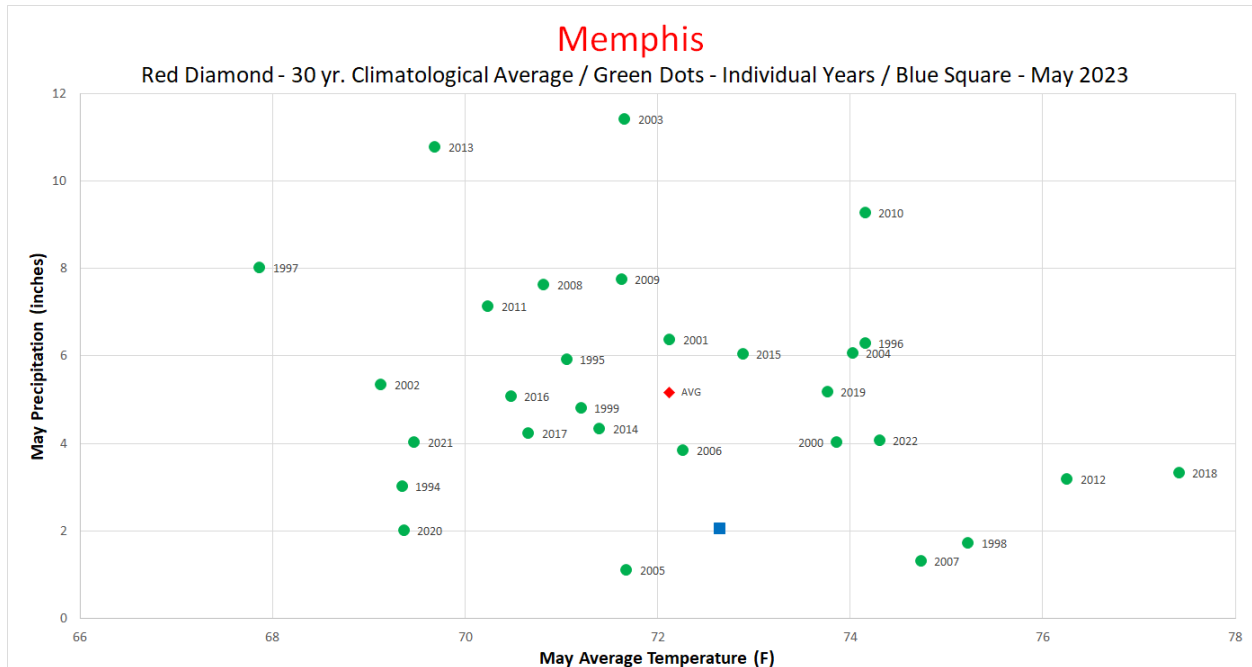
Station Name	Station Type	Total Precipitation (in)
MILAN EXP STN	COOP	11.12
FRANKEWING 4.0 ENE	CoCoRaHS	8.71
FAYETTEVILLE 7.9 WNW	CoCoRaHS	7.82
COOKEVILLE 1.0 SW	CoCoRaHS	7.66
COOKEVILLE 3.3 SSW	CoCoRaHS	7.37
LEWISBURG 5.1 SW	CoCoRaHS	7.27
HOHENWALD 2.2 SE	CoCoRaHS	7.2
MOUSETAIL LANDING STATE PARK	COOP	7.16
LYNCHBURG 0.7WNW	CoCoRaHS	7.12
HAMPSHIRE 2.7 SW	CoCoRaHS	7.1

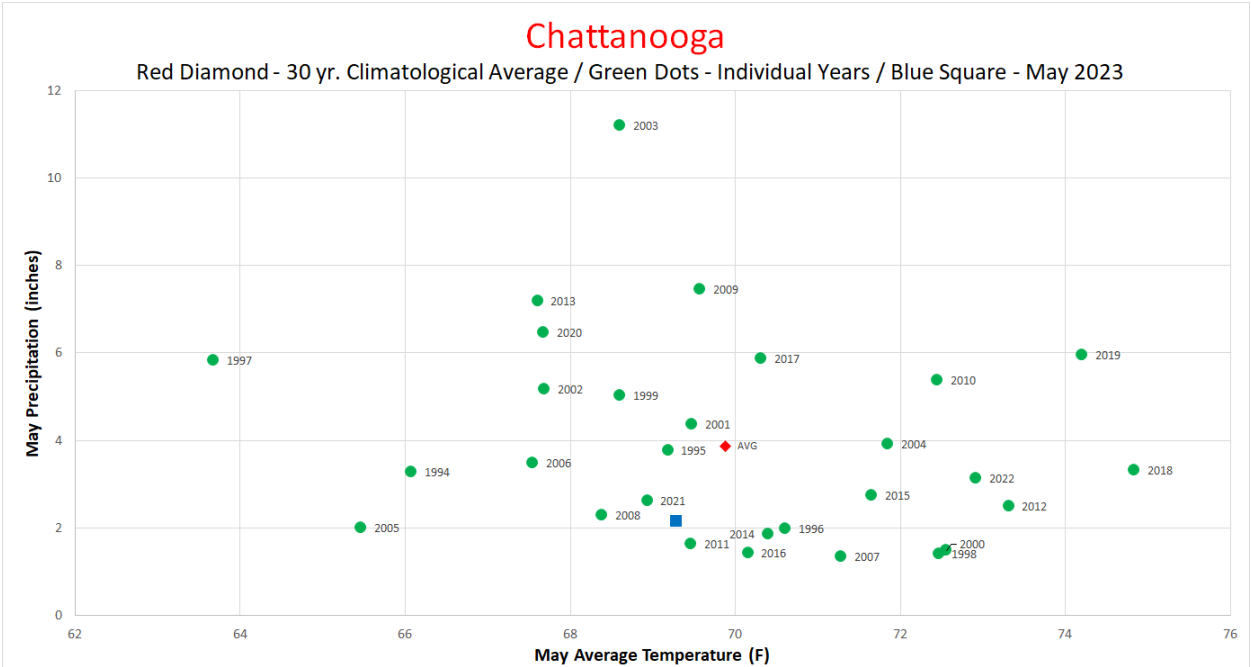
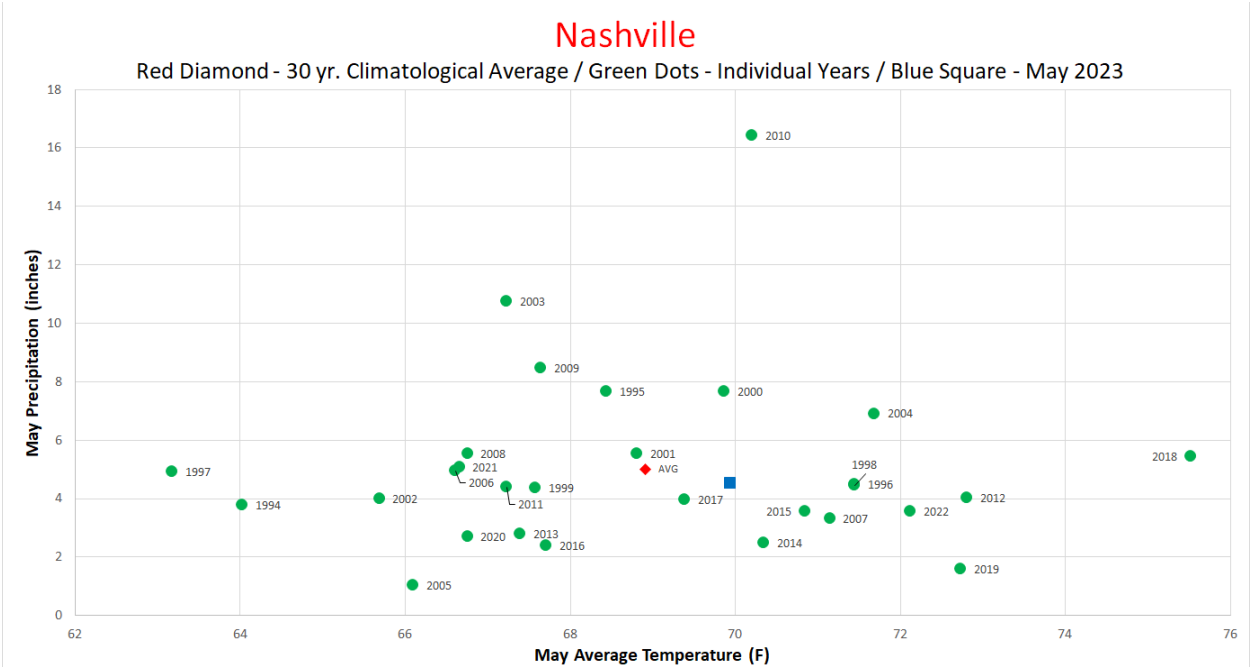
Driest Stations (lowest precipitation totals):

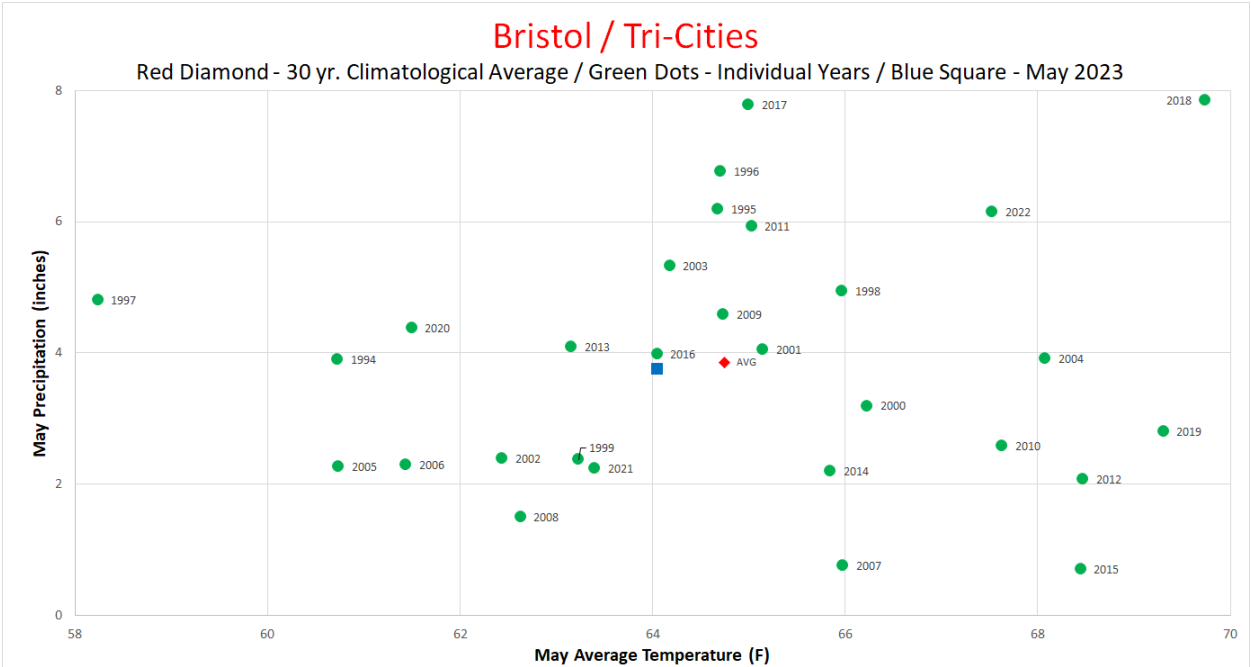
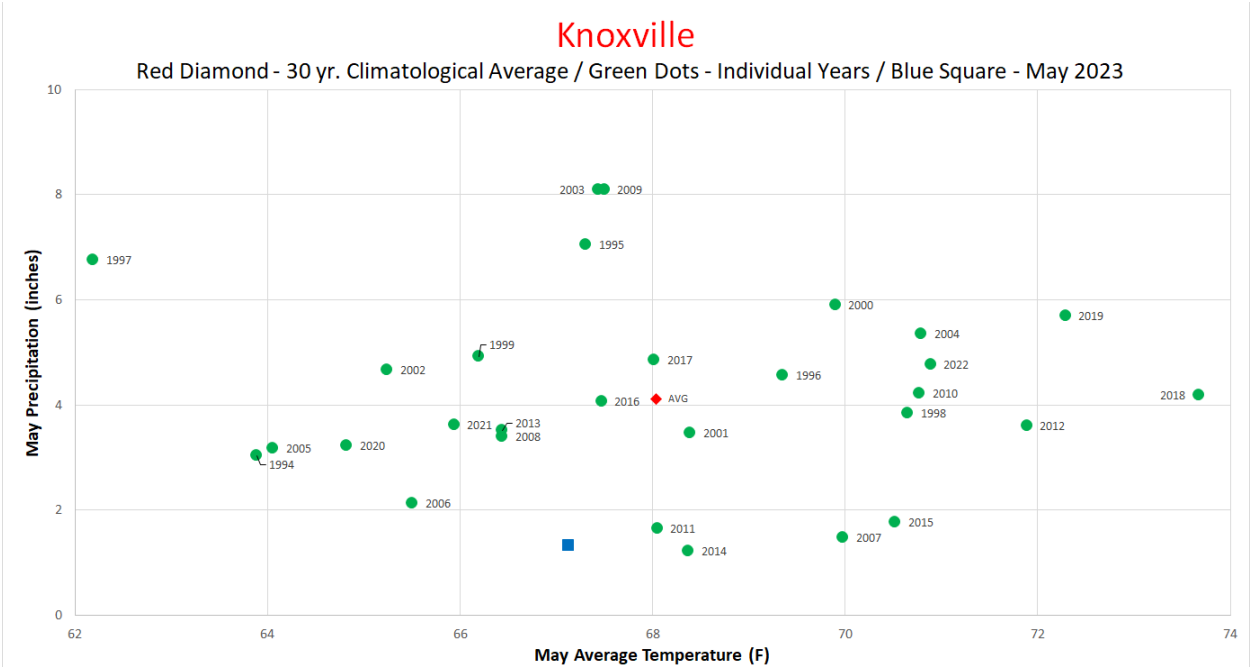
Station Name	Station Type	Total Precipitation (in)
ROCK ISLAND STATE PARK	COOP	0.88
KNOXVILLE AP	WBAN	1.32
BROWNSVILLE	COOP	1.51
NORRIS 0.6 NW	CoCoRaHS	1.58
TAZEWELL	COOP	1.58
FRIENDSVILLE 2.3 ESE	CoCoRaHS	1.75
MARYVILLE 3.4 ESE	CoCoRaHS	1.77
OAK GROVE 3.0 E	CoCoRaHS	1.79
KNOXVILLE 11.2 WSW	CoCoRaHS	1.84
OLTEWAH 6.7 NNE	CoCoRaHS	1.91

The Month in Comparison:

Most weather stations across the state recorded near normal temperatures compared to the mean temperatures for May over the past 30-years. Most cities recorded near normal rainfall, but Knoxville recorded its second driest May of the past 30 years in 2023, with 2023 being the 13th driest May in the city's 153-year weather history. 2023 was also the 5th driest May of the past 30 years at Memphis, and 26th driest May in the city's 148-year weather history.

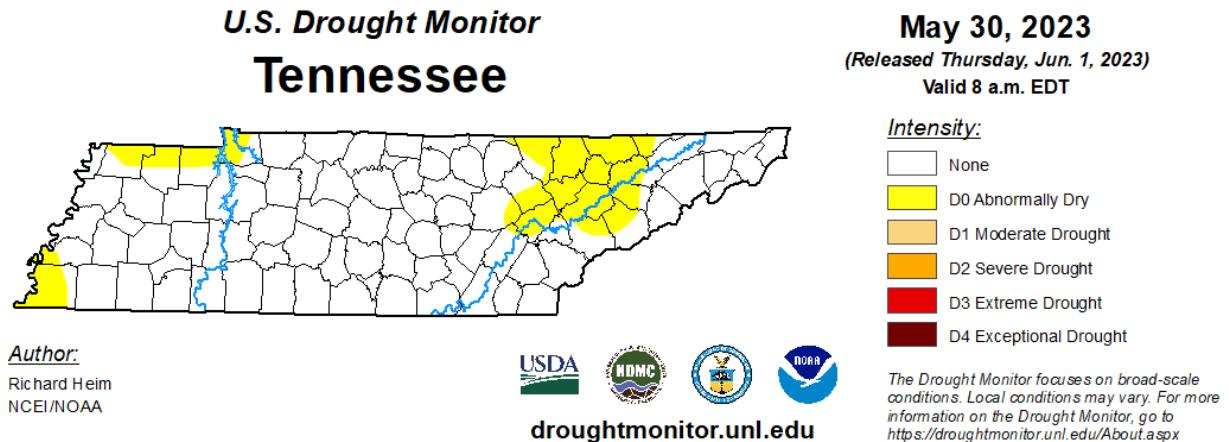






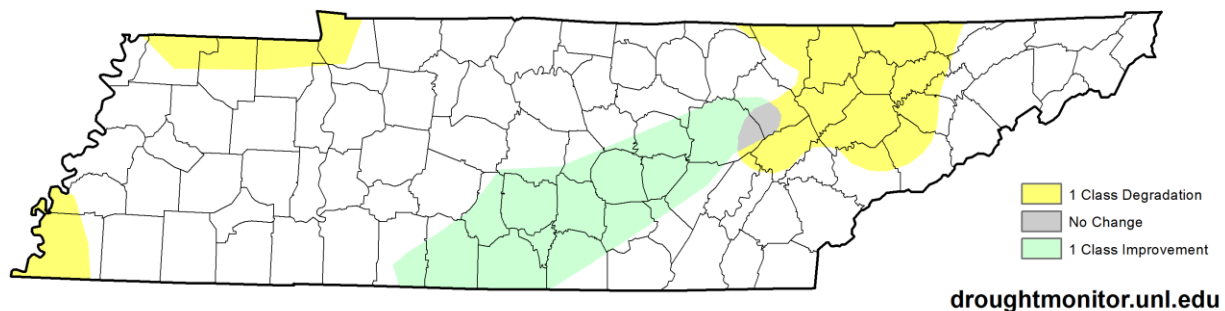
Drought Monitor:

Abnormally Dry (D0) conditions were added to parts of Middle Tennessee and the Cumberland Plateau on the May 2 edition of the US Drought Monitor. There were some fluctuations each week the rest of the month, and May ended with areas of D0 in East Tennessee, the northern Cumberland Plateau, and West Tennessee, with a total of 15.2% of the state covered in D0 conditions.



May 30, 2023
compared to
May 2, 2023

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



Soil Moisture:

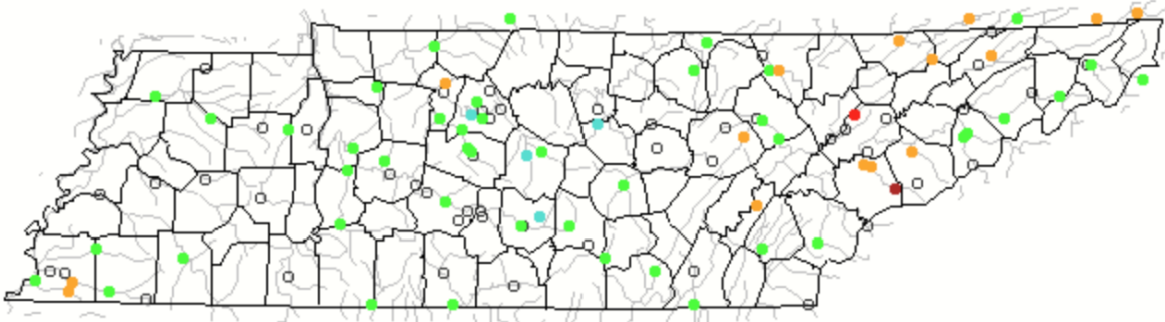
At the end of the month the USDA reported topsoil moisture was 1% very short, 10% short, 85% adequate, and 4% surplus. Subsoil moisture was 1% very short, 9% short, 86% adequate, and 4% surplus.

Streamflow:

There was below normal streamflow for the month of May on several streams in East Tennessee and on the northern Cumberland Plateau, as well as a few streams in Shelby County in West Tennessee, and in Cheatham County in Middle Tennessee. Most of these streams with lower than normal streamflow coincide with the areas of Abnormally Dry conditions on the US Drought Monitor.

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

May 2023



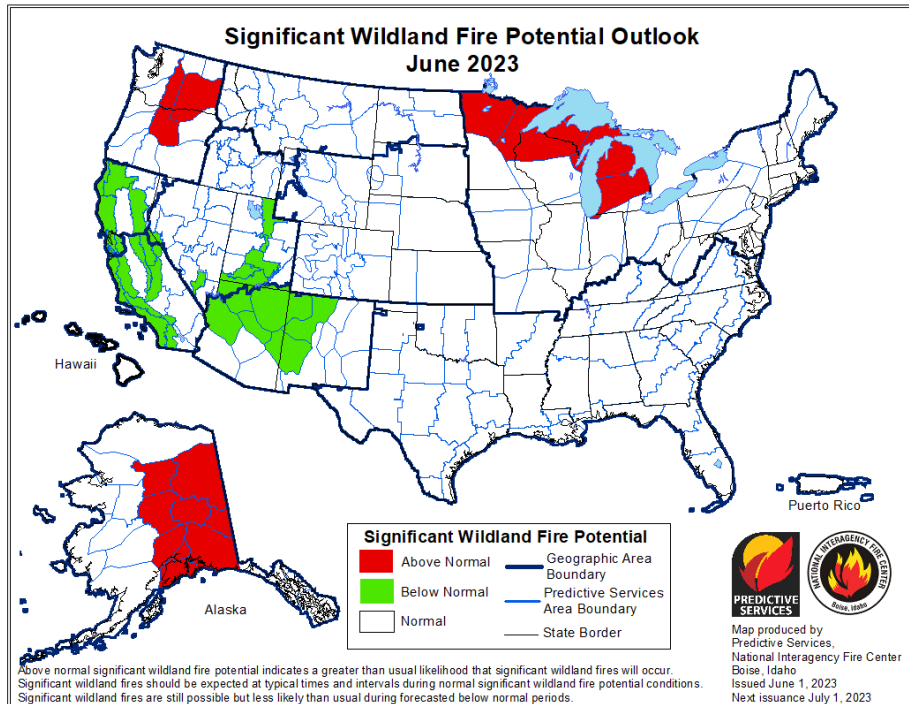
Explanation - Percentile classes							
●	●	●	●	●	●	●	●
Low	<10 Much below normal	10-24 Below normal	25-75 Normal	76-90 Above normal	>90 Much above normal	High	Not-ranked

Miscellaneous:

Crop Conditions from USDA: Weekly crop weather reports issued by the USDA noted that dry weather this month was good for planting row crops and cutting hay across the state; Corn, cotton, and soybean planting were all ahead of the 5-year average by the end of the month. Rains in Middle Tennessee helped to recharge soil moisture after a dry period earlier in the spring. Hay was cut, but hay yields and pasture grasses were not as high quality as normal due to variable weather patterns earlier this spring, however the majority were in good condition. And the winter wheat harvest began in the last week of May.

CROP PROGRESS					CONDITION					
					Item	Very Poor	Poor	Fair	Good	Excellent
Percent					Percent					
Corn – Planted	97	94	96	94	Pasture	1	5	24	59	11
Corn - Emerged	87	79	79	82	Winter Wheat	0	4	23	53	20
Cotton - Planted	85	62	84	79	Cotton	1	3	25	58	13
Cotton - Squaring	2	1	5	3	Cattle	1	3	18	63	15
Winter Wheat – Headed	98	97	98	N/A	Corn	1	2	19	58	20
Winter Wheat -Coloring	89	35	77	71	Hay	1	5	25	57	12
Winter Wheat - Mature	22	N/A	N/A	N/A						
Winter Wheat - Harvested	1	N/A	N/A	N/A						
For grain										
Soybeans – Planted	68	60	59	57						
Soybeans – Emerged	50	36	41	37						

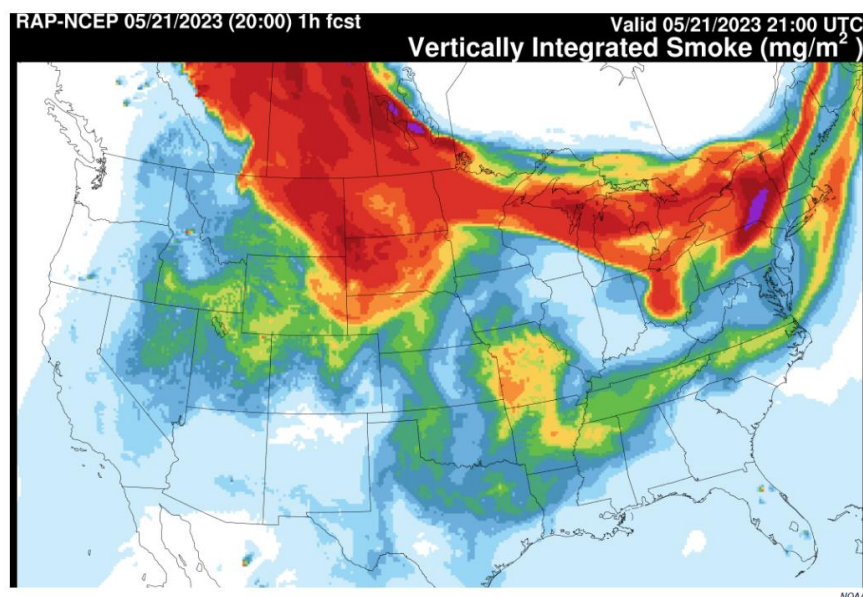
Fire Danger: The Interagency Fire Center's significant wildland fire potential outlook for June shows that all of Tennessee and the surrounding regions will have normal potential for wildland fires in June.



Snow: The Mt. LeConte COOP station in the Smoky Mountains reported snowfall of 0.1-inch on May 1.

Story of the Month:

May was relatively quiet with scattered severe storm reports, most of which occurred on May 16th. While June has seen noticeably poor air quality in parts of Tennessee from Canadian wildfires mostly in Quebec, poor air quality from wildfires in western Canada impacted Tennessee in mid-May. See image below from NOAA's High-Resolution Rapid Refresh Smoke model showing a plume of smoke from wildfires in Canada on May 21st.

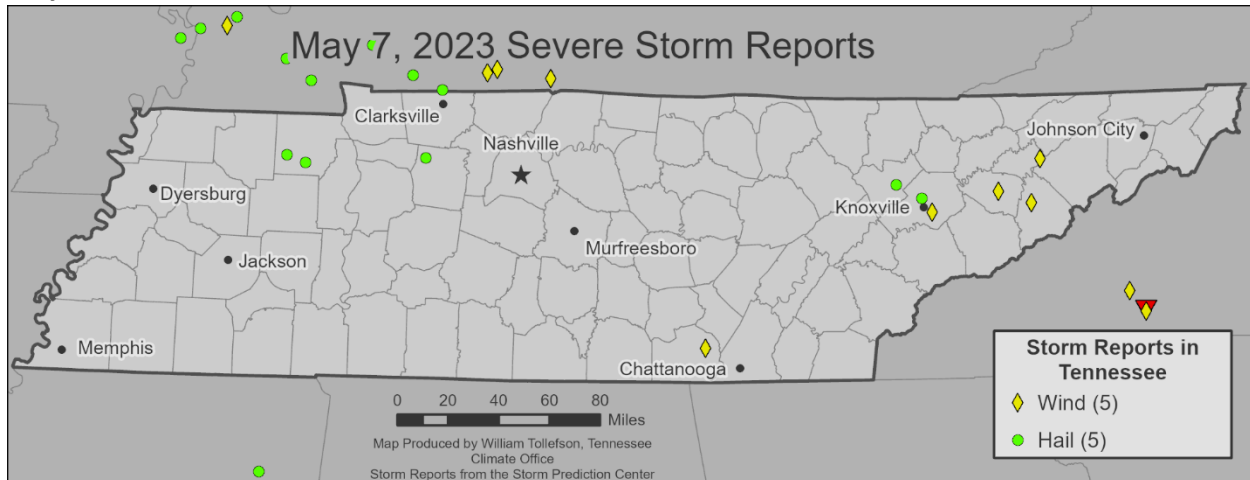


Storm Reports:

**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 7 days with severe storm reports during May 2023, with no reported tornadoes, 30 reports of severe wind damage, and 14 reports of severe hail (with a diameter of 1" or larger).

May 7:



Wind:

Time (UTC)	Speed (mph)	Location	County	Lat	Lon	Comments
20:26	--	3 SSE WHITESBURG	HAMBLEN	36.23	-83.12	OVER A DOZEN TREES DOWN IN EASTERN HAMBLEN COUNTY. TIME ESTIMATED BY RADAR. (MRX)
21:04	--	2 N DANDRIDGE	JEFFERSON	36.05	-83.42	NUMEROUS 24 INCH TREE LIMBS DOWN ALONG CHESTNUT GROVE CIR. (MRX)
21:06	--	2 NW LAKE FOREST	KNOX	35.94	-83.89	LARGE 75FT TALL (EST) TREE SNAPPED AND FELL IN BAKER CREEK PRESERVE PARK NEAR THE END OF JAMES WHITE PARKWAY. TREE APPEARED TO BE HEALTHY AND ALIVE. PEA SIZE HAIL. (MRX)
21:21	--	1 NNE NEWPORT	COCKE	35.98	-83.19	MANY TREES DOWN. (MRX)
1:54	--	POWELLS CROSSROADS	MARION	35.18	-85.49	TREE DOWN BLOCKING RICHARDS LANE. (MRX)

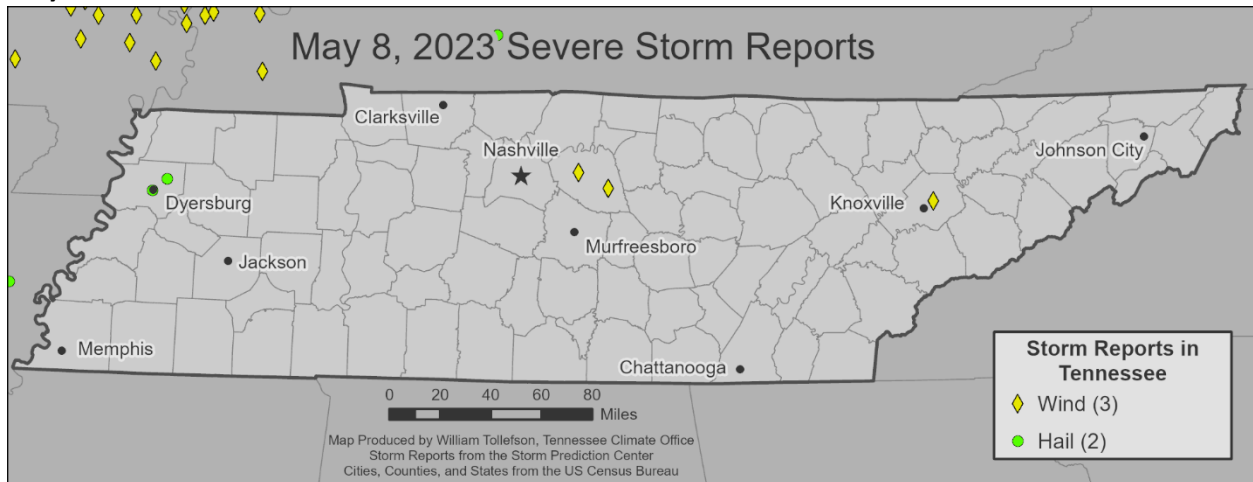
Hail:

Time (UTC)	Size (in)	Location	County	Lat	Lon	Comments
20:08	1.00	4 WNW ROUNTON	HENRY	36.26	-88.44	QUARTER SIZED HAIL REPORTED NEAR HERRONDALE. (MEG)
20:39	1.00	1 NNW CLINTON	ANDERSON	36.1	-84.14	(MRX)
20:54	1.00	3 NNW KNOXVILLE	KNOX	36.02	-83.96	(MRX)
21:35	1.00	4 ESE ROUNTON	HENRY	36.22	-88.31	QUARTER SIZED HAIL REPORTED IN WEST HENRY CO. (MEG)

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Time (UTC)	Size (in)	Location	County	Lat	Lon	Comments
22:21	1.00	2 NW VANLEER	DICKSON	36.26	-87.46	QUARTER SIZE HAIL FELL AT THE INTERSECTION OF HWY 49 AND SLAYTON-MARION RD. (OHX)

May 8:



Wind:

Time (UTC)	Speed (mph)	Location	County	Lat	Lon	Comments
7:14	--	4 WSW LEBANON	WILSON	36.19	-86.38	MULTIPLE REPORTS OF TREES AND POWER LINES DOWN AT KOA EAST NASHVILLE ON SAFARI CAMP ROAD. TIME ESTIMATED VIA RADAR. (OHX)
7:30	--	2 W WATERTOWN	WILSON	36.1	-86.17	SEVERAL TREES DOWN IN THE CHERRY VALLEY COMMUNITY. (OHX)
10:02	--	4 NE KNOXVILLE	KNOX	36.01	-83.88	TREE DOWN ON POWER LINES. (MRX)

Hail:

Time (UTC)	Size (in)	Location	County	Lat	Lon	Comments
16:58	1.00	1 WSW NEWBERN	DYER	36.11	-89.28	QUARTER SIZED HAIL. (MEG)
5:01	1.00	DYERSBURG	DYER	36.04	-89.38	QUARTER SIZED HAIL. (MEG)

May 2023 Tennessee State Climate Summary

May 10:



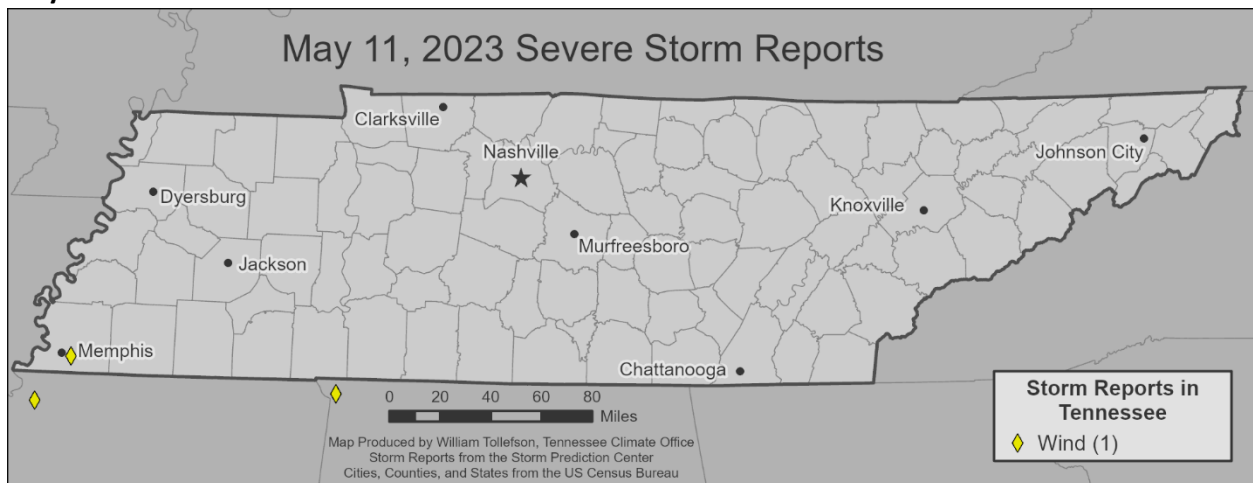
Wind:

Time (UTC)	Speed (mph)	Location	County	Lat	Lon	Comments
18:32	--	1 ENE BURLISON	TIPTON	35.56	-89.76	MULTIPLE TREES DOWN ON HIGHWAY 59 WEST IN BURLISON. TIME IS RADAR ESTIMATED. (MEG)

Hail:

Time (UTC)	Size (in)	Location	County	Lat	Lon	Comments
19:13	1.00	2 ENE OAKLAND	FAYETTE	35.24	-89.48	ONE INCH HAIL REPORTED IN OAKLAND. TIME IS RADAR ESTIMATED. (MEG)

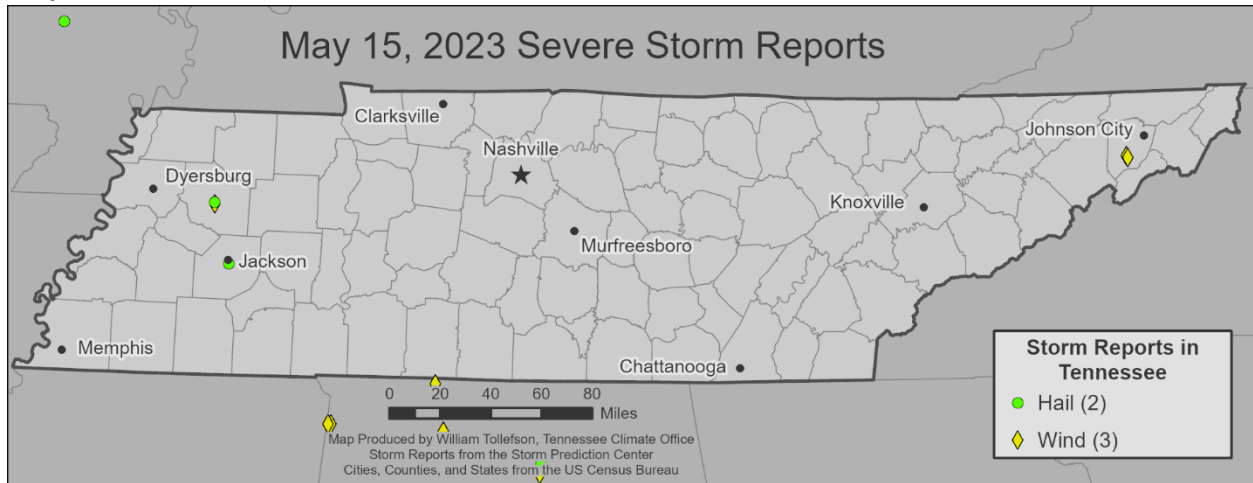
May 11



Wind:

Time (UTC)	Speed (mph)	Location	County	Lat	Lon	Comments
21:39	--	2 NW SOUTHEAST MEMPHIS	SHELBY	35.09	-89.91	LARGE TREE LIMB KNOCKED DOWN THE POWER LINE TO A HOUSE. (MEG)

May 15



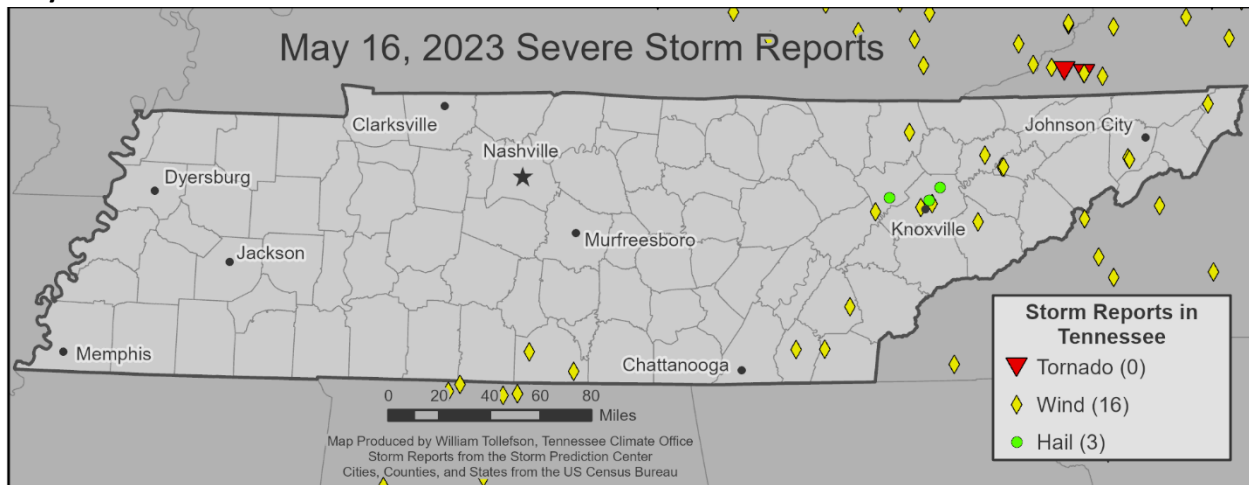
Wind:

Time (UTC)	Speed (mph)	Location	County	Lat	Lon	Comments
23:30	--	TRENTON	GIBSON	35.97	-88.94	SEVERAL TREES UPROOTED OR SNAPPED IN TRENTON. AT LEAST ONE HOME WAS DAMAGED BY A DOWNED TREE. (MEG)
11:25	--	4 NW EMBREEVILLE	WASHINGTON	36.23	-82.51	A FEW TREES DOWN. (MRX)
11:40	--	3 NW EMBREEVILLE	WASHINGTON	36.22	-82.5	A FEW TREES DOWN. (MRX)

Hail:

Time (UTC)	Size (in)	Location	County	Lat	Lon	Comments
23:37	1.00	TRENTON	GIBSON	35.98	-88.94	QUARTER SIZED HAIL REPORTED. (MEG)
23:48	1.00	JACKSON	MADISON	35.63	-88.83	QUARTER SIZED HAIL REPORTED IN JACKSON... TN. (MEG)

May 16



Wind:

Time (UTC)	Speed (mph)	Location	County	Lat	Lon	Comments
20:20	--	2 NNW ALPHA	HAMBLEN	36.2	-83.4	TREES AND LARGE TREE LIMBS DOWN IN AND NEAR SEVEN OAKS SUBDIVISION. (MRX)
21:00	--	2 WNW KNOXVILLE	KNOX	35.98	-83.98	3 TREES DOWN. ONE TREE ON TOP OF CAR. (MRX)
21:01	--	ENGLEWOOD	MCMINN	35.42	-84.49	ROOF DAMAGE TO BARN AND TREES DOWN. TIME ESTIMATED FROM RADAR. (MRX)
21:35	--	FINCASTLE	CAMPBELL	36.41	-84.05	TREES DOWN. (MRX)
21:45	--	SEVIERVILLE	SEVIER	35.89	-83.58	NUMEROUS TREES DOWN. (MRX)
22:15	--	RUTLEDGE	GRAINGER	36.27	-83.52	TREE DOWN IN RUTLEDGE. (MRX)
22:22	--	10 W FAYETTEVILLE	LINCOLN	35.17	-86.73	A TREE WAS REPORTED DOWN ON SWAN CREEK ROAD. (HUN)
22:35	--	OAK RIDGE	ANDERSON	35.96	-84.3	FEW TREES DOWN. (MRX)
22:35	--	SHADY VALLEY	JOHNSON	36.52	-81.93	MULTIPLE TREES DOWN. (MRX)
22:40	--	2 NNW ALPHA	HAMBLEN	36.2	-83.39	FEW TREES DOWN. (MRX)
22:50	--	CLEVELAND	BRADLEY	35.18	-84.87	FEW TREES AND POWER LINES DOWN. (MRX)
22:54	--	9 W HUNTLAND	LINCOLN	35.06	-86.42	BROADCAST MEDIA RELAYED VIEWER REPORT OF A TREE BLOWN DOWN. SPECIFIC LOCATION AND TIME OF EVENT WERE BASED ON RADAR DATA. (HUN)
23:03	--	1 W BENTON	POLK	35.18	-84.67	MULTIPLE TREES DOWN. (MRX)
23:25	--	3 NE KNOXVILLE	KNOX	36	-83.9	SEVERAL TREES DOWN. (MRX)
23:25	--	4 NW EMBREEVILLE	WASHINGTON	36.23	-82.51	CORRECTS PREVIOUS TSTM WND DMG REPORT FROM 4 NW EMBREEVILLE. A FEW TREES DOWN. (MRX)

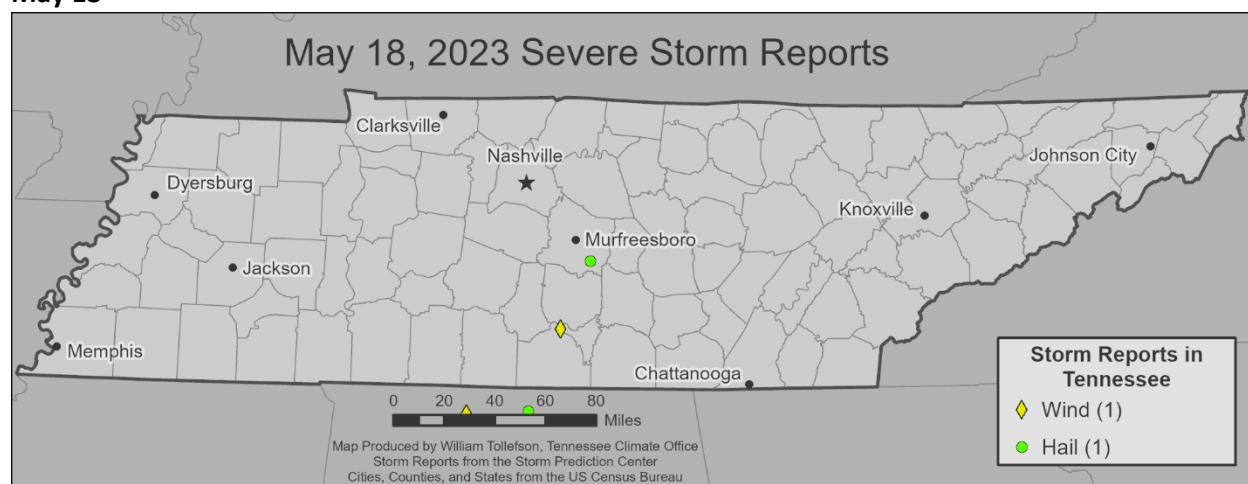
May 2023 Tennessee State Climate Summary

Time (UTC)	Speed (mph)	Location	County	Lat	Lon	Comments
23:40	--	3 NW EMBREEVILLE	WASHINGTON	36.22	-82.5	CORRECTS PREVIOUS TSTM WND DMG REPORT FROM 3 NW EMBREEVILLE. A FEW TREES DOWN. (MRX)

Hail:

Time (UTC)	Size (in)	Location	County	Lat	Lon	Comments
19:50	1.00	MALONEYVILLE	KNOX	36.09	-83.84	REPORT FROM MPING: QUARTER (1.00 IN.). (MRX)
20:25	1.00	5 SW CLINTON	ANDERSON	36.04	-84.2	(MRX)
21:30	1.00	3 NNE KNOXVILLE	KNOX	36.02	-83.92	(MRX)

May 18



Wind:

Time (UTC)	Speed (mph)	Location	County	Lat	Lon	Comments
21:44	--	6 E PETERSBURG	MOORE	35.33	-86.53	A TREE WAS REPORTED DOWN AT THE INTERSECTION OF HIGHWAY 231 AND PETERSBURG CHESTNUT RIDGE ROAD. (HUN)

Hail:

Time (UTC)	Size (in)	Location	County	Lat	Lon	Comments
22:58	1.00	9 WSW BRADYVILLE	RUTHERFORD	35.72	-86.32	TWITTER PHOTO SHOWED HAIL SLIGHTLY LARGER THAN QUARTER SIZE NEAR EPPS MILL ROAD AT I-24 IN CHRISTIANA. (OHX)

CPC Outlooks for the Next Month:

The NOAA Climate Prediction Center one-month outlook for June temperatures shows northwestern parts of Tennessee leaning towards a warmer than normal month, while the rest of the state has equal chances for normal, warmer than normal, or cooler than normal conditions. The entire state is also shown with equal chances for a normal, drier than normal, or wetter than normal month for June.

