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2021 April - Tennessee Monthly Climate Report

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April 2021 Tennessee State Climate Summary

Tennessee Climate Office * East Tennessee State University

Prepared by William Tollefson and Dr. Andrew Joyner

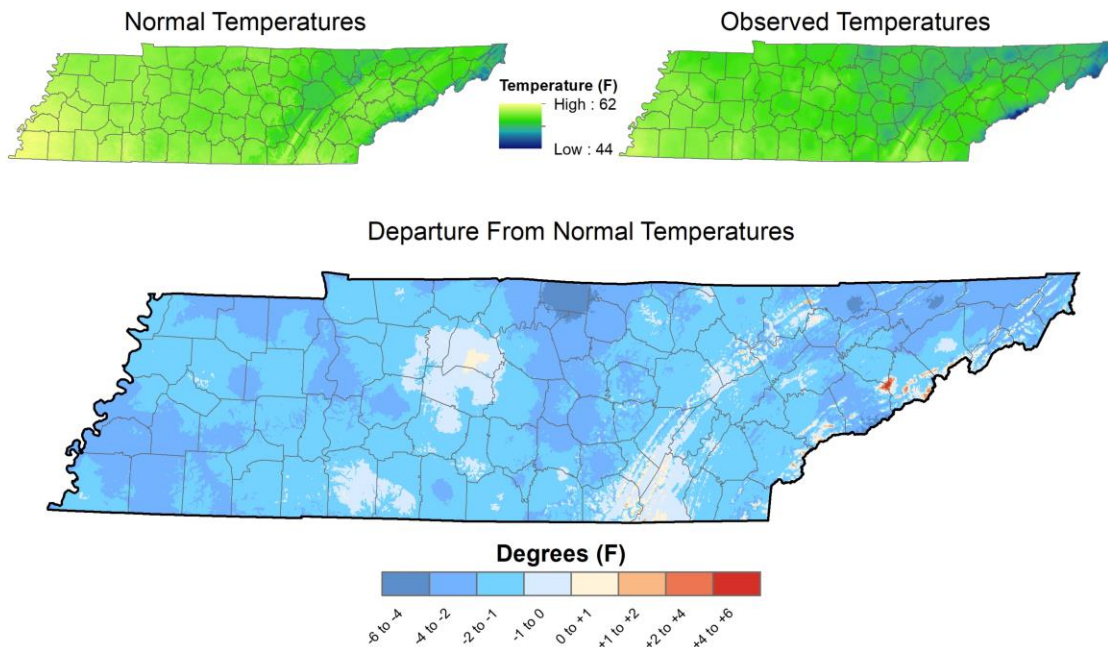
With contributions by [Climate Data Representatives](#) across the state

Monthly Temperature Summary:

Monthly mean temperatures were below the 1981-2010 climate normals across most of the state, with a few locations recording temperatures slightly above normal. The month started out cold, with freezing temperatures, and even a few snow showers reported on April 1. A widespread frost and freeze event occurred during the first week of the month, which negatively impacted agricultural and home-garden interests in the state. Temperatures quickly rebounded in the middle of the month, with most areas of the state reaching into the 80's for high temperatures. Then cooler than normal conditions returned for the latter half of the month with more frost and freeze events around the 15th and 21st. Many weather stations with long reporting histories set record low daily temperatures on April 22, with temperatures dropping into the 20's and 30's across the state. Then there was one more surge of warm weather in the last few days of the month. Temperatures across the state ranged from 4°F at Mt LeConte (Sevier County) on the 3rd to 89°F at Franklin (Williamson County) on the 10th.



April 2021 Mean Temperature



Stations with the highest mean temperature

Station Name	Station Type	Mean Temperature (F)
CHATTANOOGA AP	WBAN	61.1
MEMPHIS INTERNATIONAL AP	WBAN	61.0
SHILOH NMP TENNESSEE	RAWS	60.7
GERMANTOWN 4SE	COOP	59.9
BROWNSVILLE	COOP	59.4

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	37.4
NEWFOUND GAP	COOP	45.2
ROAN MOUNTAIN 3SW	COOP	48.5
TAZEWELL	COOP	50.1
PORTLAND SEWAGE PLANT	COOP	50.8

Monthly Precipitation Summary:

After the flooding rains at the end of March, April was much drier across the state. Many areas in East Tennessee recorded no precipitation during the first week of the month. Otherwise there was widespread light rainfall during each of the following weeks. However, most locations recorded less than one inch per week, leading to monthly rainfall totals that were below the 1981-2010 climate normals. Large portions of East Tennessee and some parts of Middle and West Tennessee recorded less than half their normal rainfall for the month. The drier than normal conditions were mostly positive, allowing excess water from the end of March to clear the state. Despite the dry conditions there were no new areas of drought or abnormally dry conditions introduced in Tennessee on the U.S. Drought Monitor. A few counties in West Tennessee did record above normal precipitation, mainly due to heavy rains in the first half of the month.

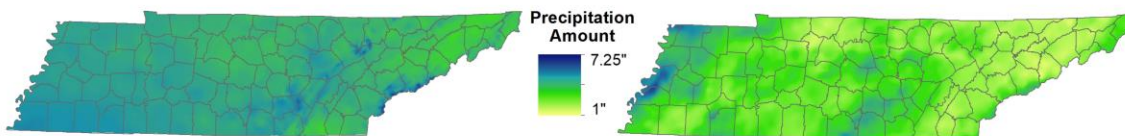


April 2021 Precipitation

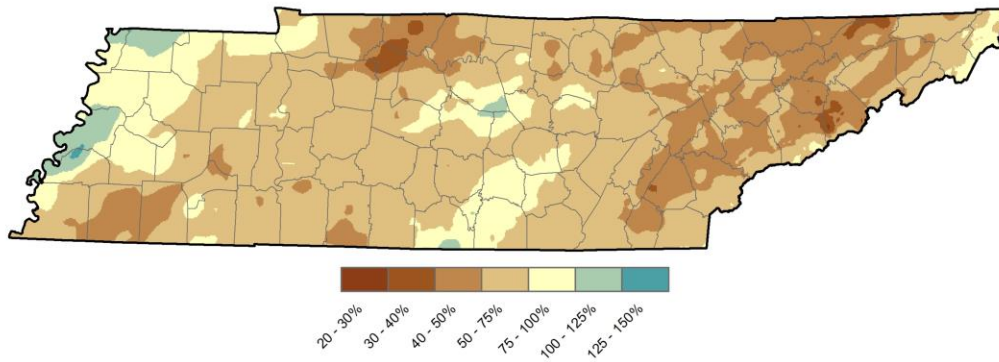


Normal Precipitation

Observed Precipitation



Percent Normal Precipitation



Stations with the most precipitation

Station Name	Station Type	Total Precipitation (in)
COALMONT	COOP	7.21
MT LECONTE	COOP	5.86
FAYETTEVILLE 8.6 S	CoCoRaHS	5.21
ALTAMONT 3.9 NW	CoCoRaHS	4.45
MCMINNVILLE 8.5 ESE	CoCoRaHS	4.43

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)
ERWIN 1 W	COOP	0.7
NASHVILLE 7.6 WSW	CoCoRaHS	0.97
BRISTOL AP	WBAN	1.08
GREEN HILL 3.1 NNE	CoCoRaHS	1.09
MARYVILLE 5.8 ESE	CoCoRaHS	1.13

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

Station data for airports across the state using WBAN weather stations (*Departures based on 1981-2010 climate normals*):

Station Name	Temperatures (°F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	%Norm
Memphis	71.3	50.6	61.0	-1.9	84	4/12	35	4/21	3.1	-2.4	56%
Jackson	70.3	45.6	58.0	-2	84	4/9	29	4/3	3.15	-1.71	65%
Clarksville	68.5	44.8	56.6	-1	84	4/9	27	4/2	2.64	-1.83	59%
Nashville	70.7	47.4	59.1	+0.1	84	4/27	30	4/2	2.35	-1.65	59%
Chattanooga	73.7	48.4	61.1	+0.6	86	4/28	31	4/3	1.62	-2.37	41%
Crossville	64.6	42.1	53.4	-2.4	78	4/27	24	4/2	1.87	-2.95	39%
Knoxville	69.7	45.9	57.8	-1	83	4/9	27	4/3	2.35	-1.66	59%
Bristol	68.8	40.3	54.6	-0.6	83	4/27	23	4/3	1.08	-2.25	32%

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	89	10
CELINA	COOP	87	27
TENNESSEE RIDGE	COOP	87	10
MOUSETAIL LANDING STATE PARK	COOP	87	28
AMES PLANTATION	COOP	86	10
JACKSON EXP STA	COOP	86	10
GAINESBORO	COOP	86	12
BIG SOUTH TENNESSEE	RAWS	86	27
CAMDEN TOWER TENNESSEE	RAWS	86	9
SHILOH NMP TENNESSEE	RAWS	86	9
CHATTANOOGA AP	WBAN	86	28
MEMPHIS WFO	WBAN	86	10

Eight stations tied for the 5th hottest temperature (86°F)

Coldest Stations (lowest minimum temperature)

Station Name	Station Type	Lowest Temperature (F)	Date
MT LECONTE	COOP	4	3
NEWFOUND GAP	COOP	12	2
ROAN MOUNTAIN 3SW	COOP	19	3
CHEROKEE TENNESSEE	RAWS	19	2
TAZEWELL	COOP	20	4
PICKETT STATE PARK	COOP	20	3
INDIAN GRAVE TENNESSEE	RAWS	20	2
GAINESBORO	COOP	21	5
CLARKSVILLE WWTP	COOP	21	21
ONEIDA	COOP	22	3
BETHPAGE 1 S	COOP	22	2
COALMONT	COOP	22	3
CROSSVILLE AREA OFFICE TENNESS	RAWS	22	3

Four stations tied for 10th coldest temperature (22°F).

Warmest Stations (highest mean temperatures)

Station Name	Station Type	Mean Temperature (F)
CHATTANOOGA AP	WBAN	61.1
MEMPHIS INTERNATIONAL AP	WBAN	61.0
SHILOH NMP TENNESSEE	RAWS	60.7
GERMANTOWN 4SE	COOP	59.9
BROWNSVILLE	COOP	59.4
LEWISBURG TOWER TENNESSEE	RAWS	59.4
CAMDEN TOWER TENNESSEE	RAWS	59.3
DYERSBURG III GOLF	WBAN	59.2
CLARKSVILLE WWTP	COOP	59.1
NASHVILLE INTL AP	WBAN	59.1

Cooltest Stations (lowest mean temperatures)

Station Name	Station Type	Mean Temperature (F)
MT LECONTE	COOP	37.4
NEWFOUND GAP	COOP	45.2
ROAN MOUNTAIN 3SW	COOP	48.5
TAZEWELL	COOP	50.1
PORTLAND SEWAGE PLANT	COOP	50.8
ERWIN 1 W	COOP	51.3
ONEIDA	COOP	51.3
PICKETT STATE PARK	COOP	51.6
CROSSVILLE 7 NW	WBAN	51.6
COALMONT	COOP	51.9

Wettest Stations (highest precipitation totals):

Station Name	Station Type	Total Precipitation (in)
COALMONT	COOP	7.21
MT LECONTE	COOP	5.86
FAYETTEVILLE 8.6 S	CoCoRaHS	5.21
ALTAMONT 3.9 NW	CoCoRaHS	4.45
MCMINNVILLE 8.5 ESE	CoCoRaHS	4.43
LYNCHBURG	COOP	4.38
DOVER 1 W	COOP	4.37
MANCHESTER 2.6 WNW	CoCoRaHS	4.36
WINCHESTER 3.9 W	CoCoRaHS	4.3
UT MARTIN BRANCH EXP STATION	COOP	4.23

Driest Stations (lowest precipitation totals):

Station Name	Station Type	Total Precipitation (in)
ERWIN 1 W	COOP	0.7
NASHVILLE 7.6 WSW	CoCoRaHS	0.97
BRISTOL AP	WBAN	1.08
GREEN HILL 3.1 NNE	CoCoRaHS	1.09
MARYVILLE 5.8 ESE	CoCoRaHS	1.13
NEWPORT 1 NW	COOP	1.14
MARYVILLE 4.9 S	CoCoRaHS	1.15
OAK GROVE 3.0 E	CoCoRaHS	1.21
KNOXVILLE AP	WBAN	1.23
NASHVILLE 4.1 SSW	CoCoRaHS	1.25

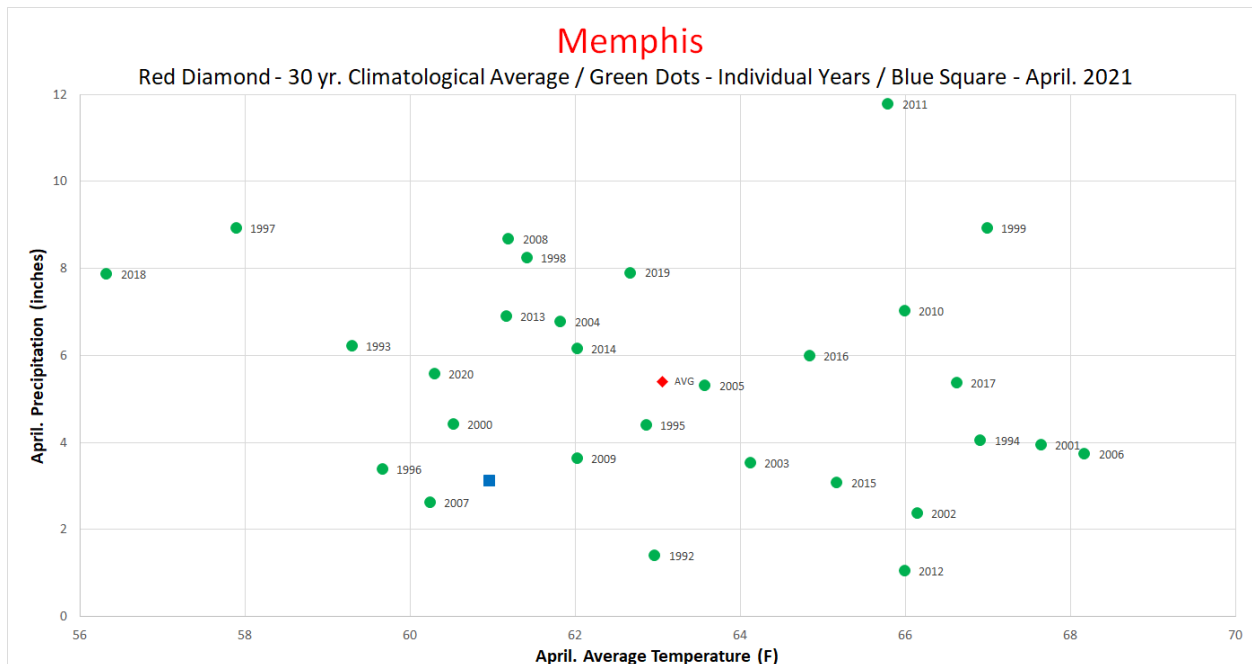
Snowiest Stations (highest snowfall accumulations):

Station Name	Station Type	Total Snowfall (in)
MT LECONTE	COOP	0.2

An additional 27 stations in parts of Middle and East Tennessee reported a trace of snow (less than 0.1") in April.

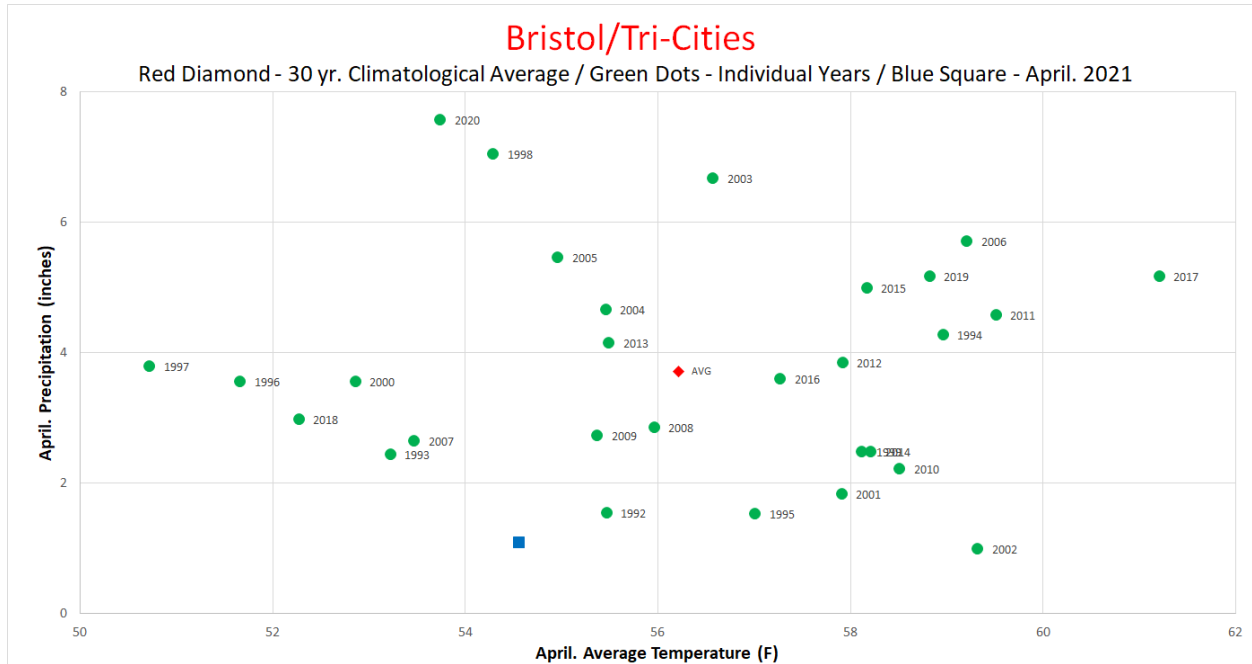
The Month in Comparison:

Comparing the mean temperature and total precipitation for April 2021 to the past thirty years of data for April at automated airport weather stations also shows the cool and dry trend for this year. Notably this was the driest April in the last thirty years in Knoxville, and second driest in the Tri-Cities. However, looking at the longer station histories for those two locations, this April did not rank in the top-10 driest Aprils. Also of note, the Nashville and Chattanooga airports recorded mean temperatures slightly above the 1981-2010 climate normal conditions; however, compared to the past thirty years of data this month was slightly below the average. The new 30-year climate normals (1991-2020) released by NOAA on May 4 also show this shift, which put April 2021 slightly below the new normal mean temperature for both cities.









Drought Monitor:

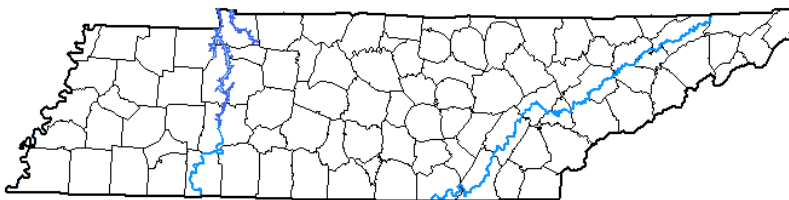
Despite the drier than normal conditions in April across the state, there were no areas of drought or Abnormally Dry (D0) conditions reported in Tennessee during the month.

Author:

Richard Heim
NCEI/NOAA

U.S. Drought Monitor Tennessee

April 27, 2021
(Released Thursday, Apr. 29, 2021)
Valid 8 a.m. EDT



Intensity:

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

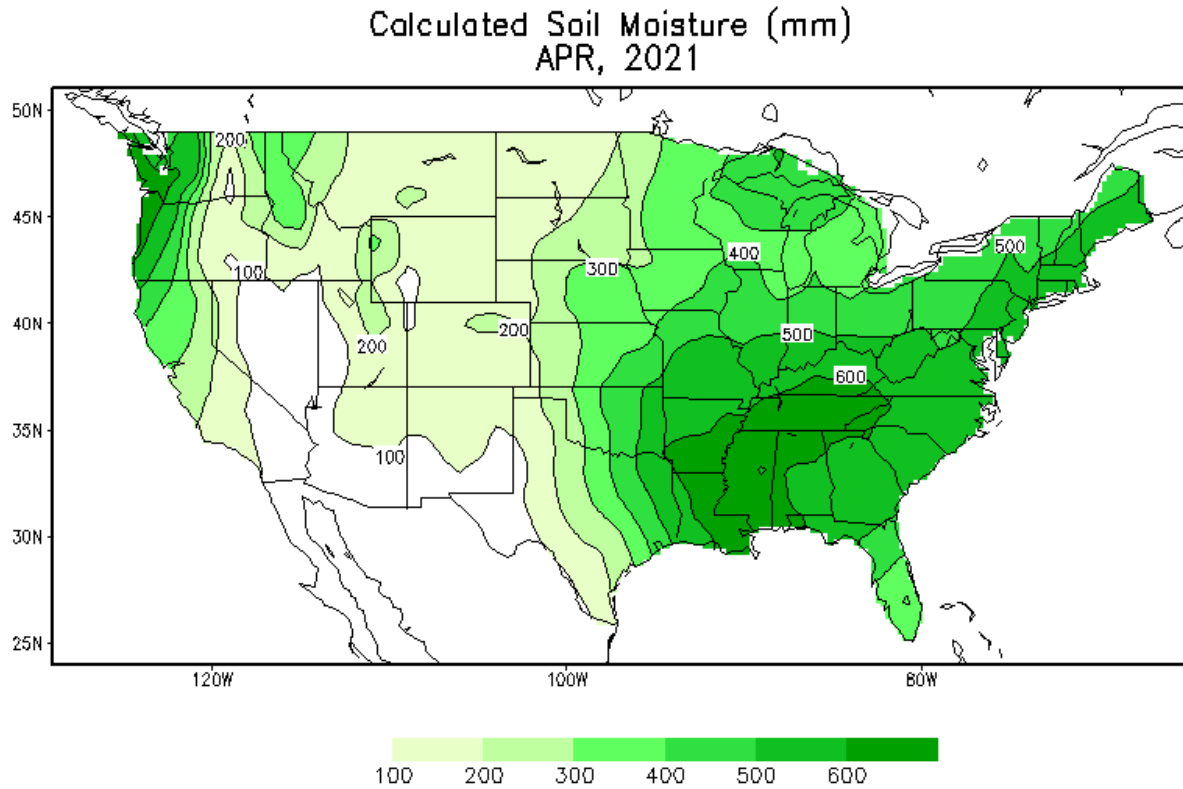
droughtmonitor.unl.edu



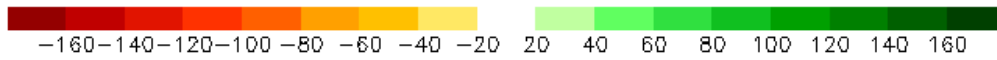
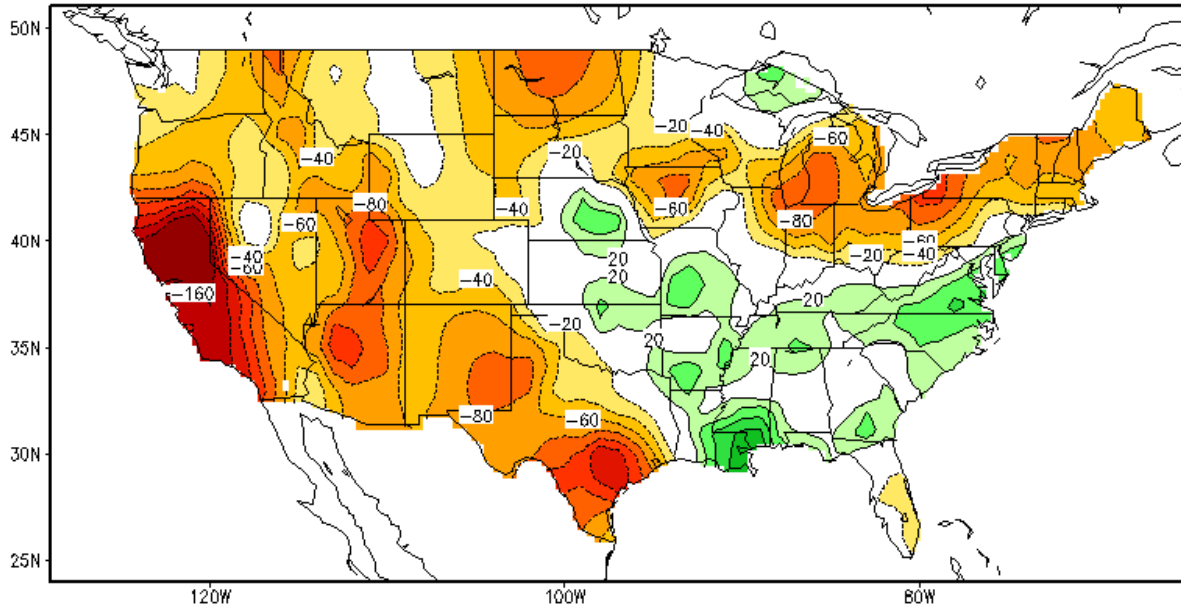
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <http://droughtmonitor.unl.edu/About.aspx>

Soil Moisture:

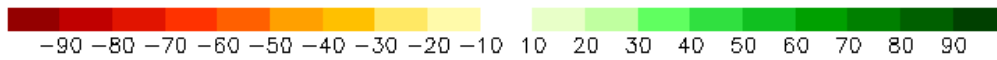
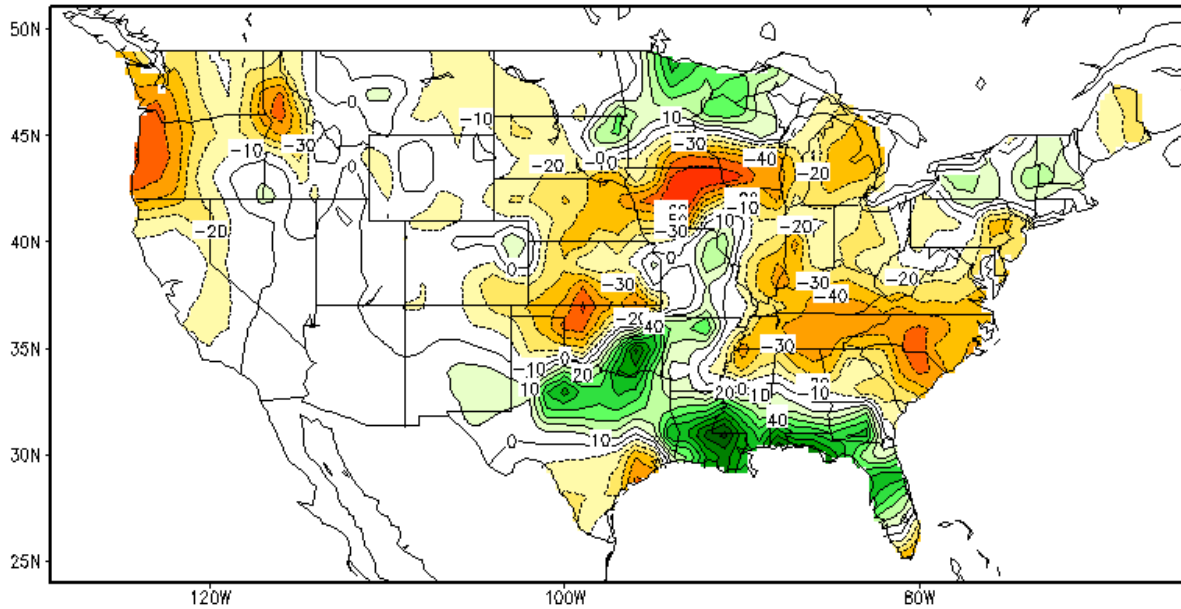
Calculated soil moisture exceeded 600mm across the state, which was normal or slightly above normal. Heavy rains at the end of March and below normal rain in April, produced a drying trend in soil moisture levels, with many areas in Middle and East Tennessee dropping by 40mm. The USDA weekly crop weather report issued for the week ending May 2, listed topsoil moisture as 6% short, 71% adequate, and 23% surplus, and subsoil moisture as 6% short, 74% adequate, and 20% surplus.



Calculated Soil Moisture Anomaly (mm) APR, 2021



Calculated Soil Moisture Anomaly Change APR 30, 2021 from MAR.31



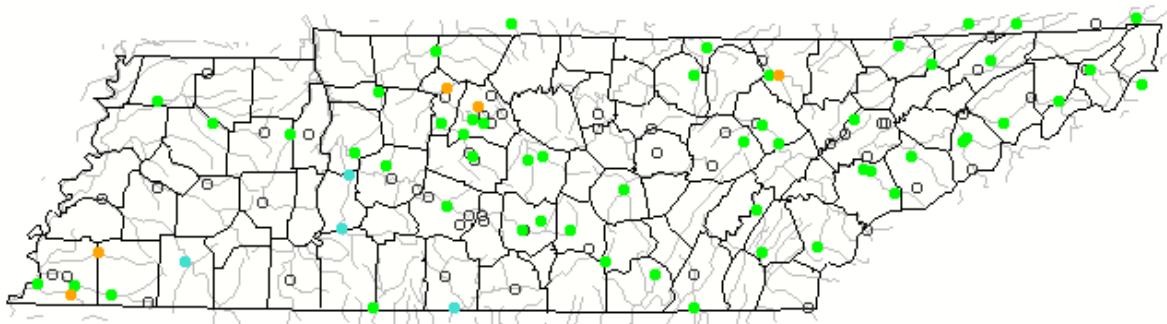
Streamflow:

A few stream gauges, mostly around Nashville and Memphis, reported below normal streamflows for the month of April. Most stream gauges across the state reported streamflow in the normal range for the month but a few, mostly in southern sections of Middle and West Tennessee, reported above normal streamflow for the month.

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

Tennessee ▼ or Water-Resources Regions ▼

April 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

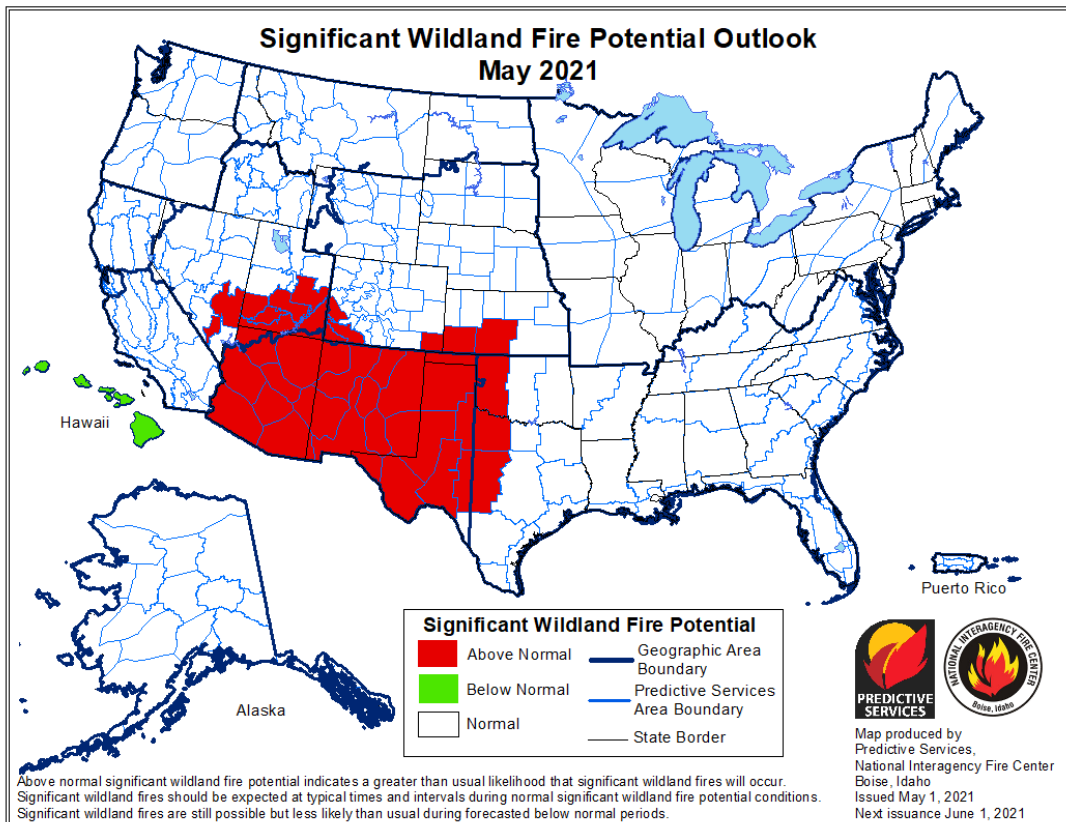
Explanation - Percentile classes							
Low	<10 Much below normal	10-24 Below normal	25-75 Normal	76-90 Above normal	>90 Much above normal	High	Not-ranked

Miscellaneous:

Crop Conditions from USDA: Flooding rains at the end of March led to a delay in planting in many areas of the state at the beginning of April. This was followed by a widespread freeze, which occurred during the first week of April. This freeze led to commercial crop and garden losses. Twenty-five percent of tomatoes, beans, and other commercial crops that had been set were lost due to the cold weather in East Tennessee. Additional frost/freeze events occurred in the middle of the month for portions of East Tennessee and the Cumberland Plateau. Due to the multiple frost/freeze events, fruit and vegetable yields are expected to be greatly diminished in that region. Corn and Soybean planting continued this month, and cotton planting started in West Tennessee by the end of the month. Winter wheat conditions were mostly good, with most of the crop jointed, but running a bit behind average for the headed stage.

CROP PROGRESS					CONDITION					
Crop	This Week	Last Week	2020	5 Year Avg.	Item	Very Poor	Poor	Fair	Good	Excellent
	Percent					Percent				
Apples – Full Bloom	87	82	91	90	Apples	0	4	41	49	6
Corn - Planted	65	48	51	61	Cattle	0	4	24	62	10
Corn – Emerged	35	18	24	32	Pasture	1	8	31	48	12
Cotton – Planted	2	1	4	7	Strawberries	1	7	28	55	9
Soybeans – Planted	15	8	13	9	Winter Wheat	0	3	21	60	16
Winter Wheat – Jointing	94	88	98	95						
Winter Wheat – Headed	59	33	78	69						

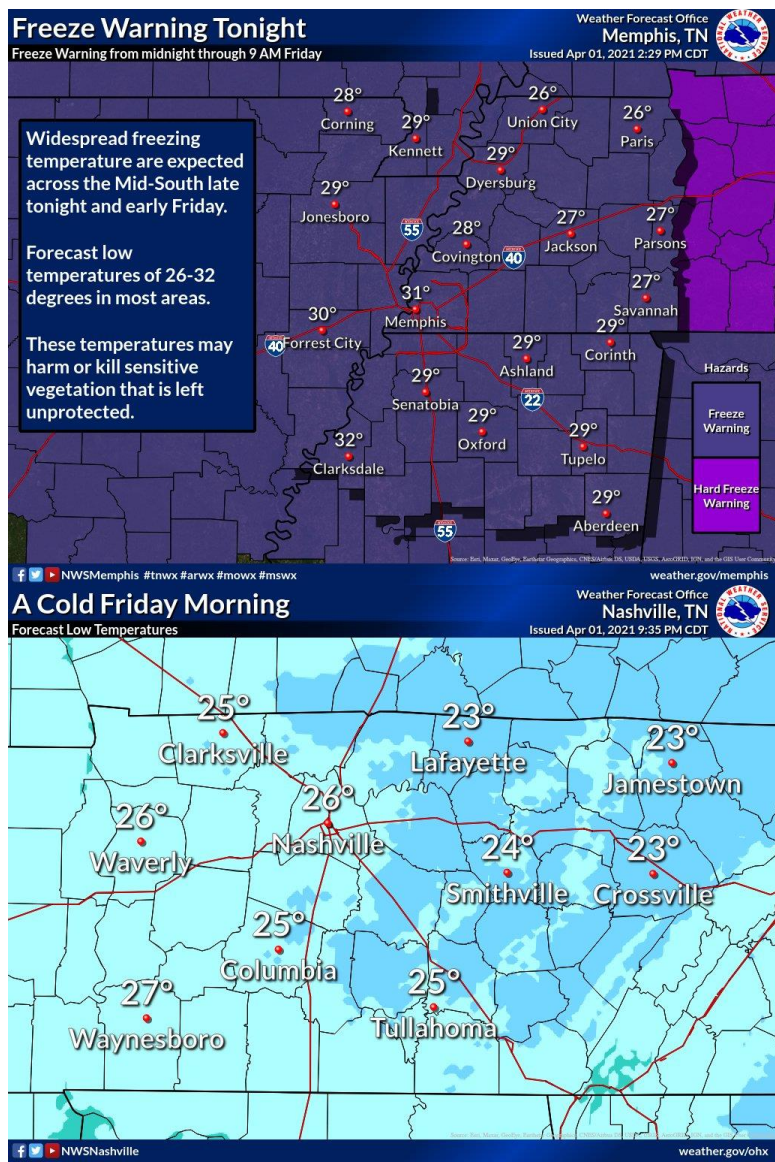
Fire Danger: The Interagency Fire Center outlook for May shows normal potential for significant wildland fires across Tennessee, as well as the entire eastern US.



Snow: The reports of snowfall on April 1 were not an April Fools joke. A strong cold front swept the state, bringing freezing temperatures and precipitation to Middle and East Tennessee. Mt LeConte in the Great Smoky Mountains National Park was the only weather station that reported measurable snowfall, but 27 other weather stations in Middle and East Tennessee reported a trace of snow (less than 0.1”), including the Nashville and Tri-Cities airports. Some locations in the higher elevations in the Plateau and East TN mountains also reported some snowfall on April 21.

Story of the Month:

The major stories of April 2021 were the frost/freeze events during the month which negatively impacted agricultural producers and home gardeners across the state. The first and most widespread freeze event occurred in the first few days of the month, with two or three nights of freezing temperatures reported at many locations. While still within the average last freeze/frost date for most locations across the state, this event did damage some crops/gardens as many plants were already blooming or growing by this time. Morning lows on April 2 tied a record low at the Tri-Cities airport, was the 3rd coldest daily low at Nashville and Knoxville, and tied for 5th coldest at Memphis.



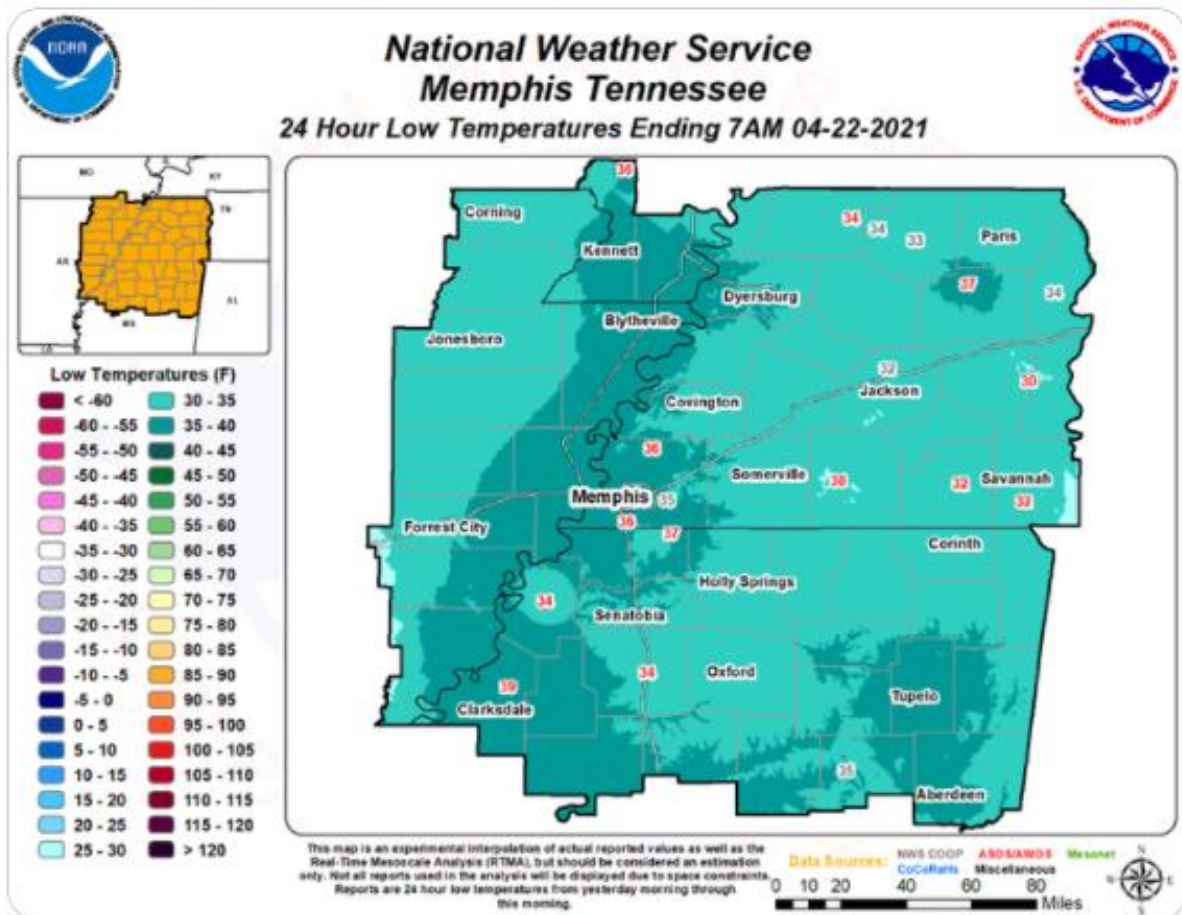
Later in the month another cold front brought frost and freeze conditions again April 15-16, which was right on time for the average last freeze for many locations in Middle Tennessee and lower elevations of East Tennessee. This was followed by another stronger cold spell on April 20-23 with temperatures dipping into the 20's and 30's across the state. On April 21, Memphis set a record daily low temperature (35°F), then on April 22 Memphis (37°F), Jackson (31°F), Chattanooga (33°F), Knoxville (30°F), and the Tri-Cities (25°F) all set record daily low temperatures.



NWS Memphis ✓
@NWSMemphis



It was another chilly morning 🌨️ across the Mid-South with several locations dropping to 32 degrees or below. Did anyone see any frost out there? 🌿 #tnwx #mswx #arwx #mowx #midsouthwx





NWS Morristown ✓
@NWSMorristown

...

Widespread freeze & frost is expected tonight, so a Freeze Warning is in effect for most of the area with a Frost Advisory in the southern valley where temps will be slightly milder. This will occur after a very chilly day today with high temps only in the 50's! #TNwx #VAwx #ncwx

Freeze Warning and Frost Advisory Tonight

Widespread temps in the low 30's are expected

TIMING

Freezing temperatures of 32 or colder are expected tonight across much of the region except for the southern valley where temperatures will drop into the middle 30s leading to frost.

IMPACTS

Freeze and/or Frosty conditions are expected. Sensitive outdoor plants may be damaged or killed if left unprotected.

REMEMBER

Those with agricultural interests are advised to protect tender vegetation.

If possible, bring the vegetation indoors or cover plants with mulch or plastic.

Freeze and Frost Damage



Photo courtesy of Ian Kirk



Photo Courtesy of Uploadax.com

 **NATIONAL WEATHER SERVICE**
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

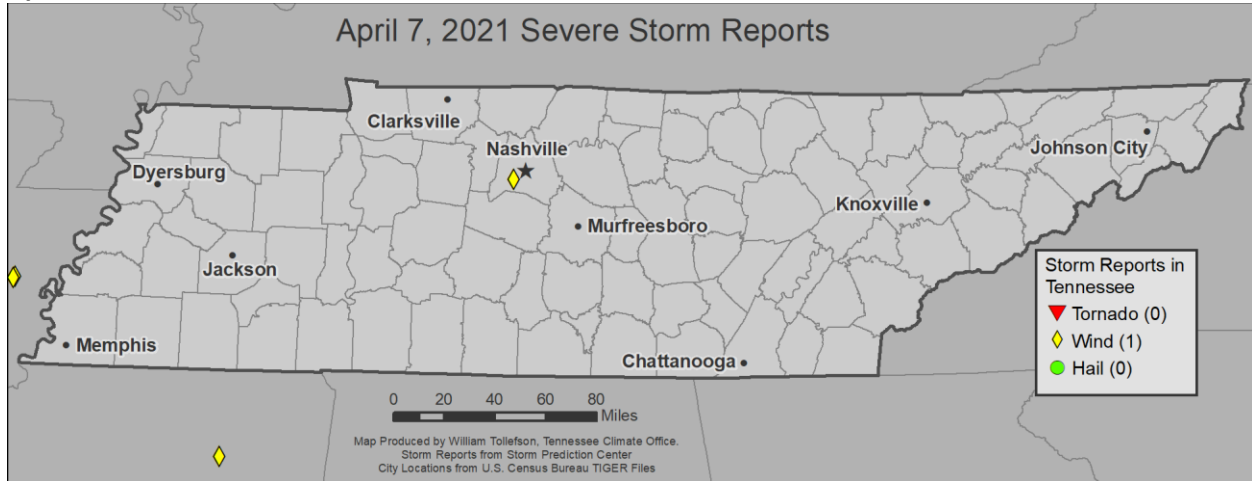
ISSUED: 4:00 AM - Wednesday, April 21, 2021

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 five days in April with severe weather reports, resulting in a total of 4 tornadoes, 8 reports of severe wind damage, and 10 reports of hail 1-inch or larger in diameter.

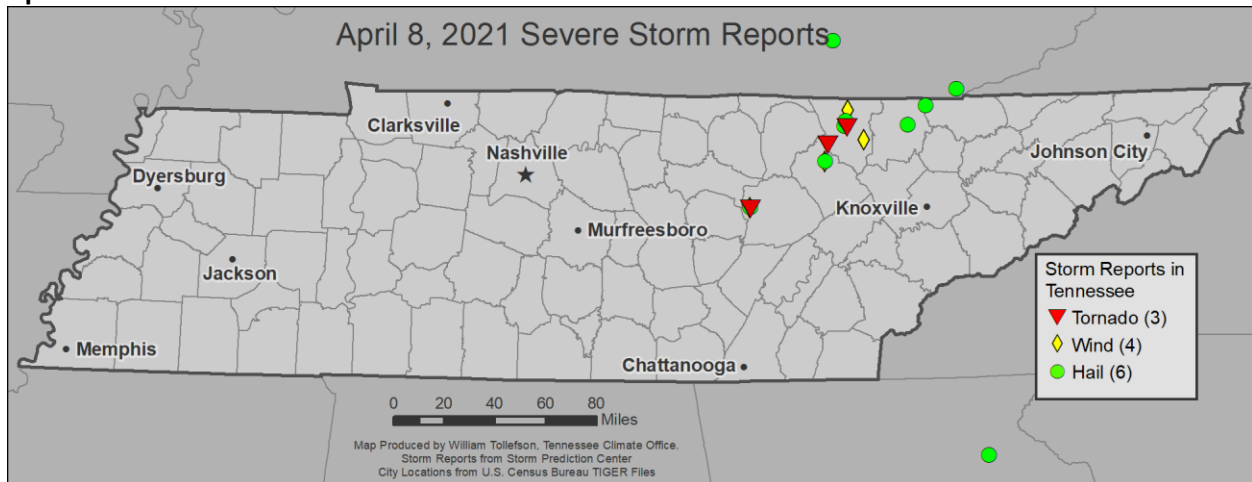
April 7



Wind:

Time (UTC)	Speed	Location	County	Lat	Lon	Comments
5:20	--	2 NW BELLE MEADE	DAVIDSON	36.12	-86.87	FENCE BLOWN OVER AND SCOREBOARD SNAPPED AT HILLWOOD HIGH SCHOOL (OHX)

April 8:



Tornadoes:

Time (UTC)	Strength	Location	County	Lat	Lon	Comments
20:15	EF0	PLEASANT HILL	CUMBERLAND	35.97	-85.2	THIS EF-0 TORNADO QUICKLY SPUN UP NEAR HWY 70 AND BROWNSTOWN RD THEN MOVED NE INTO PLEASANT HILL WHERE SEVERAL STRUCTURES SUFFERED ROOF AND SIDING DAMAGE ALONG WITH BRO (OHX)
21:30	--	2 W ELGIN	SCOTT	36.33	-84.65	911 CENTER REPORTED A BRIEF TORNADO TOUCHDOWN IN THE NYDECK AREA. NO REPORTS OF DAMAGE AT THIS TIME. (MRX)
22:20	EF2	2 N NORMA	SCOTT	36.43	-84.51	HOMES DESTROYED ON NORMA RD AND STRAIGHT FORK RD. (MRX)

Wind:

Time (UTC)	Speed (mph)	Location	County	Lat	Lon	Comments
20:11	--	PLEASANT HILL	CUMBERLAND	35.98	-85.2	MULTIPLE TREES DOWN. DAMAGE TO PLEASANT HILL HIGH SCHOOL AND ADJACENT NURSING HOME. POSSIBLE TORNADO. TIME ESTIMATED FROM RADAR. (OHX)
21:30	--	SUNBRIGHT	MORGAN	36.24	-84.67	TREES DOWN. POSSIBLE TORNADO. (MRX)
22:20	--	2 N NORMA	SCOTT	36.36	-84.39	DAMAGE TO STRUCTURES... TREES AND POWER LINES DOWN NEAR NORMA RD AND BAKER HWY. POSSIBLE TORNADO. (MRX)
22:53	--	2 NNE ONEIDA	SCOTT	36.53	-84.5	REPORT FROM MPING: 3-INCH TREE LIMBS BROKEN; POWER POLES BROKEN. (MRX)

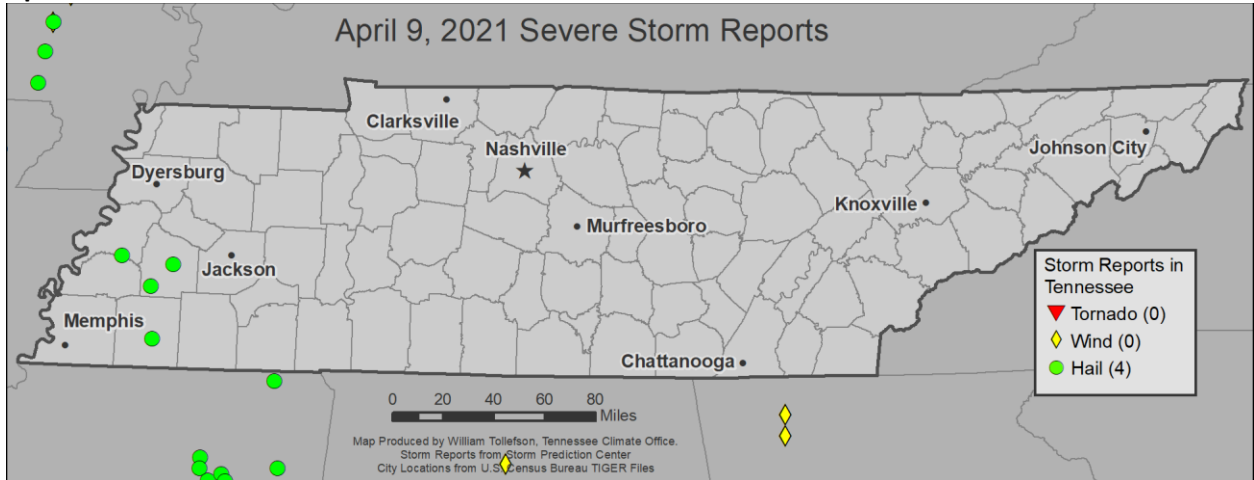
Hail:

Time (UTC)	Size (in)	Location	County	Lat	Lon	Comments
20:11	1.00	PLEASANT HILL	CUMBERLAND	35.98	-85.2	(OHX)
21:40	1.25	SUNBRIGHT	MORGAN	36.24	-84.67	QUARTER TO HALF DOLLAR SIZED HAIL REPORTED. (MRX)

April 2021 Tennessee State Climate Summary

Time (UTC)	Size (in)	Location	County	Lat	Lon	Comments
21:45	1.00	3 NW HUNTSVILLE	SCOTT	36.44	-84.53	(MRX)
22:00	1.00	2 S ONEIDA	SCOTT	36.47	-84.52	QUARTER SIZED HAIL ALONG HIGHWAY 27. (MRX)
23:15	1.75	1 SW DUFF	CAMPBELL	36.44	-84.08	(MRX)
23:35	1.50	CLAIRFIELD	CLAIBORNE	36.55	-83.95	(MRX)

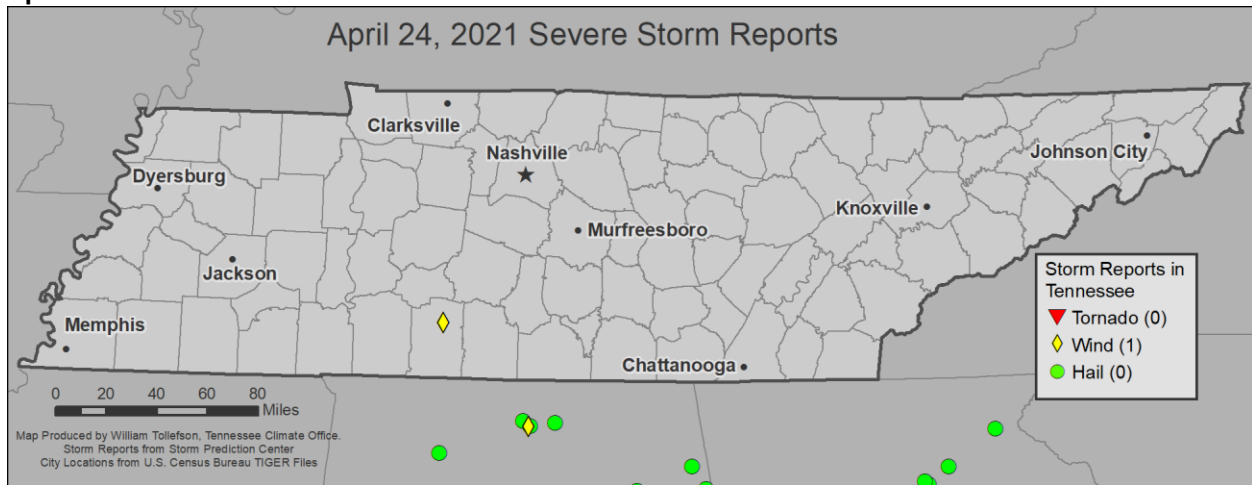
April 9:



Hail:

Time (UTC)	Size (in)	Location	County	Lat	Lon	Comments
22:30	1.00	4 SSW HENNING	TIPTON	35.63	-89.61	(MEG)
22:39	1.00	STANTON	HAYWOOD	35.46	-89.4	(MEG)
22:42	1.25	WILLISTON	FAYETTE	35.16	-89.38	(MEG)
23:01	1.00	BROWNSVILLE	HAYWOOD	35.59	-89.25	REPORT OF QUARTER SIZED HAIL IN DOWNTOWN BROWNSVILLE. (MEG)

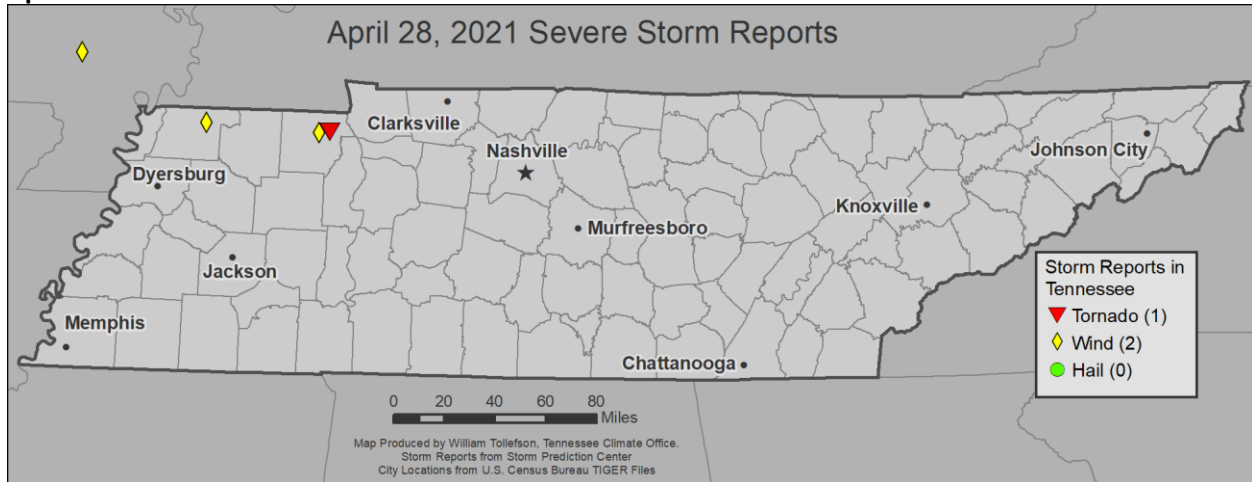
April 24:



Wind:

Time (UTC)	Speed (mph)	Location	County	Lat	Lon	Comments
21:15	--	3 W ETHRIDGE	LAWRENCE	35.32	-87.35	POWER LINES DOWN IN THE 3300 BLOCK OF BUFFALO ROAD (OHX)

April 28:



Tornado:

Time (UTC)	Strength	Location	County	Lat	Lon	Comments
0:05	--	4 SSE BUCHANAN	HENRY	36.38	-88.18	VIDEO EVIDENCE OF A TORNADO NEAR HIGHWAY 79 AND SULPHUR WELLS ACADEMY ROAD. (MEG)

Wind:

Time (UTC)	Speed	Location	County	Lat	Lon	Comments
22:20	--	UNION CITY	OBION	36.42	-89.05	BRANCHES GREATER THAN A FOOT IN DIAMETER TORN FROM TREES. (MEG)
0:00	--	5 SSW BUCHANAN	HENRY	36.38	-88.25	TREES DOWN AND ROOF DAMAGE TO ONE HOME ALONG SHADY GROVE ROAD. (MEG)

CPC Outlooks for the Next Month:

The NOAA Climate Prediction Center Outlooks for May indicate that all of Tennessee will likely observe above normal temperatures and precipitation for the next month, with a slightly higher confidence in the above normal precipitation pattern.

