

July 2024 Tennessee State Climate Summary

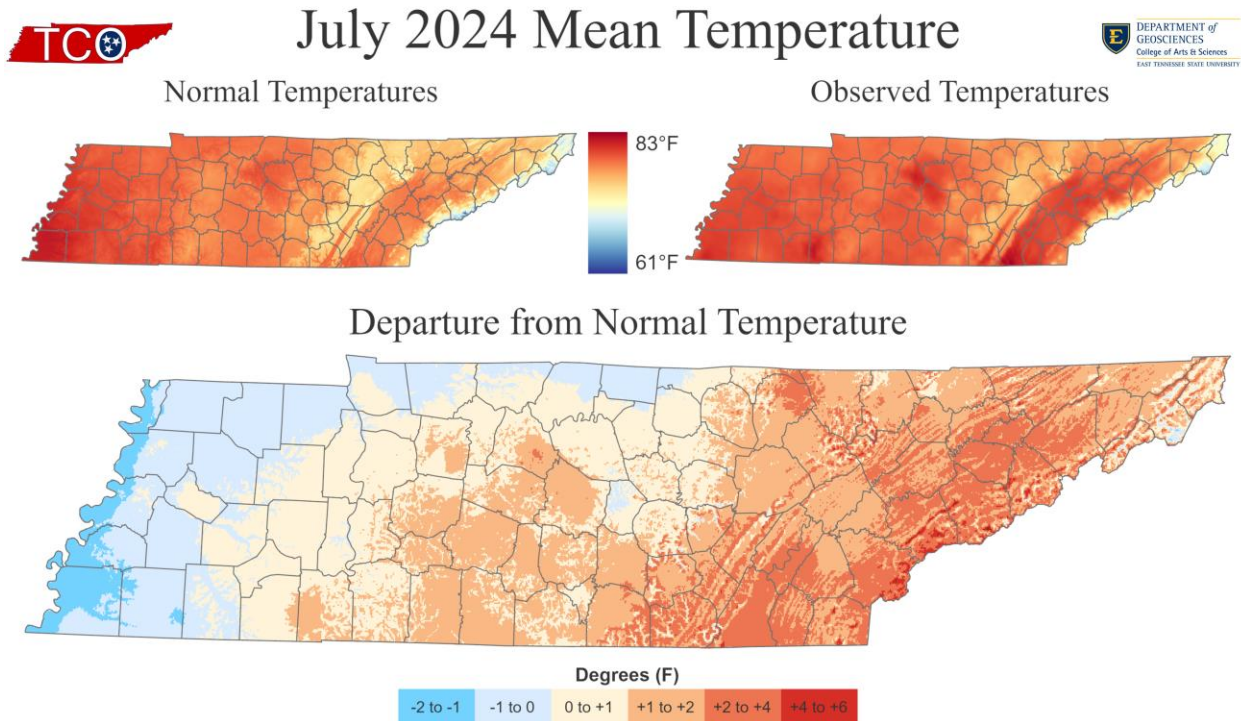
Tennessee Climate Office * East Tennessee State University

Prepared by William Tollefson and Dr. Andrew Joyner

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

Monthly Temperature Summary:

Over the month of July 2024 mean temperatures showed a trend of cooler than normal to warmer than normal moving from west to east across Tennessee. Right along the Mississippi River in West Tennessee, mean temperatures were 1-2°F cooler than normal, while in the rest of West Tennessee and northern portions of Middle Tennessee temperatures were within $\pm 1^\circ\text{F}$ of normal. Southern Middle Tennessee saw temperatures 1-2°F warmer than normal and most of East Tennessee saw temperatures of 2-4°F warmer than normal. Chattanooga, with a 146-year weather history, and Oak Ridge, with a 78-year weather history, both recorded their 7th warmest July on record based on mean temperatures, and Chattanooga recorded the 2nd warmest average low temperature on record for the month of July. Across the state, at weather stations with at least a 30-year history, there were 20 broken and 11 tied daily high temperature records this month, with an additional 43 broken and 44 tied daily records for warmest low temperatures. Of those record warm low temperatures, the Tazewell station tied its all-time record for warmest low temperature, with a low of 73°F on July 10, tying the record last set on June 30th of this year and August 1, 1999. On the cool side of the record books, there were 2 broken daily low temperature records set this month, and an additional 14 broken and 17 tied daily records for cool high temperatures.



Stations with the highest mean temperature

| Station Name | Station Type | Mean Temperature (F) |
|--------------------------|--------------|----------------------|
| CHATTANOOGA AP | WBAN | 83.2 |
| NASHVILLE INTL AP | WBAN | 82.2 |
| NASHVILLE BERRY FIELD | COOP | 81.8 |
| SHILOH NMP TENNESSEE | RAWS | 81.8 |
| MEMPHIS INTERNATIONAL AP | WBAN | 81.8 |

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 | 59.3 |
| NEWFOUND GAP | COOP | 67.4 |
| ROAN MOUNTAIN 3SW | COOP | 69.5 |
| CHEROKEE TENNESSEE | RAWS | 71.9 |
| MOUNTAIN CITY 2 | COOP | 73 |

Monthly Precipitation Summary:

Precipitation this month was very hit or miss, with large areas of the state recording much below normal rainfall for the first half of the month, and then flooding rains later in the month. Overall, most areas of the state averaged out to be within 25% of normal, but a few areas recorded over 200% of their normal rainfall for July while others recorded less than 40% of theirs. Coming on the heels of a drier than normal June, most areas of the state also recorded below normal precipitation in the first week of July. Middle and East Tennessee continued that dry pattern into the second week of the month, but most areas of West Tennessee recorded widespread rains from the remnants of Hurricane Beryl. In the third week of July spotty storms brought heavy rains mostly to the eastern half of the state, before more widespread storms brought heavy rains to most areas of the state in the fourth week of July, with some areas recording over 5" of rain. These heavy rains and accompanying severe storms continued in the final days of July. Dry conditions in the first half of the month combined with high and record-setting heat in the eastern half of the state resulted in extensive drought degradation. As rains returned to these parts of the state later in the month there were corresponding improvements in the U.S. Drought Monitor. For more detailed information on the evolving drought situation see the Drought Monitor section of this report. Overall, no long-term climate stations in the state had a top-10 wettest or driest July on record. However, 21 stations/rain gauges with at least a 30-year reporting history did record daily records for highest precipitation totals this month.

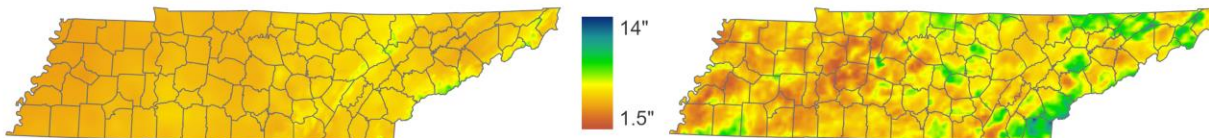


July 2024 Total Precipitation

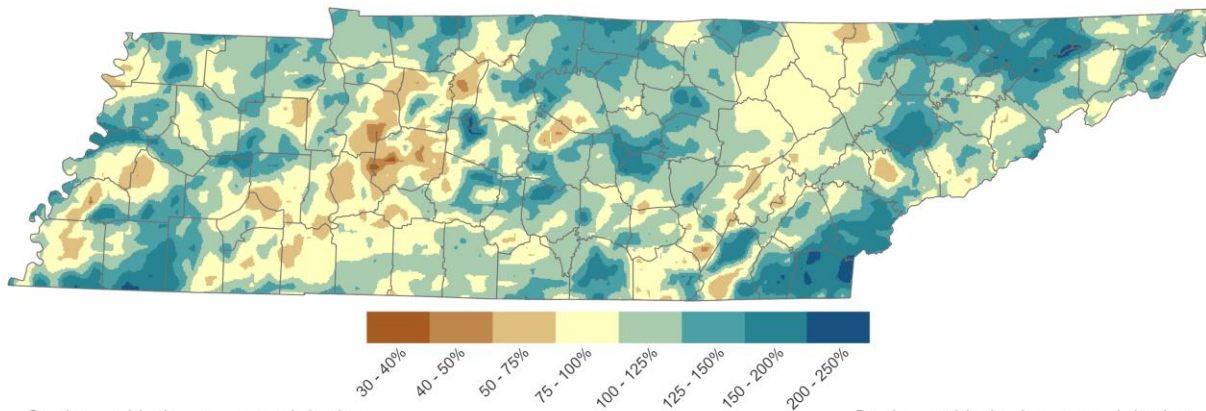


Normal Precipitation

Observed Precipitation



Percent of Normal Precipitation



Stations with the most precipitation

| Station Name | Station Type | Total Precipitation (in) |
|---------------------------|--------------|--------------------------|
| BENTON 2.3 ESE | CoCoRaHS | 14.2 |
| SHELBYVILLE MUNI. AIRPORT | COOP | 11.13 |
| OCOEE 3.3 ESE | CoCoRaHS | 10.55 |
| OOLTEWAH 3.0 SW | CoCoRaHS | 9.9 |
| CLEVELAND 5.2 SE | CoCoRaHS | 9.78 |

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) |
|----------------------------|--------------|--------------------------|
| OLD HICKORY DAM | COOP | 1.01 |
| DICKSON 9.1 WSW | CoCoRaHS | 1.2 |
| MONTGOMERY BELL STATE PARK | COOP | 1.55 |
| ALTAMONT 3.9 NW | CoCoRaHS | 1.58 |
| DICKSON 12.7 NW | CoCoRaHS | 1.73 |

Note: Data for the infographic below ends at 7am July 31, parts of Overton and Fentress counties recorded 3-4" of rain later in the day on July 31.

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 | 89.8 | 73.8 | 81.8 | -1.0 | 98 | 7/3 | 67 | 7/10 | 4.89 | 0.07 | 101% |
| Jackson | 89.8 | 71.6 | 80.7 | +1.2 | 98 | 7/3 | 62 | 7/2 | 4.60 | 0.23 | 105% |
| Clarksville | 89.0 | 69.7 | 79.3 | +1.1 | 96 | 7/4 | 61 | 7/19 | 3.38 | -0.36 | 90% |
| Nashville | 92.3 | 72.1 | 82.2 | +1.5 | 100 | 7/14 | 63 | 7/2 | 3.03 | -1.13 | 73% |
| Chattanooga | 93.0 | 73.4 | 83.2 | +2.5 | 101 | 7/13 | 66 | 7/11 | 3.68 | -1.40 | 72% |
| Crossville* | 85.9 | 65.8 | 75.8 | +2.0 | 95 | 7/14 | 58 | 7/11 | 2.33 | -3.13 | 43% |
| Knoxville | 90.2 | 70.4 | 80.3 | +1.8 | 98 | 7/14 | 64 | 7/11 | 5.00 | -0.25 | 95% |
| Bristol | 88.9 | 66.2 | 77.6 | +2.0 | 96 | 7/14 | 58 | 7/11 | 4.26 | -0.74 | 85% |

Departures and %Norm Key: **Warmer than Normal**, **Cooler than Normal**; **Wetter than Normal**, **Drier than Normal**

**Crossville Airport weather station was missing temperature and precipitation data from July 26-31*

Hottest Stations (highest maximum temperature)

| Station Name | Station Type | Highest Temperature (F) | Date |
|----------------------------|--------------|-------------------------|------|
| MERIWETHER LEWIS TENNESSEE | RAWS | 101 | 4 |
| CHATTANOOGA AP | WBAN | 101 | 13 |
| MURFREESBORO 5 N | COOP | 100 | 15 |
| LEBANON 7 N | COOP | 100 | 16 |
| NASHVILLE BERRY FIELD | COOP | 100 | 15 |
| GLADEVILLE | COOP | 100 | 5 |
| SHILOH NMP TENNESSEE | RAWS | 100 | 14 |
| LENOIR CITY TENNESSEE | RAWS | 100 | 14 |
| MEMPHIS WFO | WBAN | 100 | 4 |
| OAK RIDGE ASOS | WBAN | 100 | 14 |
| NASHVILLE INTL AP | WBAN | 100 | 14 |

Nine stations tied for the 2nd hottest temperature (100°F)

Coldest Stations (lowest minimum temperature)

| Station Name | Station Type | Lowest Temperature (F) | Date |
|------------------------|--------------|------------------------|------|
| MT LECONTE | COOP | 47 | 15 |
| MOUNTAIN CITY 2 | COOP | 54 | 2 |
| PICKETT STATE PARK | COOP | 55 | 19 |
| ROAN MOUNTAIN 3SW | COOP | 55 | 15 |
| NEWFOUND GAP | COOP | 55 | 12 |
| COALMONT | COOP | 56 | 11 |
| BLEDSON SF TENNESSEE | RAWS | 56 | 11 |
| CHEROKEE TENNESSEE | RAWS | 56 | 3 |
| CROSSVILLE AREA OFFICE | RAWS | 56 | 19 |
| CROSSVILLE 7 NW | WBAN | 56 | 11 |

Warmest Stations (highest mean temperatures)

| Station Name | Station Type | Mean Temperature (F) |
|----------------------------|--------------|----------------------|
| CHATTANOOGA AP | WBAN | 83.2 |
| NASHVILLE INTL AP | WBAN | 82.2 |
| NASHVILLE BERRY FIELD | COOP | 81.8 |
| SHILOH NMP TENNESSEE | RAWS | 81.8 |
| MEMPHIS INTERNATIONAL AP | WBAN | 81.8 |
| SAVANNAH 6 SW | COOP | 80.9 |
| FRANKLIN SEWAGE PLANT | COOP | 80.9 |
| OAK RIDGE ASOS | WBAN | 80.8 |
| JACKSON MCKELLAR- SIPES AP | WBAN | 80.7 |
| CLARKSVILLE WWTP | COOP | 80.6 |
| MEMPHIS WFO | WBAN | 80.6 |

Two stations tied for the 10th warmest mean temperature (80.6°F)

Coollest Stations (lowest mean temperatures)

| Station Name | Station Type | Mean Temperature (F) |
|--------------------|--------------|----------------------|
| MT LECONTE | COOP | 59.3 |
| NEWFOUND GAP | COOP | 67.4 |
| ROAN MOUNTAIN 3SW | COOP | 69.5 |
| CHEROKEE TENNESSEE | RAWS | 71.9 |
| MOUNTAIN CITY 2 | COOP | 73 |
| GATLINBURG 2 SW | COOP | 73.1 |
| TOWNSEND 5S | COOP | 73.3 |
| CROSSVILLE 7 NW | WBAN | 74.2 |
| NORRIS | COOP | 75 |
| BYRDSTOWN | COOP | 75 |

Wettest Stations (highest precipitation totals):

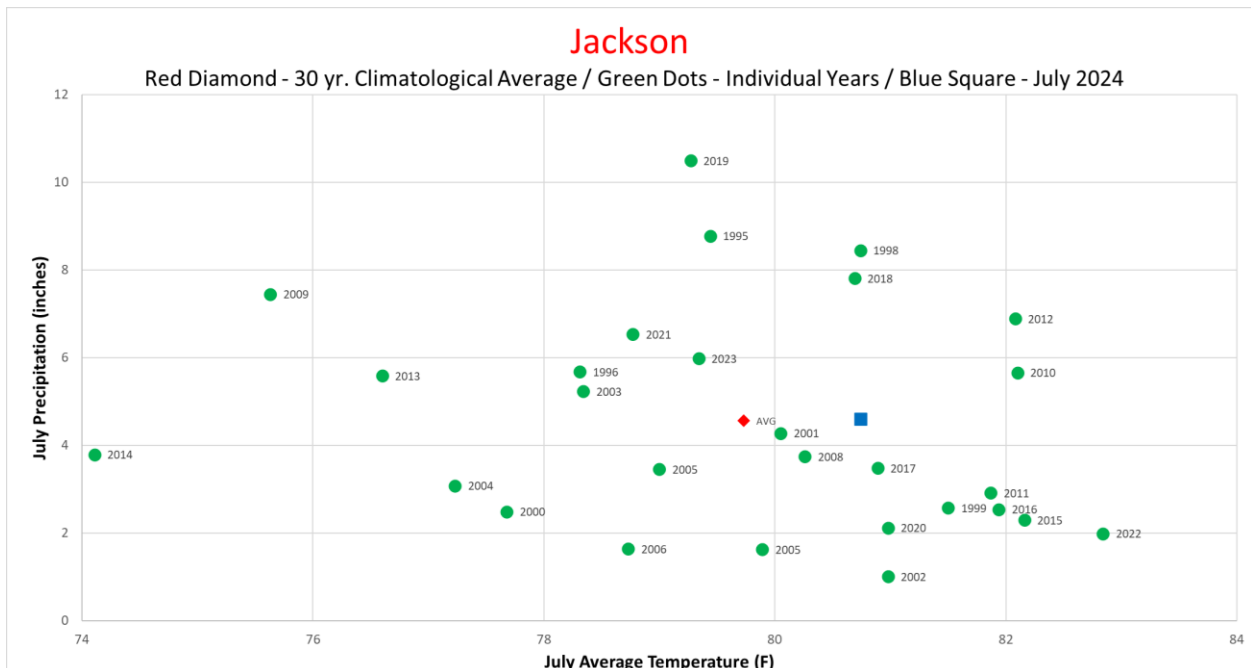
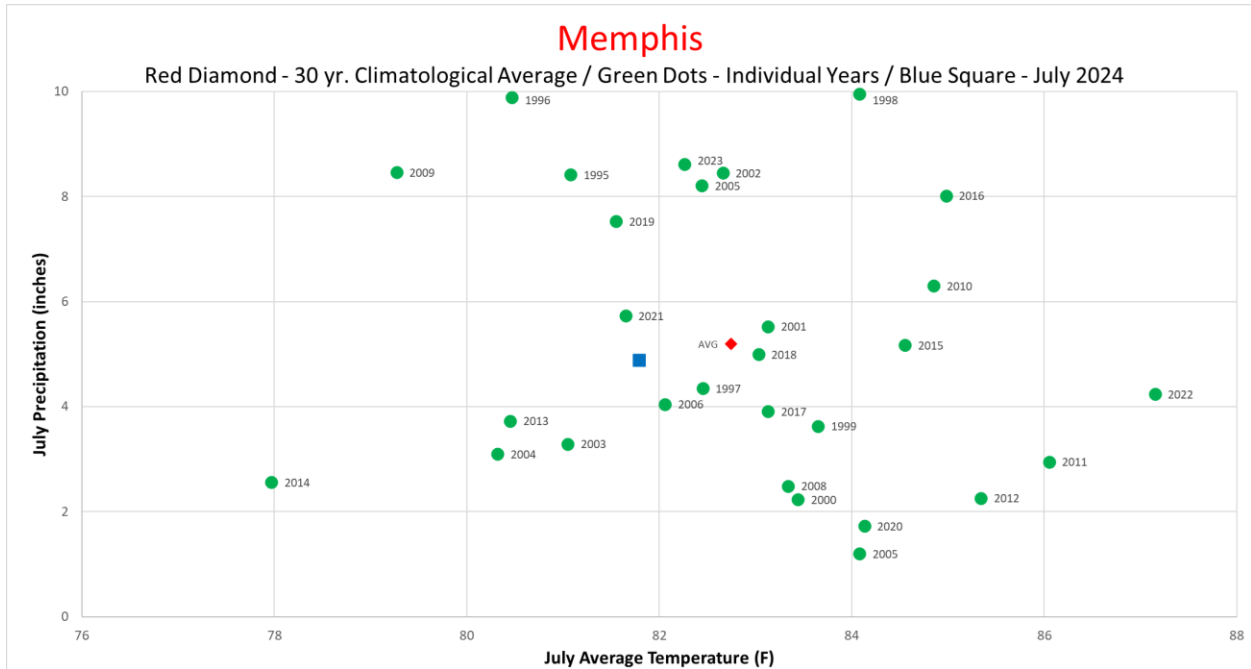
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|---------------------------|--------------|--------------------------|
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| SHELBYVILLE MUNI. AIRPORT | COOP | 11.13 |
| OCOEE 3.3 ESE | CoCoRaHS | 10.55 |
| OOLTEWAH 3.0 SW | CoCoRaHS | 9.9 |
| CLEVELAND 5.2 SE | CoCoRaHS | 9.78 |
| MT LECONTE | COOP | 9.53 |
| CLEVELAND 1.2 W | CoCoRaHS | 9.43 |
| PICKETT STATE PARK | COOP | 8.84 |
| CLEVELAND 3.0 ESE | CoCoRaHS | 8.78 |
| ATOKA 3.2 ESE | CoCoRaHS | 8.68 |

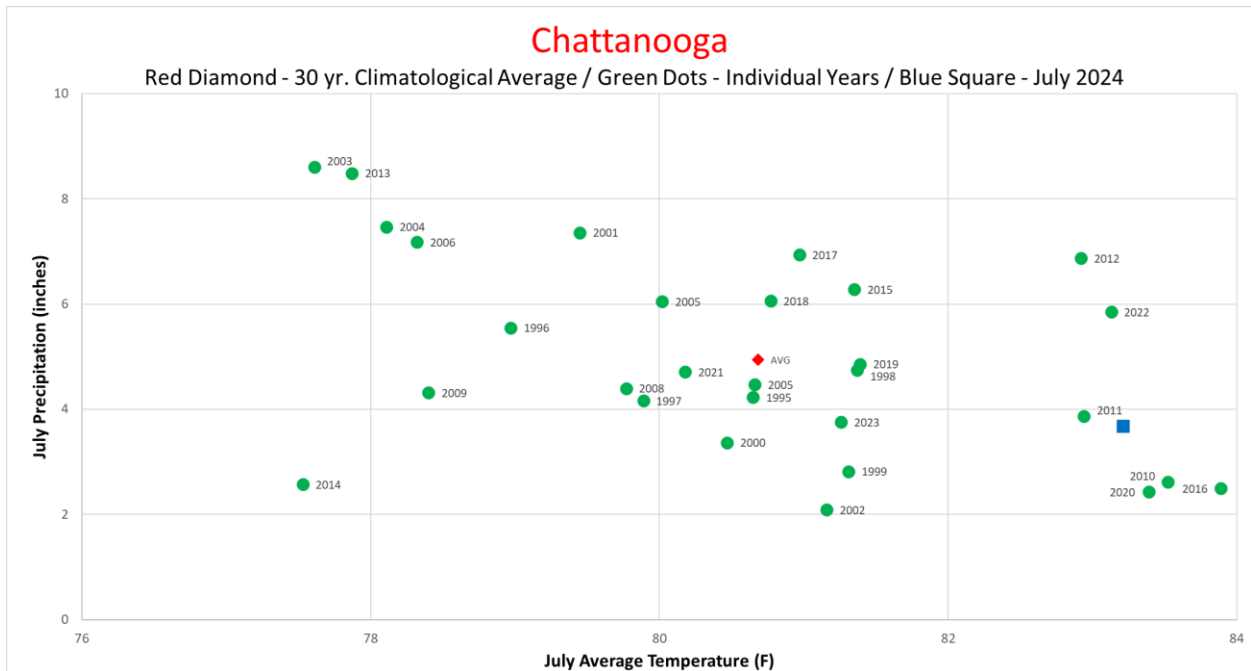
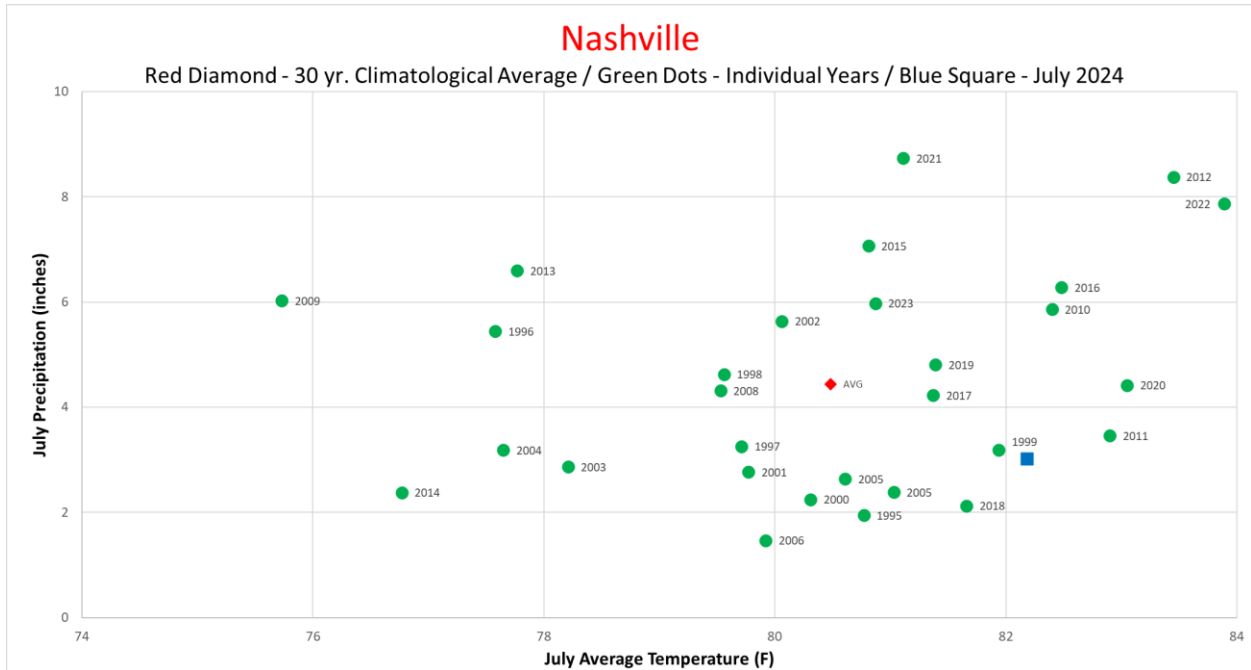
Driest Stations (lowest precipitation totals):

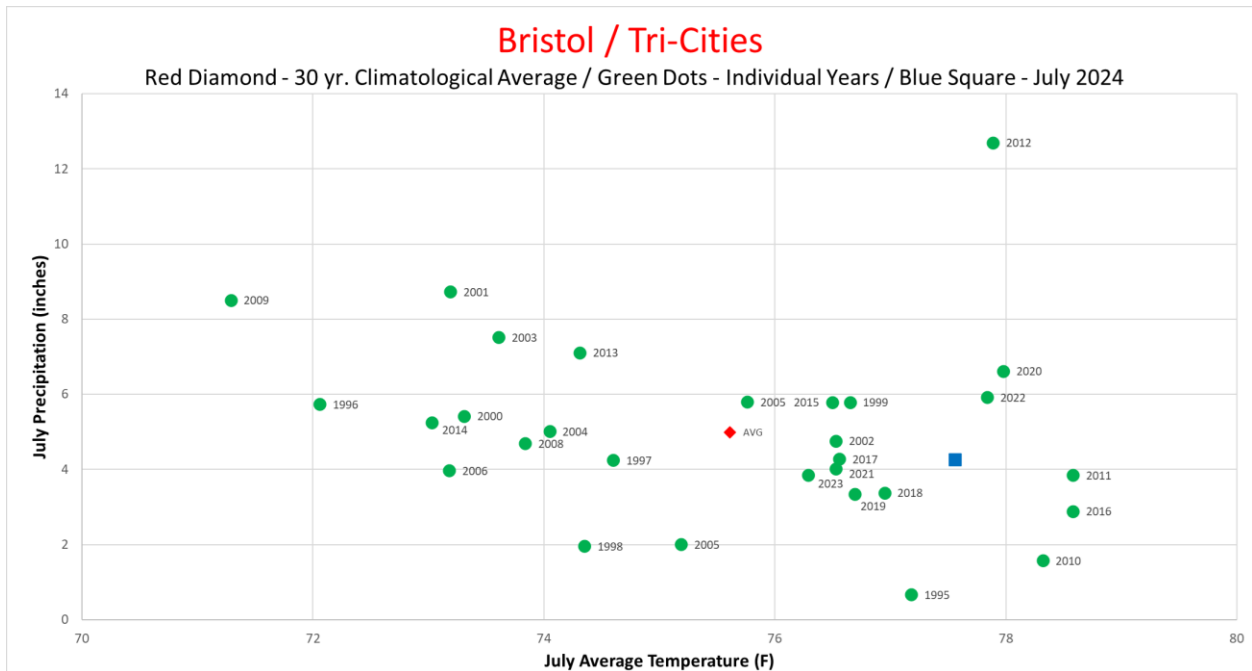
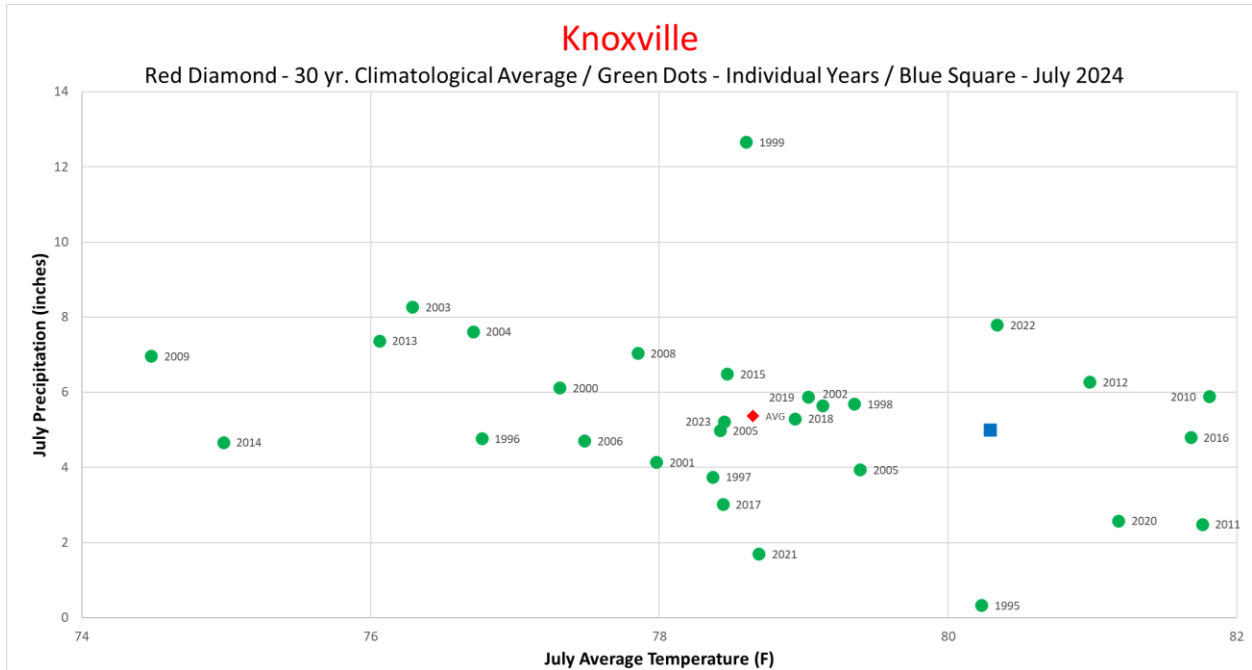
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|----------------------------|--------------|--------------------------|
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| DICKSON 9.1 WSW | CoCoRaHS | 1.2 |
| MONTGOMERY BELL STATE PARK | COOP | 1.55 |
| ALTAMONT 3.9 NW | CoCoRaHS | 1.58 |
| DICKSON 12.7 NW | CoCoRaHS | 1.73 |
| ROCK VALE 4.5S | CoCoRaHS | 1.74 |
| MONTEREY | COOP | 1.79 |
| BARTLETT 1.0 WNW | CoCoRaHS | 1.8 |
| GLADEVILLE | COOP | 1.8 |
| FRANKLIN 8.5 SSE | CoCoRaHS | 1.82 |

The Month in Comparison:

Comparing the mean temperature and total precipitation for July 2024 to conditions for July over the past 30 years, Memphis and Jackson recorded near normal precipitation and temperatures, with Memphis being the only climate monitoring station recording a below average temperature this July. Chattanooga was the only station with a top-5 warmest temperature this month compared to the past 30 years, but looking at the full station history, they had their 7th warmest July on record based on mean temperatures. None of these stations had a top-5 wettest or driest July this year.





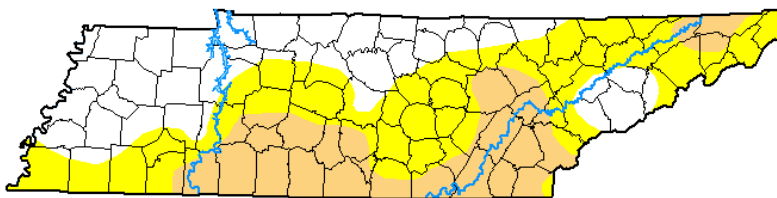


Drought Monitor:

Through the month of July, a rapidly evolving drought impacted Tennessee. At the start of the month, the July 2nd edition of the U.S. Drought Monitor showed that 28% of the state was impacted by Moderate Drought (D1) and an additional 23.48% of the state was impacted by Abnormally Dry (D0) conditions. Hot and dry conditions for Middle and East Tennessee in the first half of the month led to rapid drying, with agricultural impacts and low streamflow levels noted by mid-month. However, the remnants of Hurricane Beryl brought rains to West Tennessee in this time, which cleared some areas of Abnormally Dry conditions. Drought conditions peaked in the July 16th edition of the U.S. Drought Monitor with over 70% of the state in some level of drought or abnormally dry conditions. Some areas of southern Middle Tennessee were shown with Extreme Drought (D3), totaling 1.79% of the state’s area. Severe Drought (D2) covered 24.84% of the state, concentrated in the southeastern quadrant of the state. Other areas in southern Middle Tennessee and most of East Tennessee were shown with Moderate Drought conditions, totaling 27.16% of the state’s area. Scattered storms produced some areas of heavy rains shortly after that edition of the U.S. Drought Monitor, and more wide-spread heavy rains towards the end of the month led to improvements by the July 30th edition of the U.S. Drought Monitor. At the end of the month 50.49% of the state was shown in some level of drought or moderately dry conditions (a drop of almost 15% of the state’s area compared to the beginning of the month).

U.S. Drought Monitor Tennessee

July 2, 2024
(Released Wednesday, Jul. 3, 2024)
Valid 8 a.m. EDT



Intensity:

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

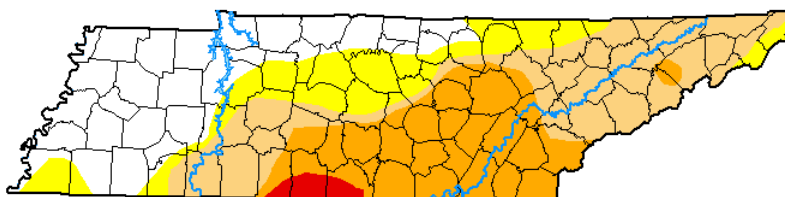
Author:
Adam Hartman
NOAA/NWS/NCEP/CPC



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>

U.S. Drought Monitor Tennessee

July 16, 2024
(Released Thursday, Jul. 18, 2024)
Valid 8 a.m. EDT



Intensity:

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

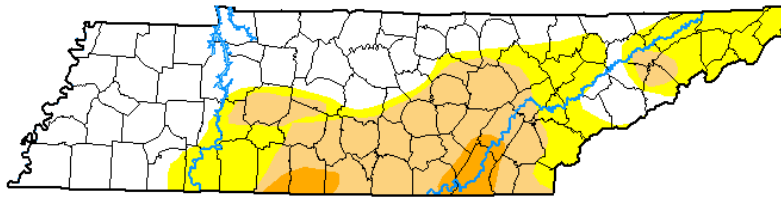
Author:
Brian Fuchs
National Drought Mitigation Center



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U.S. Drought Monitor Tennessee

July 30, 2024
(Released Thursday, Aug. 1, 2024)
Valid 8 a.m. EDT



Intensity:

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

Author:

Lindsay Johnson
National Drought Mitigation Center

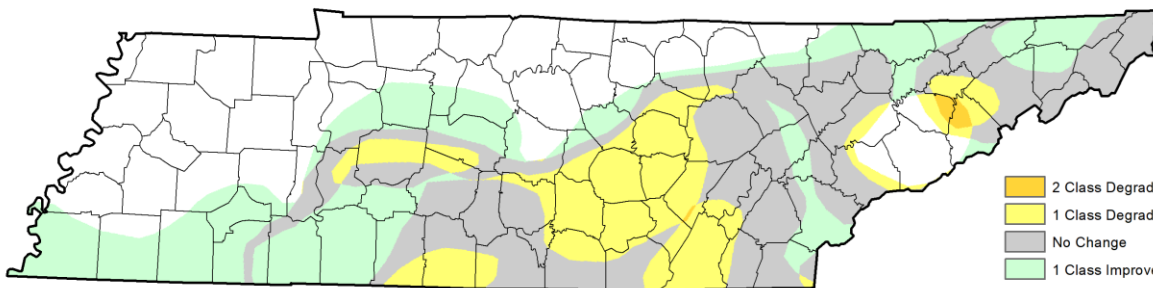


droughtmonitor.unl.edu

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July 30, 2024
compared to
July 2, 2024

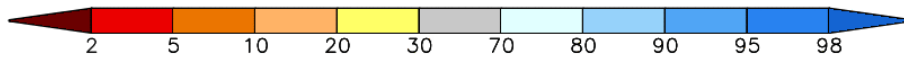
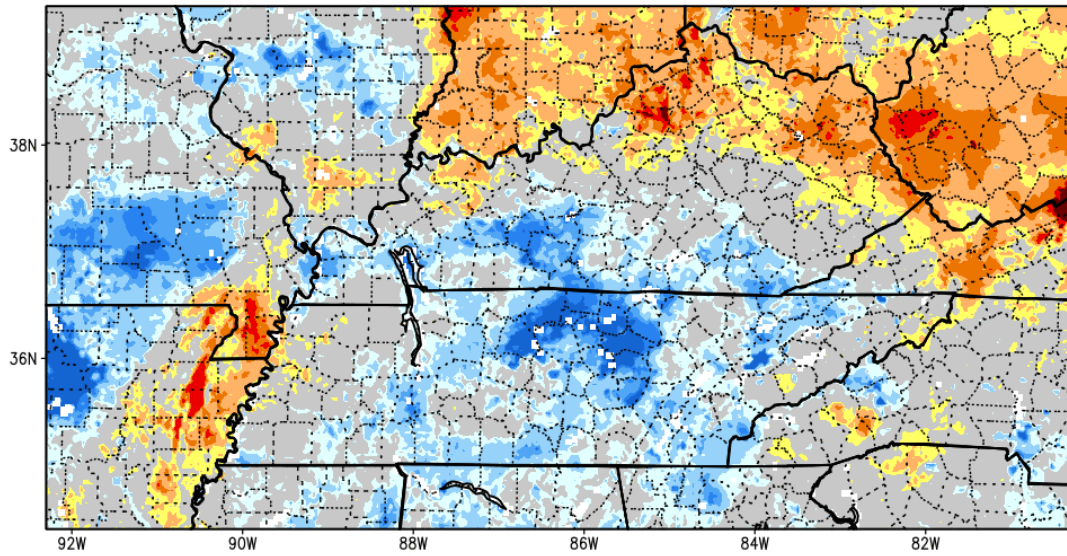
U.S. Drought Monitor Class Change - Tennessee 4 Week



Soil Moisture:

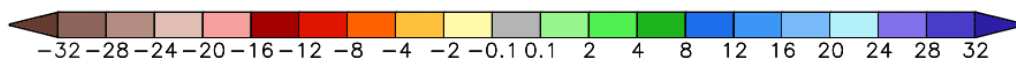
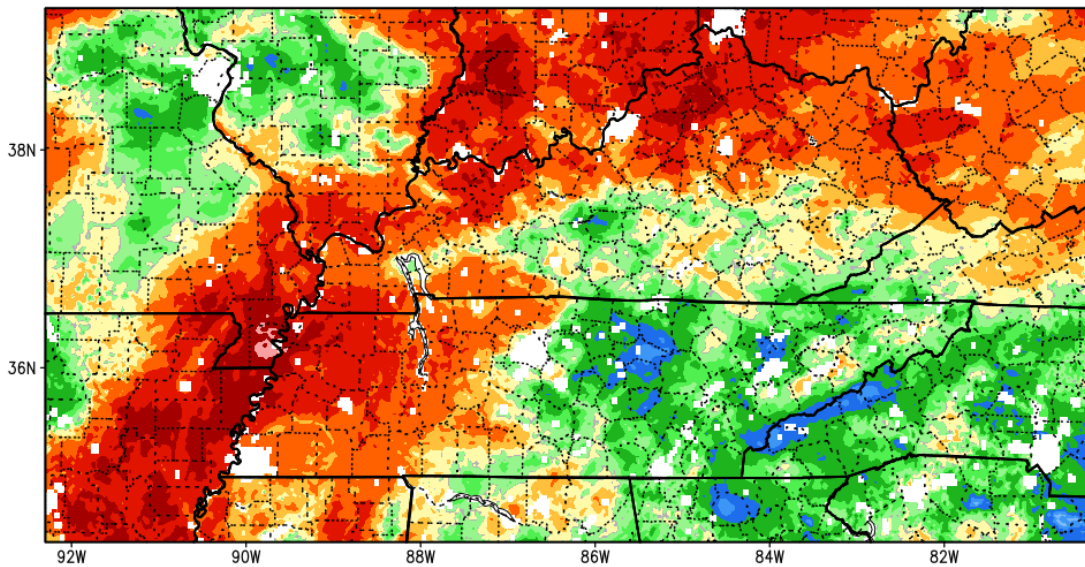
After a week and a half of heavy rainfall in many areas of Middle and East Tennessee at the end of July, the NASA SPoRT Land Information System shows many areas in Middle and East Tennessee with above normal soil moisture percentiles (>70th percentile) by the end of July. Other areas were within the normal range (30th-70th percentile). The month started out with mostly normal soil moisture levels, with rapid drops in soil moisture percentiles through the first half of the month. Soil moisture percentiles reached a minimum around July 19th when most areas of East Tennessee, southern Middle Tennessee, and western West Tennessee all had lower than normal soil moisture levels. Then spotty rains began to raise soil moisture before more wide-spread rains in the last week of July led to large-scale recovery of soil moisture levels. Over the course of the month, the eastern half of the state saw overall increasing soil moisture levels in the range of 1-12 percentile points, while the western half of the state saw decreasing soil moisture levels in the range of 1-16 percentile points. On July 28, the USDA reported that across the state topsoil moisture was 4% very short, 25% short, 63% adequate, and 8% surplus; while subsoil moisture was rated 11% very short, 24% short, 62% adequate, and 3% surplus.

SPoRT-LIS 0-200 cm Soil Moisture percentile valid 31 Jul 2024



NOTE
Experimental

1-Month Difference in Column Relative Soil Moisture (%) valid 12z 31 Jul 2024



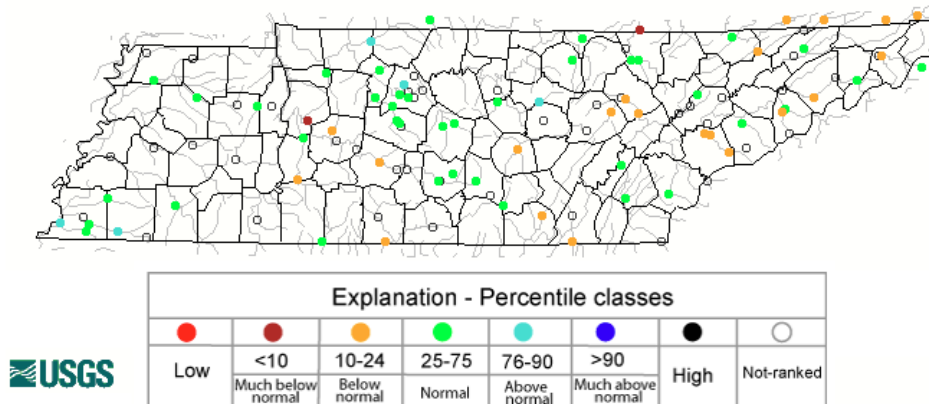
NOTE
Experimental

Streamflow:

Averaged over the month of July several USGS stream gauges reported below normal flow, mostly in East Tennessee and southern Middle Tennessee where drought conditions were the worst. A few gauges in northern Middle Tennessee and in the Memphis area of West Tennessee reported above normal streamflow levels for the month. However, with heavy rains coming at the end of the month, only two stream gauges (in western Middle Tennessee) were reporting below normal flow by August 1.

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

July 2024

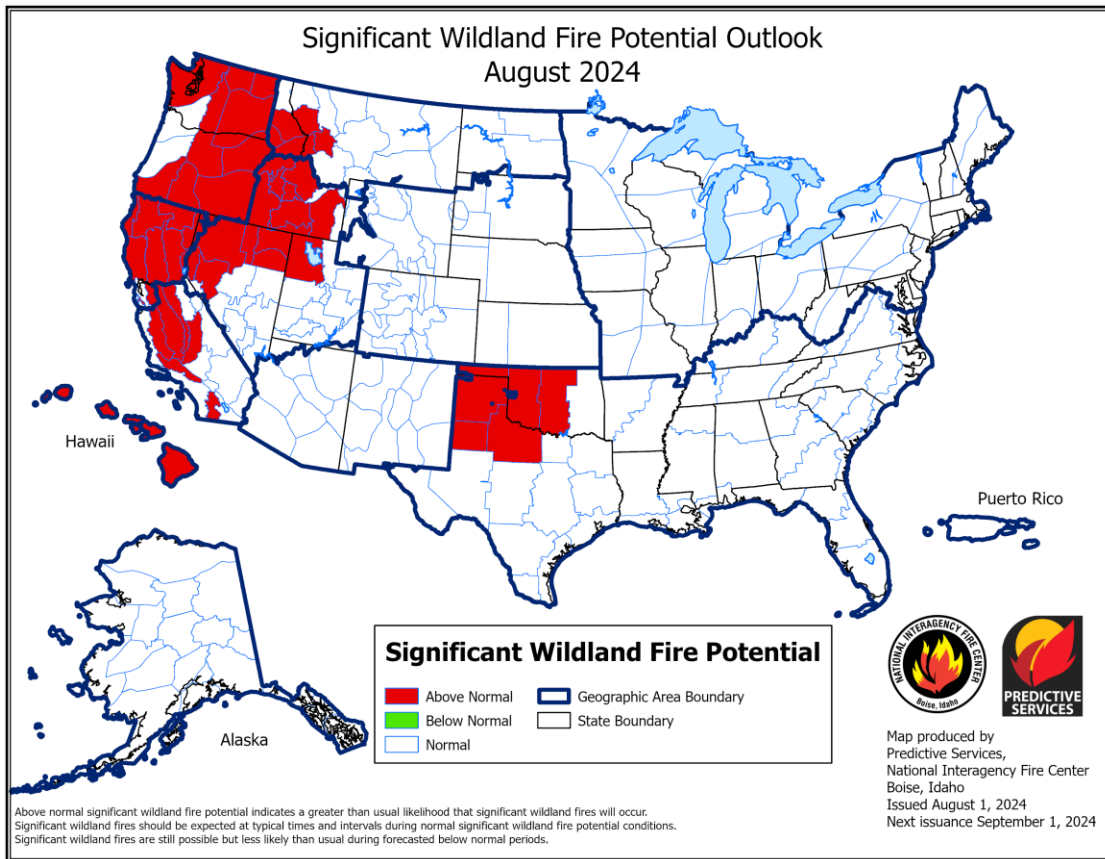


Miscellaneous:

Crop Conditions from USDA: Rapidly deteriorating drought conditions in the first half of July negatively impacted pastures, cattle, and corn in Tennessee, however rains at the end of the month started to show improvement for these products. The warm and dry weather was beneficial for cotton, tobacco and early planted soybeans as each crop maintained at least 50% in good or excellent condition through the month. Pastures were the most impacted by the drought with the percentage of pastures across the state reported in poor or very poor condition rising from a low of 22% in the first week of July to 42% by July 21, but then improving slightly, down to 33% by the end of the month. Cattle producers reported having to feed hay, and some sold off cows to reduce pasture stresses. Corn crops followed a similar pattern but not as severe, with the percentage reported in poor or very poor increasing from 15% in the first week of July to 22% by July 21, then falling to 19% by the end of the month.

| CROP PROGRESS | | | | | CONDITION | | | | | |
|-------------------------|-----------|-----------|------|-------------|-----------|-----------|------|------|------|-----------|
| Item | This Week | Last Week | 2023 | 5 Year Avg. | Item | Very Poor | Poor | Fair | Good | Excellent |
| | Percent | | | | | Percent | | | | |
| Corn – Silking | 92 | 87 | 94 | 93 | Corn | 9 | 10 | 26 | 40 | 15 |
| Corn – Dough | 61 | 48 | 66 | 59 | Cotton | 6 | 16 | 25 | 42 | 11 |
| Corn – Dented | 11 | - | 7 | 4 | Soybeans | 6 | 9 | 25 | 44 | 16 |
| Cotton – Squaring | 94 | 87 | 92 | 88 | Pasture | 12 | 21 | 33 | 31 | 3 |
| Cotton – Setting Bolls | 64 | 52 | 58 | 51 | Tobacco | 3 | 9 | 23 | 44 | 21 |
| Cotton – Bolls Opening | 1 | - | 1 | 0 | Cattle | 1 | 3 | 26 | 59 | 11 |
| Soybeans – Blooming | 78 | 70 | 75 | 71 | Hay | 5 | 9 | 31 | 48 | 7 |
| Soybeans – Setting Pods | 57 | 41 | 52 | 43 | | | | | | |
| Tobacco – Topped | 38 | 24 | 45 | 55 | | | | | | |

Fire Danger: The Interagency Fire Center’s significant wildland fire potential outlook for August shows that all areas of Tennessee and surrounding regions should have a normal potential for significant fires in August 2024.



Story of the Month:

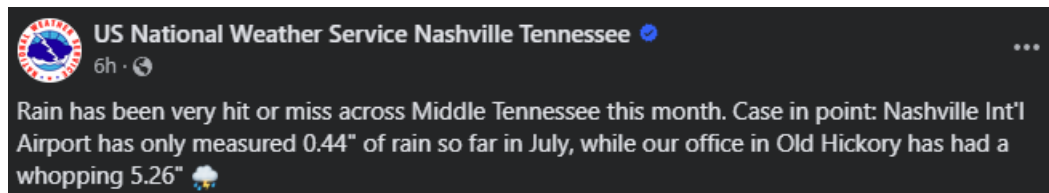
July was an active month for weather- and-climate related stories in Tennessee with drought, floods, heat waves, and severe weather. The first half of the month was mostly hot and dry with only spotty rains and record-setting heat impacting Middle and East Tennessee. These conditions were a continuation of a warm and dry June, with the first half of the summer season (June-August) being among some of the warmest and driest on record for East Tennessee. West Tennessee was largely spared due to some widespread rain connected to the remnants of Hurricane Beryl and normal to slightly cooler than normal temperatures.



- Meteorological Summer began on June 1st and goes through August
- For the period of June 1 - July 9:
 - Chattanooga
 - Average Temperature of 81.4° → Tied for 2nd warmest on record
 - 1.35" of Rainfall → 4th driest on record; driest start to Summer since 1988
 - Knoxville
 - Average Temperature of 78.4° → Tied for 11th warmest on record
 - Tri-Cities
 - Average Temperature of 75.6° → Tied with 1943 as the 4th warmest start to Summer on record
 - 2.08" of Rainfall → 4th driest on record; driest start to Summer since 1993



Drought conditions worsened rapidly with lower-than-normal stream flows and agricultural impacts being reported in the first weeks of July. Cattle and corn were the most affected due to the rapid onset and timing of the drought. Scattered storms that moved very slowly produced heavy rains starting after the middle of the month. In many cases a distance of only a few miles made the difference between several inches of rain and no rain. A good example came from the National Weather Service in Nashville, who recorded over 5" of rain by July 22 at their office, while the Nashville International Airport, about 10 miles away, recorded less than half an inch in the same time.




More widespread rains came later in the month, but they were also accompanied by severe weather and caused flash flooding in some areas of Middle and East Tennessee. The a slow-moving storm dropped several inches of rain on Sevier County on June 28; flash flooding impacted Dollywood and forced the closure of several roads in the county. A strong storm produced an EFO tornado that impacted Middle Tennessee State University's campus, and a downburst that caused even stronger straight-line winds hit areas near downtown Murfreesboro on June 29. These were among 78 reports of severe wind damage

that occurred in Tennessee from June 28-30. More storms produced flooding in and around Knoxville on June 30th with some lanes blocked on I-640 in addition to flooding on some local streets.

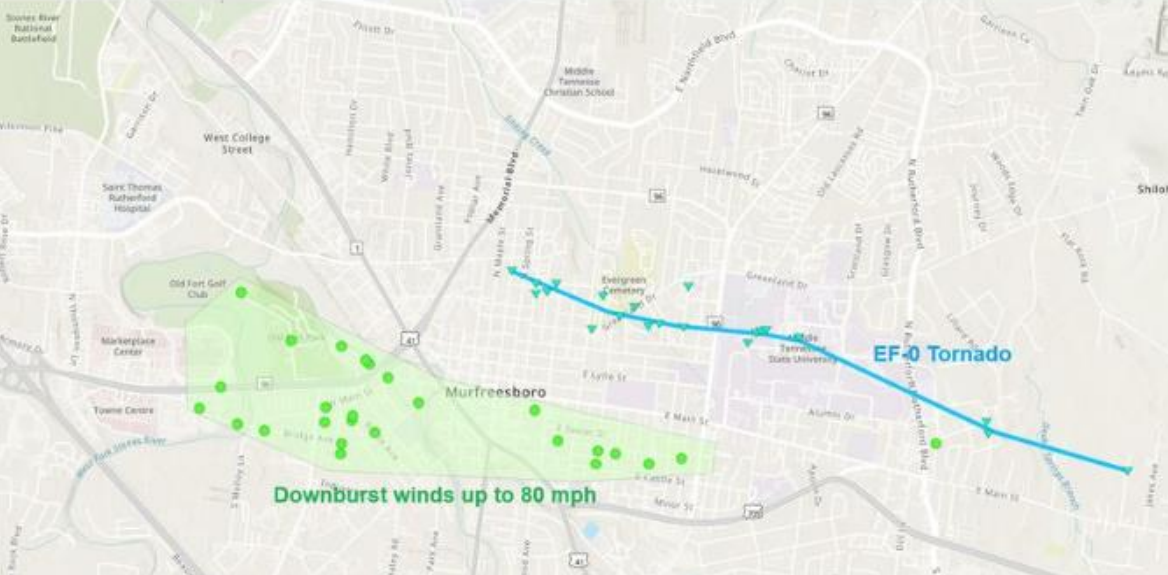


Flash flooding at Dollywood, June 28, 2024. Photo via Sophie Elkins-Valenti.

 **US National Weather Service Nashville Tennessee** a day ago

We've confirmed an EF-0 #tornado occurred in Murfreesboro in and around Middle Tennessee State University (MTSU) yesterday (Monday July 29) with max winds 75 mph, path length 3.38 miles & path width 100 yards. This is the first known tornado during the month of July in Rutherford County on record. Official tornado records began in 1950, and unofficial tornado records go back into the 1800s.

South of the tornado track, downburst winds up to 80 mph caused more significant damage than the tornado did in and around downtown Murfreesboro. Note that other wind damage occurred in other parts of Murfreesboro as well, but this was the worst affected area.



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 July 2024 there were 8 days with severe storm reports, totaling 1 tornado report, 88 reports of severe winds/severe wind damage, and 3 reports of severe hail (1" or larger).

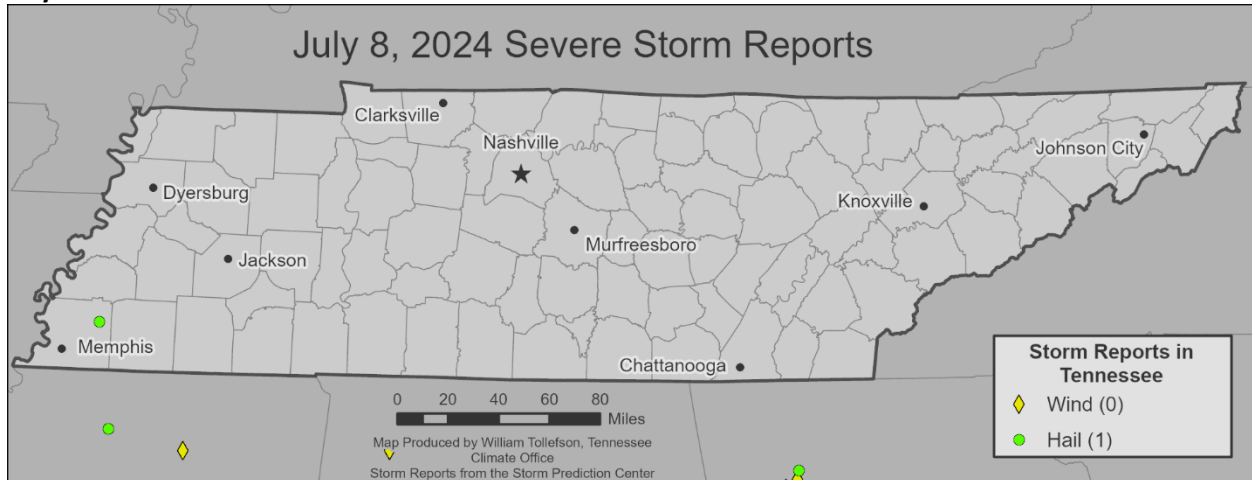
July 4



Wind:

| Time (UTC) | Speed (mph) | Location | County | Lat | Lon | Comments |
|------------|-------------|-------------|-----------|------|--------|--|
| 23:07 | 60 | Springfield | Robertson | 36.5 | -86.88 | Tspotter estimated 55 to 60 mph winds in Springfield TN. (OHX) |

July 8



Hail:

| Time (UTC) | Size (in) | Location | County | Lat | Lon | Comments |
|------------|-----------|----------------|--------|-------|--------|--|
| 18:25 | 1.50 | 2 NNE Lakeland | Shelby | 35.27 | -89.72 | Corrects previous hail report from 2 NNE Lakeland. Ping pong ball-sized hail off of Highway 70 near City Hall in Lakeland. (MEG) |

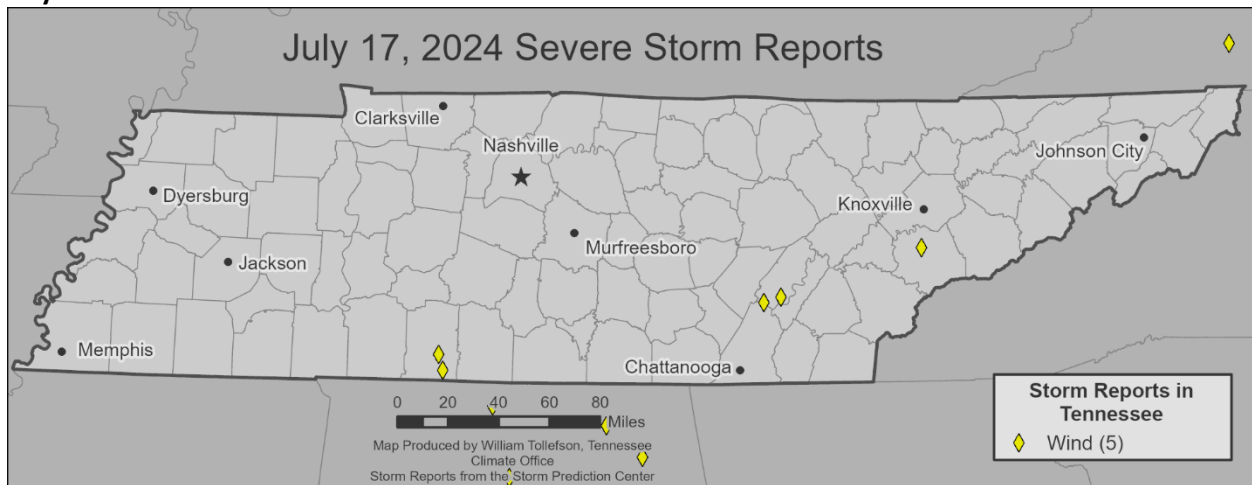
July 16



Wind:

| Time (UTC) | Speed (mph) | Location | County | Lat | Lon | Comments |
|------------|-------------|------------------|----------|-------|--------|---|
| 21:05 | -- | 7 SW Chattanooga | Hamilton | 35 | -85.34 | Several large branches down. (MRX) |
| 9:48 | -- | 9 ENE Celina | Clay | 36.59 | -85.34 | Delayed report. A few trees and a 40 foot TV tower were blown down. (OHX) |

July 17



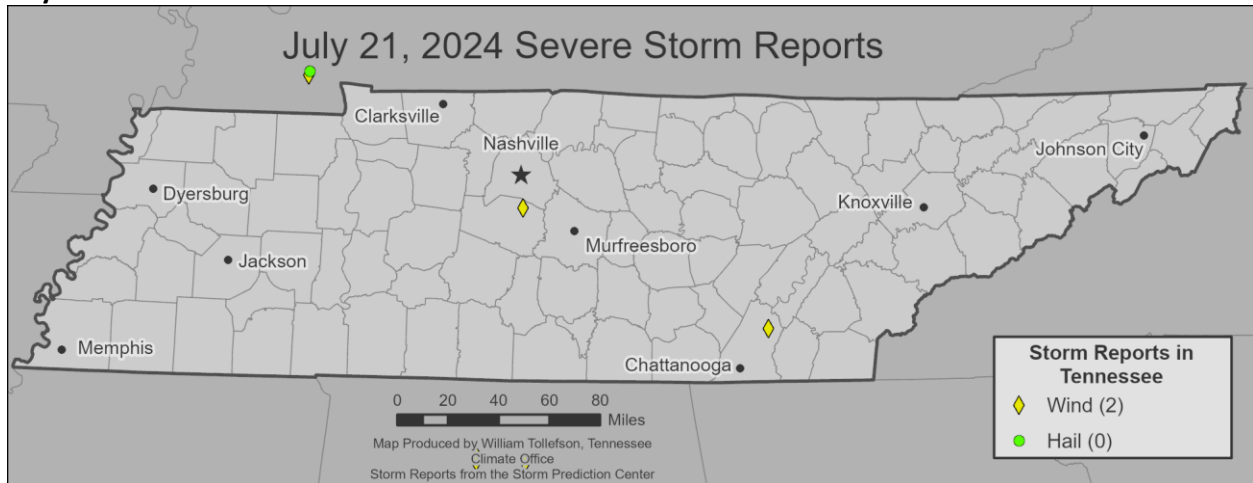
Wind:

| Time (UTC) | Speed (mph) | Location | County | Lat | Lon | Comments |
|------------|-------------|------------------|----------|-------|--------|--|
| 18:49 | -- | 7 E Loretto | Lawrence | 35.06 | -87.32 | Several trees down north of Five Points. (OHX) |
| 19:05 | -- | 7 S Lawrenceburg | Lawrence | 35.15 | -87.35 | Corrects previous tstm wnd dmg report from 7 E Loretto. Trees down in Leoma near Rabbit Trail Road at Old Florence Pulaski Road. Time appx and based on radar. (OHX) |

July 2024 Tennessee State Climate Summary

| | | | | | | |
|-------|----|--------------|--------|-------|--------|--|
| 21:15 | -- | Graysville | Rhea | 35.45 | -85.08 | A large tree fell and snapped two power poles in Graysville. (MRX) |
| 21:30 | -- | 3 ESE Dayton | Rhea | 35.48 | -84.96 | Several large trees were blown over near Frazier Park. (MRX) |
| 21:35 | -- | Maryville | Blount | 35.75 | -83.97 | Multiple trees down. Tree struck an ambulance but no injuries. (MRX) |

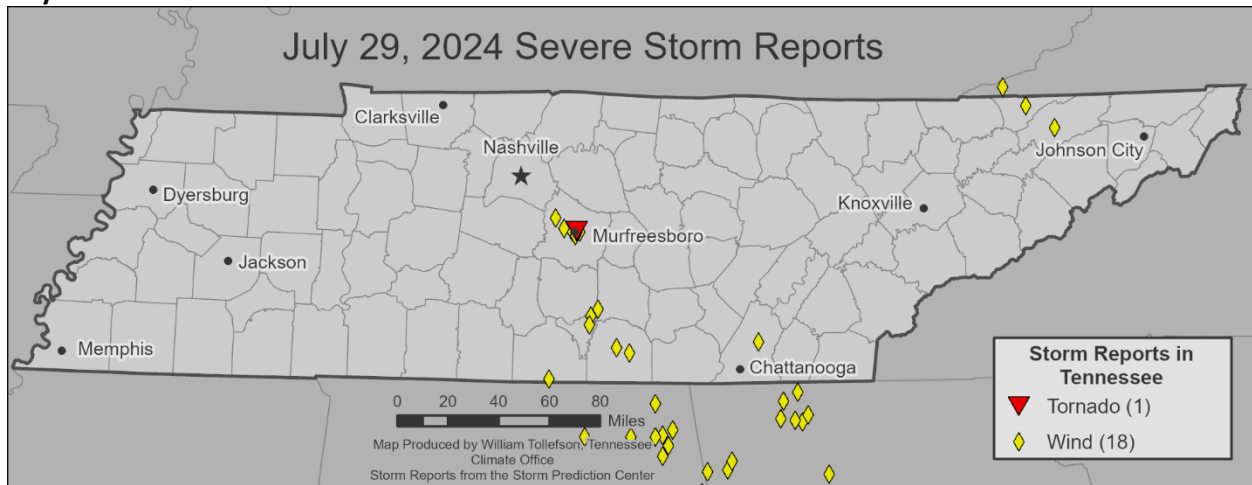
July 21



Wind:

| Time (UTC) | Speed (mph) | Location | County | Lat | Lon | Comments |
|------------|-------------|------------------|------------|-------|--------|--|
| 20:52 | -- | 2 SE Brentwood | Williamson | 35.98 | -86.77 | Tspotter reports indicate a few trees were blown down in and around Crockett Park including on Crockett Road. (OHX) |
| 23:15 | -- | 5 NE Shady Grove | Hamilton | 35.29 | -85.05 | Time estimated by radar. Large trees down... fence damaged... and an HF radio antenna is down due to thunderstorm winds. (MRX) |

July 29



Tornado:

| Time (UTC) | Strength | Location | County | Lat | Lon | Comments |
|------------|----------|--------------|------------|-------|--------|--|
| 19:24 | EF0 | Murfreesboro | Rutherford | 35.85 | -86.39 | A small... weak EF-0 tornado moved through Murfreesboro... also impacting Middle Tennessee State University. Main damage was large tree branches down... with some trees (OHX) |

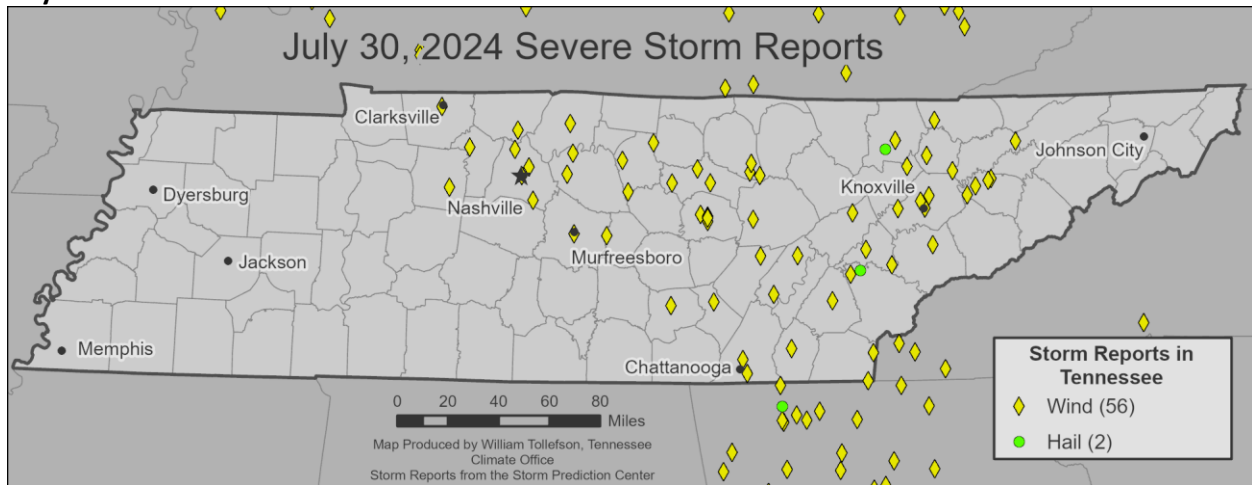
Wind:

| Time (UTC) | Speed (mph) | Location | County | Lat | Lon | Comments |
|------------|-------------|--------------------|------------|-------|--------|--|
| 19:15 | -- | 4 SSW Smyrna | Rutherford | 35.93 | -86.54 | Trees reported down near I-24 in Smyrna. (OHX) |
| 19:17 | -- | 5 W Murfreesboro | Rutherford | 35.87 | -86.48 | Tspotter photo of part of siding blown off house near I-24 and I-840 in Blackman area. (OHX) |
| 19:25 | -- | 1 WSW Murfreesboro | Rutherford | 35.85 | -86.42 | A swath of intense damaging winds up to 80 mph occurred across central Murfreesboro from around the Stones River to downtown. Damage consisted of many trees down or upr (OHX) |
| 19:25 | -- | 1 ENE Murfreesboro | Rutherford | 35.86 | -86.38 | Tspotter report of trees down around the Oaklands Mansion. (OHX) |
| 19:27 | -- | 2 E Murfreesboro | Rutherford | 35.85 | -86.37 | Tspotter photo showed truck overturned and trees down at MTSU stadium. (OHX) |
| 19:28 | -- | 1 SE Murfreesboro | Rutherford | 35.85 | -86.39 | Tree down on Maney St at Burton St. (OHX) |
| 19:28 | -- | 1 WSW Murfreesboro | Rutherford | 35.85 | -86.42 | Tspotter report of several trees and traffic lights blown down on Old Fort Parkway. (OHX) |

July 2024 Tennessee State Climate Summary

| Time (UTC) | Speed (mph) | Location | County | Lat | Lon | Comments |
|-------------------|--------------------|--------------------|---------------|------------|------------|--|
| 19:29 | -- | 1 SSW Murfreesboro | Rutherford | 35.83 | -86.4 | Trees down on Haley Road. (OHX) |
| 19:30 | -- | Murfreesboro | Rutherford | 35.85 | -86.39 | Trees snapped on Academy St. (OHX) |
| 20:14 | -- | 7 NNE Lynchburg | Moore | 35.37 | -86.29 | A tree was reported across the road at this location on Old Shelbyville Highway. (HUN) |
| 20:15 | -- | 3 NNW Tullahoma | Coffee | 35.41 | -86.24 | Tspotter report of tree down across Hwy 269 just north of Ralph Broadrick Rd. (OHX) |
| 20:18 | -- | 4 NE Lynchburg | Moore | 35.32 | -86.3 | A tree limb was reported down on the road at this location near the intersection of Hurricane Creek road and Cobb Hollow road. (HUN) |
| 20:45 | -- | 10 S Fayetteville | Lincoln | 35.01 | -86.58 | A tree was reported down on Camper Creek Road near Old Huntsville Road. (HUN) |
| 20:52 | -- | Cowan | Franklin | 35.16 | -86.02 | A large portion of a tree was uprooted at this location. (HUN) |
| 21:07 | -- | Winchester | Franklin | 35.19 | -86.11 | Several trees and powerlines down across the entire county. (HUN) |
| 21:15 | -- | 2 S Shady Grove | Hamilton | 35.22 | -85.12 | Reports of trees and powerlines down on Hamby Rd and also Mowbray Pike Rd. Water also covering roadway on Thatcher Rd. (MRX) |
| 11:15 | -- | Sneedville | Hancock | 36.54 | -83.21 | Trees down. (MRX) |
| 11:30 | -- | Rogersville | Hawkins | 36.41 | -83.01 | Several trees down. (MRX) |

July 30



Wind:

| Time (UTC) | Speed (mph) | Location | County | Lat | Lon | Comments |
|------------|-------------|------------------|-----------|-------|--------|--|
| 18:54 | -- | 3 W Sparta | White | 35.95 | -85.52 | Report from mPING: 1-inch tree limbs broken; Shingles blown off. (OHX) |
| 19:00 | -- | 5 E Harriman | Roane | 35.95 | -84.45 | Couple trees down. (MRX) |
| 19:00 | -- | 1 W Karns | Knox | 35.97 | -84.13 | A large tree fell onto powerlines along Garrison Drive in Karns. (MRX) |
| 19:11 | -- | 2 S Sparta | White | 35.91 | -85.47 | Tree down on Panther Dr. (OHX) |
| 19:15 | -- | 6 NE Monterey | Overton | 36.19 | -85.17 | Tree down on Hwy 164 at Pierce Ln. (OHX) |
| 19:20 | -- | Knoxville | Knox | 35.97 | -83.94 | Several trees down across the county. (MRX) |
| 20:00 | -- | 4 W Clarkrange | Fentress | 36.17 | -85.1 | Large tree down. (OHX) |
| 20:01 | -- | 2 WSW New Market | Jefferson | 36.09 | -83.58 | Multiple trees down between New Market and Strawberry Plains. (MRX) |
| 20:10 | -- | 9 NE Carthage | Smith | 36.36 | -85.85 | Trees down near and across Little Salt Lick Creek Rd. (OHX) |
| 20:11 | -- | 4 NNW Cookeville | Putnam | 36.21 | -85.54 | Trees and power lines down on several roads across Putnam County per Putnam County Sheriff... including on Gainesboro Rd at Foster Circle... Bunker Hill at Tanasi Trail (OHX) |
| 20:11 | -- | 6 N Gallatin | Sumner | 36.47 | -86.44 | Large tree limb down. (OHX) |
| 20:15 | -- | Loudon | Loudon | 35.74 | -84.36 | Multiple trees down in and around Loudon. (MRX) |

| Time (UTC) | Speed (mph) | Location | County | Lat | Lon | Comments |
|------------|-------------|------------------------|------------|-------|--------|--|
| 20:15 | -- | 9 NNE Monterey | Overton | 36.24 | -85.16 | Facebook report and photo of 12 trees uprooted in yard of home in Hanging Limb. (OHX) |
| 20:16 | -- | 6 WNW South Carthage | Smith | 36.26 | -86.07 | Tree on Hwy 70 in Rome. (OHX) |
| 20:20 | -- | 1 ENE Jefferson City | Jefferson | 36.13 | -83.47 | Several large trees were broken or down along North Chucky Road in Jefferson City. (MRX) |
| 20:25 | -- | 3 SSW Wildwood | Blount | 35.76 | -83.89 | Powerlines were down across East Lamar Alexander Parkway between Buchanan Road and John Helton Road. (MRX) |
| 20:25 | -- | 3 SE Strawberry Plains | Jefferson | 36.04 | -83.64 | Trees down. (MRX) |
| 20:28 | -- | 1 ENE Belinda City | Wilson | 36.18 | -86.46 | Traffic signals blown down at Golden Bear Pkwy and I-40. (OHX) |
| 20:29 | -- | 5 WSW Baxter | Putnam | 36.13 | -85.72 | Tree on home. Occupant trapped. (OHX) |
| 20:30 | -- | Greenback | Loudon | 35.65 | -84.18 | Multiple trees down in and around Greenback. (MRX) |
| 20:33 | -- | Alexandria | De Kalb | 36.08 | -86.03 | Facebook photo of small tree down on house in Temperance Hall area. (OHX) |
| 20:40 | -- | 1 SW La Follette | Campbell | 36.36 | -84.14 | Several large trees down along with multiple powerlines in La Follette TN from multiple social media relayed reports. (MRX) |
| 20:47 | -- | 5 SSE Pleasant Hill | Cumberland | 35.92 | -85.15 | Corrects previous tstm wnd dmg report from 5 SSE Pleasant Hill. Multiple trees down in this area including on Taylors Chapel Rd... POW Camp Rd... Old Hwy 70... and Earl (OHX) |
| 20:50 | -- | Norris | Anderson | 36.21 | -84.06 | Trees down on Dairy Pond Rd. (MRX) |
| 20:52 | -- | 4 SE Cookeville | Putnam | 36.13 | -85.45 | Report from mPING: Trees uprooted or snapped; Roof blown off. (OHX) |
| 20:54 | -- | Sparta | White | 35.94 | -85.47 | Tree down at the intersection of N Spring St and Wright Rd. (OHX) |
| 21:00 | -- | 2 S Norris Lake | Union | 36.27 | -83.92 | Trees down in Big Ridge State Park. (MRX) |

| Time (UTC) | Speed (mph) | Location | County | Lat | Lon | Comments |
|------------|-------------|--------------------|------------|-------|--------|--|
| 21:00 | -- | 1 ENE Speedwell | Claiborne | 36.47 | -83.86 | Several trees down. (MRX) |
| 21:05 | -- | 3 SSE Halls | Knox | 36.04 | -83.91 | Several large diameter trees snapped at the trunk along Tazewell Pike... along with a large branch broken on Beverly Road. (MRX) |
| 21:11 | -- | 2 NE Spring City | Rhea | 35.71 | -84.84 | Winds... likely associated with thunderstorm outflow... brought down a large chunk of a tree just north of Spring City. (MRX) |
| 21:15 | -- | Sweetwater | Monroe | 35.6 | -84.47 | Several trees down east of Sweetwater. (MRX) |
| 21:22 | -- | Sparta | White | 35.93 | -85.47 | Water over the road in Sparta. (OHX) |
| 21:23 | -- | 3 NNW Knoxville | Knox | 36.01 | -83.97 | Sky Warn reports of standing water and impassable traffic through central Knoxville and Knox County. This included I-75 between exit 108 Merchants Drive and exit 110 Ca (MRX) |
| 21:25 | -- | 2 S Luttrell | Union | 36.18 | -83.74 | Multiple trees down across driveway. (MRX) |
| 21:30 | -- | Dayton | Rhea | 35.49 | -85.01 | Several trees down. (MRX) |
| 21:30 | -- | 3 SW Melvine | Bledsoe | 35.71 | -85.1 | Multiple trees down in the northern portions of the county. (MRX) |
| 21:33 | -- | 1 SW Murfreesboro | Rutherford | 35.84 | -86.41 | Trees down and power outages. (OHX) |
| 21:34 | 60 | 6 NNW Dunlap | Sequatchie | 35.45 | -85.43 | (MRX) |
| 21:40 | -- | Altamont | Grundy | 35.43 | -85.73 | Facebook posts show much of the Altamont City Hall sheet metal roof was blown off. Time estimated based on radar. (OHX) |
| 21:40 | -- | Jefferson City | Jefferson | 36.12 | -83.49 | Multiple trees down. 15 roads in the county with downed trees. Large section of Talbott Kansas Rd is closed. (MRX) |
| 21:40 | -- | 1 WNW Bean Station | Grainger | 36.34 | -83.29 | Trees down. (MRX) |
| 21:50 | -- | Athens | McMinn | 35.45 | -84.6 | Multiple trees and power lines down from Athens to the northern portions of the county. (MRX) |

July 2024 Tennessee State Climate Summary

| Time (UTC) | Speed (mph) | Location | County | Lat | Lon | Comments |
|------------|-------------|-------------------|------------|-------|--------|--|
| 22:02 | -- | 1 WNW Cleveland | Bradley | 35.18 | -84.89 | Tree down. Some home damage. (MRX) |
| 22:05 | -- | 3 E Red Bank | Hamilton | 35.12 | -85.23 | A large tree was felled near Chickamauga Dam. (MRX) |
| 22:16 | 62 | 4 SE Chattanooga | Hamilton | 35.04 | -85.2 | ASOS at Chattanooga Airport measured a 62 mph gust. (MRX) |
| 22:23 | -- | 2 NE Turtletown | Polk | 35.15 | -84.32 | Reported by Trained Spotter. Trees down in Farner Tennessee. (MRX) |
| 0:00 | -- | 6 SSW Ridgetop | Davidson | 36.32 | -86.83 | Trees down at Clay Lick Rd and I-24. (OHX) |
| 0:28 | -- | 6 S Gallatin | Wilson | 36.3 | -86.42 | Report from mPING: 1-inch tree limbs broken; Shingles blown off. (OHX) |
| 1:28 | -- | Readyville | Cannon | 35.83 | -86.18 | A few trees down near Readyville. (OHX) |
| 1:35 | -- | 1 NNE Inglewood | Davidson | 36.22 | -86.73 | Corrects previous tstm wnd dmg report from 1 NNE Inglewood. Significant microburst struck the Inglewood area roughly from Gallatin Pike to Kennedy Drive. Numerous large (OHX) |
| 1:35 | -- | Greenbrier | Robertson | 36.43 | -86.81 | Brick storage building collapsed at Hwy 41 and E College St. Apparent microburst based on radar. (OHX) |
| 2:15 | -- | Clarksville | Montgomery | 36.56 | -87.35 | Facebook reports indicate a few trees down across Clarksville with some falling onto mobile homes in New Providence. (OHX) |
| 3:00 | -- | 6 NW Ashland City | Cheatham | 36.33 | -87.15 | Twitter report of trees down all over Chapmansboro. (OHX) |
| 3:07 | -- | 4 NNE Burns | Dickson | 36.1 | -87.29 | Two trees down on Highway 70 about 3 miles east of Hwy 96. (OHX) |
| 3:30 | -- | Nashville | Davidson | 36.17 | -86.78 | Power lines down with 1300+ customers without power. (OHX) |
| 3:52 | -- | 3 SSW Antioch | Davidson | 36.03 | -86.7 | Tree and power lines down on Barnes Rd. (OHX) |

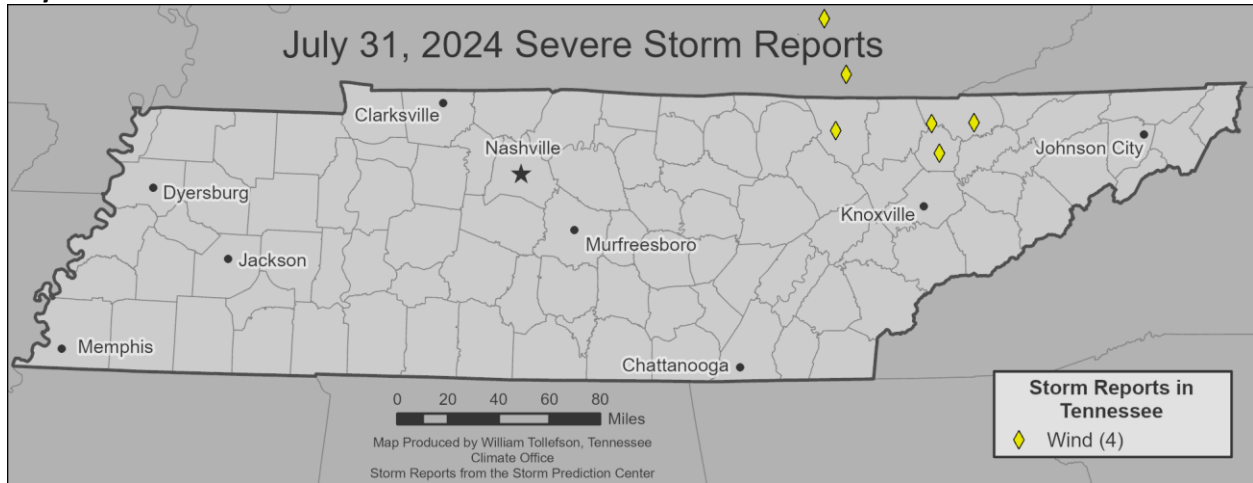
Hail:

| Time (UTC) | Size (in) | Location | County | Lat | Lon | Comments |
|------------|-----------|-----------------|----------|-------|--------|--|
| 20:38 | 1.00 | 1 SSE Caryville | Campbell | 36.31 | -84.21 | Strong winds and hail at Cove Lake State Park... hail was generally dime to nickel sized but the largest were quarter sized. (MRX) |

July 2024 Tennessee State Climate Summary

| Time (UTC) | Size (in) | Location | County | Lat | Lon | Comments |
|------------|-----------|------------------|--------|-------|-------|--|
| 21:00 | 1.00 | 4 S Philadelphia | Monroe | 35.62 | -84.4 | Brief hail shower lasted around 10 minutes with the largest hailstones estimated around quarter sized. (MRX) |

July 31



Wind:

| Time (UTC) | Speed (mph) | Location | County | Lat | Lon | Comments |
|------------|-------------|-------------------|-----------|-------|--------|--|
| 23:16 | -- | 4 W Huntsville | Scott | 36.41 | -84.56 | Trees down in the Helenwood Loop area. (MRX) |
| 0:05 | -- | 2 SSW Speedwell | Claiborne | 36.44 | -83.88 | Tree down at Wilson Road and Blue Springs Road. (MRX) |
| 0:17 | -- | 1 SSW Tazewell | Claiborne | 36.44 | -83.58 | Tree down on McMurray Street in New Tazewell. Time estimated from radar. (MRX) |
| 0:20 | -- | 2 NW Maynardville | Union | 36.27 | -83.83 | Tree down near 2080 Hickory Valley Road. Time estimated from radar. (MRX) |

CPC Outlooks for the Next Month:

The NOAA Climate Prediction Center outlooks for August show all of Tennessee leaning towards above normal temperatures, with higher confidence for the eastern half of the state. The Precipitation Outlook shows West Tennessee leaning towards a drier than normal pattern, with the remainder of the state having equal chances for normal, wetter than normal, or drier than normal conditions.

