1-1-2024

2023 - Tennessee Annual Climate Summary

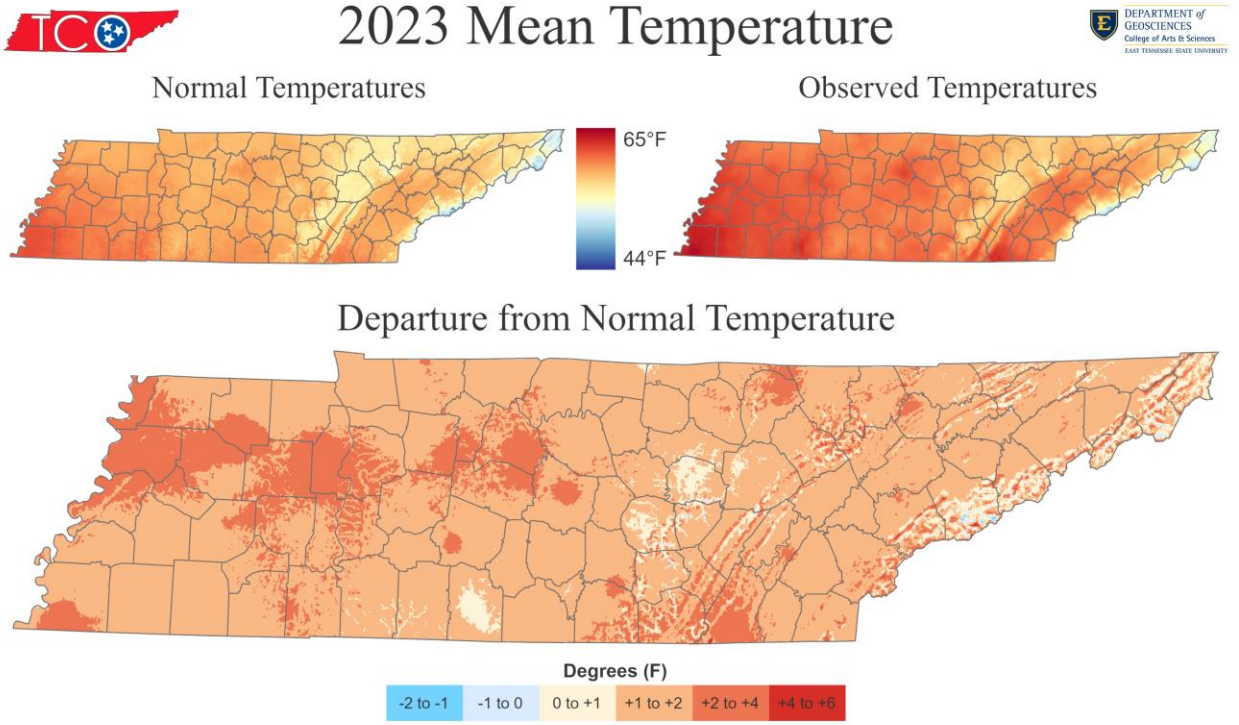
Tennessee Climate Office, East Tennessee State University

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

Annual Temperature Summary:

The mean (average) temperature for 2023 was warmer than normal for Tennessee, with most of the state averaging 1-2°F warmer than the 1991-2020 NOAA Climate Normals. Some areas, especially the northern half of West Tennessee, around the Nashville Metro area in Middle Tennessee, and southern Tennessee Valley locations in East Tennessee average 2-4°F warmer than the 1991-2020 normals.



Stations with the highest mean temperature

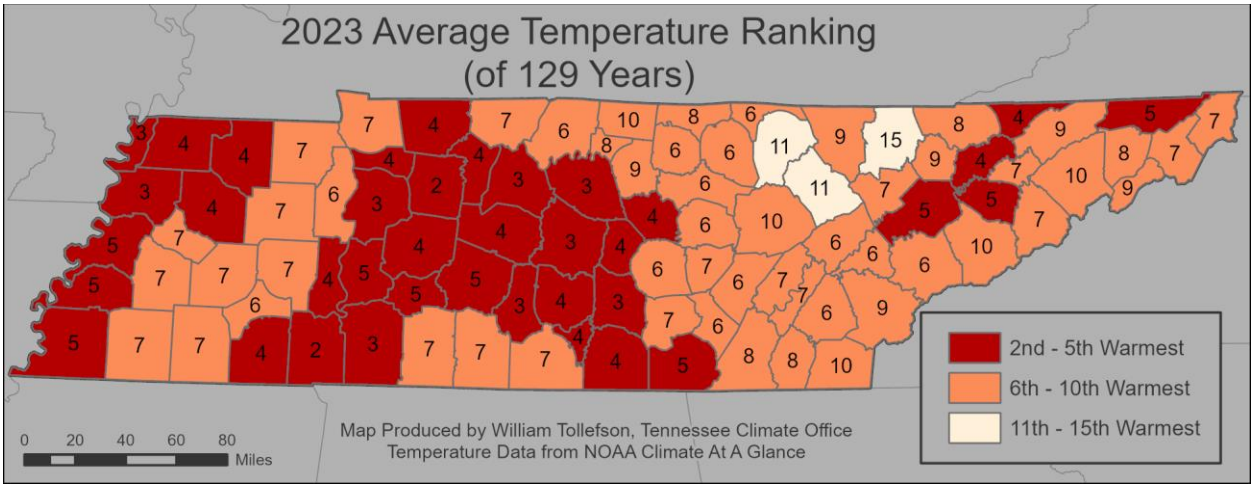
Station Name	Station Type	Mean Temperature (F)
MEMPHIS INTERNATIONAL AP	WBAN	65.2
SHILOH NMP TENNESSEE	RAWS	64.8
LEWISBURG TOWER TENNESSEE	RAWS	63.8
CHATTANOOGA AP	WBAN	63.8
SAVANNAH 6 SW	COOP	63.6

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

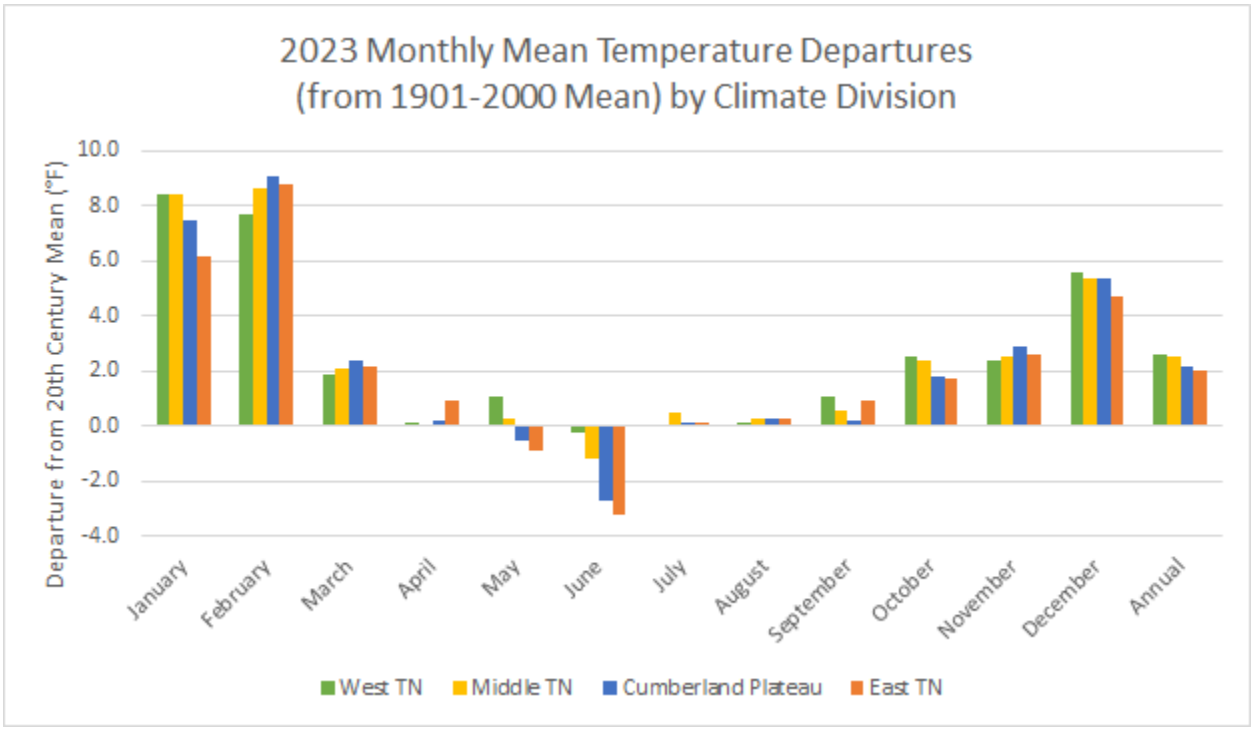
Stations with the lowest mean temperature

Station Name	Station Type	Mean Temperature (F)
MT LECONTE	COOP	43.7
NEWFOUND GAP	COOP	50.5
ROAN MOUNTAIN 3SW	COOP	52.6
MOUNTAIN CITY 2	COOP	54.1
COALMONT	COOP	55.9

Comparing this year's average temperatures to the 20th century mean, all four of Tennessee's climate divisions (West, Middle, Cumberland Plateau, and East) were warmer than average by 2 to 2.6 degrees Fahrenheit, with West Tennessee having the highest anomaly at 2.6°F and East Tennessee having the lowest at 2.0°F. Additionally, data from NOAA's Climate at a Glance tool showed that all counties in Tennessee had one of their top 15 warmest years with NOAA data going back to 1895, and 38 of Tennessee's 95 counties had a top 5 warmest year.

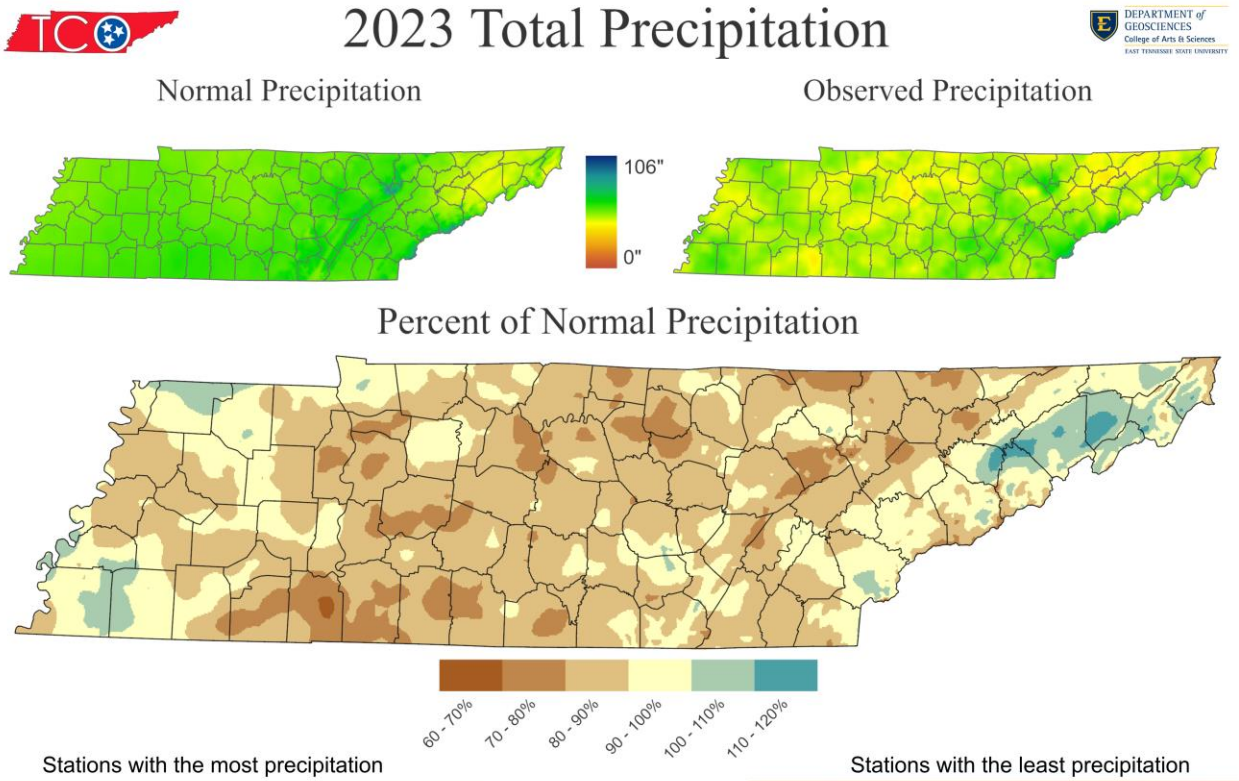


This warmth was not spread evenly through the year. January and February were very warm, with mean temperatures for the state between 7.7°F and 8.3°F warmer than the 20th century mean. March was still warmer than normal, but only in the range of about 2°F. April and May had temperatures that were close to the 20th century mean in all four climate divisions. June 2023 was cooler than the 20th century mean in all four climate divisions, with the East Tennessee Climate Division being the coolest (a monthly mean temperature of 69.1°F, which was 3.2 degrees below the 20th century mean for the month). The Cumberland Plateau was similarly cool, with a mean temperature for June that was 2.7 degrees below the 20th century average. July and August were very close to average temperatures across the state, before temperatures started to creep up to warmer than the 20th century mean for the rest of the year. September was slightly warmer than the 20th century mean across the state, October and November averaged 1-3 degrees warmer than the 20th century mean, and December saw temperature anomalies increase to 4.7-5.6 degrees warmer than the 20th century mean.



Annual Precipitation Summary:

Total precipitation across the state during 2023 was mostly below the 1991-2020 NOAA Climate Normals. There were a few exceptions, with parts of northeast Tennessee recording 110-120% of their normal annual precipitation, and a few other patches of West Tennessee recording up to 110% of their normal annual precipitation. Hardin County recorded some of the most below normal precipitation for the year, with a few areas in the county having less than 70% of their normal annual precipitation.



Stations with the most precipitation

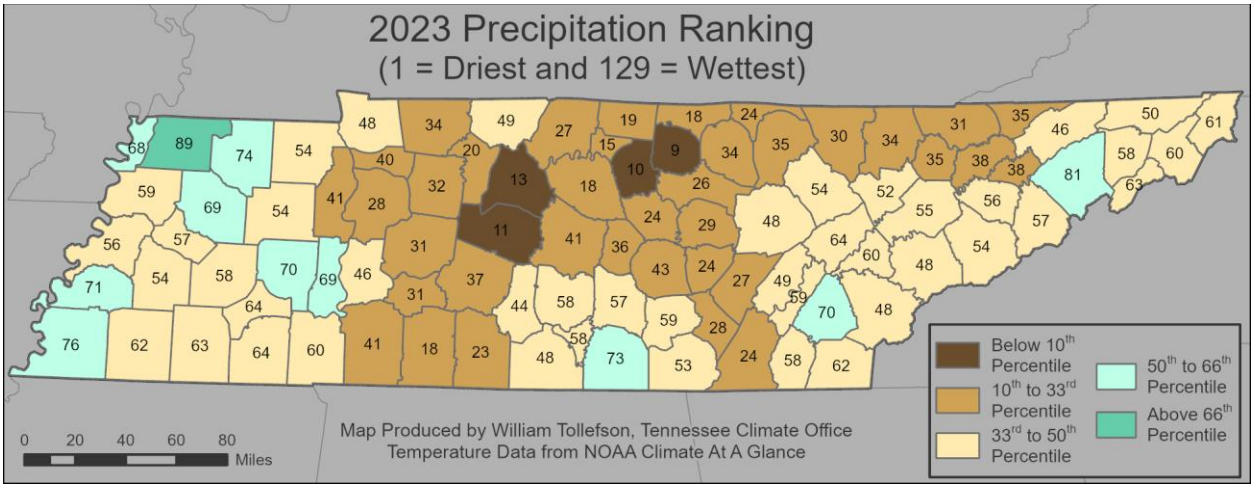
Station Name	Station Type	Total Precipitation (in)
MT LECONTE	COOP	79.78
NEWFOUND GAP	COOP	73.04
SEWANEE	COOP	68.91
BENTON 2.3 ESE	CoCoRaHS	66.83
ATOKA 3.2 ESE	CoCoRaHS	64.35

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

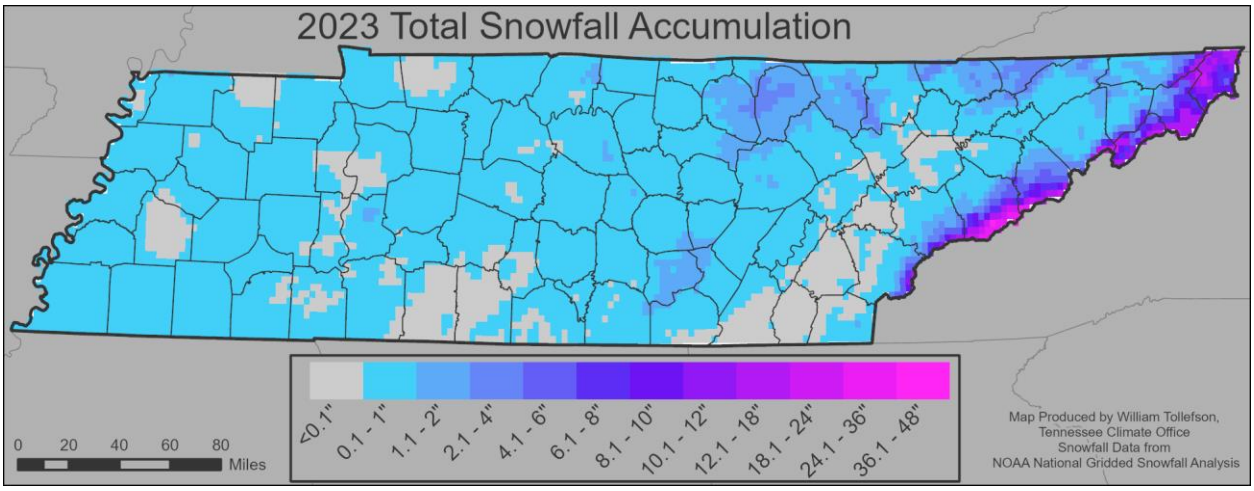
Stations with the least precipitation

Station Name	Station Type	Total Precipitation (in)
CLEVELAND 1.2 W	CoCoRaHS	31.5
NASHVILLE 7.6 WSW	CoCoRaHS	32.38
CHEATHAM LOCK & DAM	COOP	35.18
MORRISTOWN RADIO WCRK	COOP	35.83
SODDY DAISY-MOWBRAY MTN	COOP	36.43

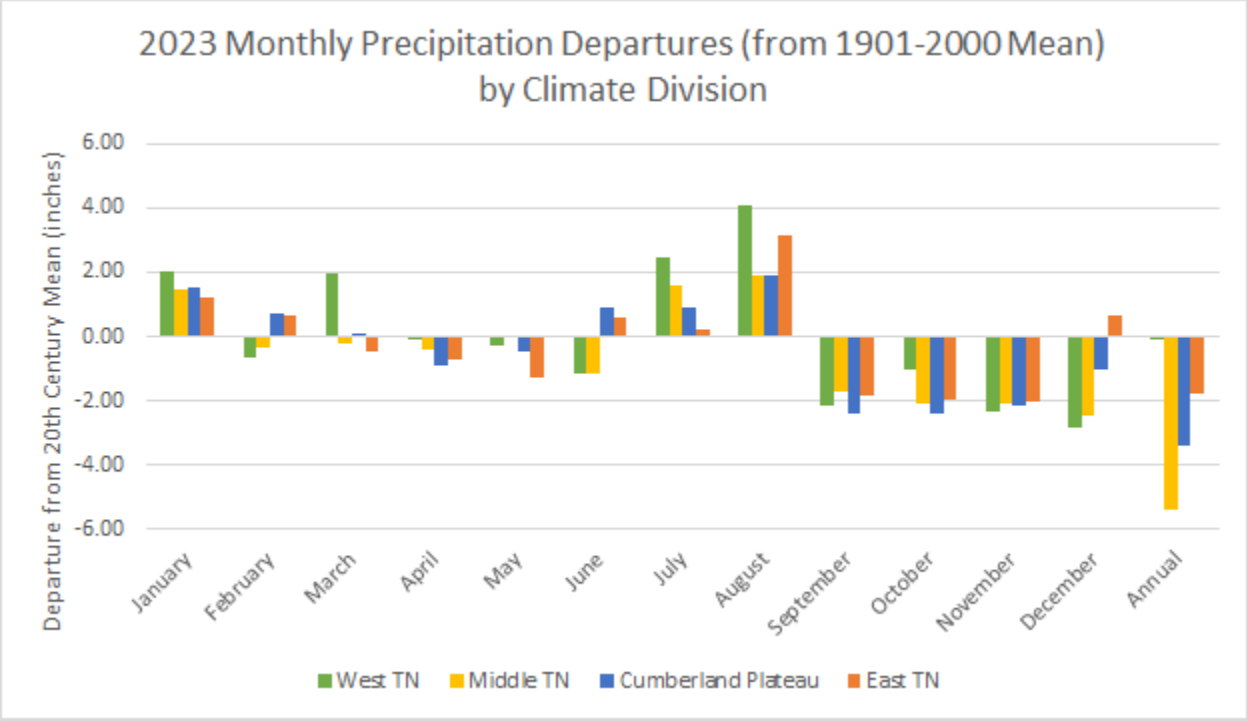
Compared to the 20th century average precipitation, all four climate divisions of Tennessee had a drier than normal year, with Middle Tennessee recording the largest anomaly, at 5.42-inches below average for the year. County-level average precipitation from the NOAA Climate at a Glance tool shows that four counties in the Middle Tennessee Climate Division (Jackson, Smith, Williamson, and Davidson counties) ranked in the bottom 10th percentile for precipitation this year. An additional 80 counties, for a total 84 of Tennessee's 95 counties, ranked below the 50th percentile for precipitation. Obion County in northwest Tennessee ranked 89th this year, placing it at the 69th percentile and the only Tennessee county that had a top 1/3rd wettest year in 2023.



The below average precipitation and warmer than normal months for January, February, March, and December also led to a snow drought for the state, with few locations recording more than 1-inch of snowfall during 2023.



Using data from NOAA's Climate at a Glance tool, averaged over the state's four climate divisions, West Tennessee finished 2023 virtually tied with the 20th century mean precipitation, coming in just 0.02-inches below the mean. Middle Tennessee saw the largest anomaly at 5.42-inches below the 20th century mean, the Cumberland Plateau was next with 3.37-inches below the mean, and East Tennessee was next with 1.79-inches below the mean. January was wetter than the 20th century mean in all four climate divisions, February was close to the mean with West and Middle Tennessee slightly drier and the Cumberland Plateau and East Tennessee slightly wetter. March, April, and May were all close to or slightly below the 20th century mean, except for March in West Tennessee which averaged 2-inches above the mean. June was split with West and Middle Tennessee about 1-inch below the mean for the month and the Cumberland Plateau and East a bit over the mean. July and August saw wetter than mean conditions across the state before the fall drought impacted the state for the remainder of the year, with the only exception being the East Tennessee climate division recording about a half inch above mean precipitation for December.



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

Station data for select airports across the state using automated weather stations shows a similar pattern with warmer than normal temperatures at all airports for the year and each airport, except for Memphis International, recording below normal precipitation.

Station Name	Temperatures (˚F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	%Norm
Memphis	74.6	55.8	65.2	**+1.8**	102	8/26	23	12/20	55.73	**+0.79**	**101%**
Jackson	72.9	49.8	61.3	**+1.3**	99	8/26	17	1219	45.00	**-8.93**	**83%**
Clarksville*	*73.3*	*46.8*	*62.2*	***+3.8***	100	6/30	18	2/4	42.36	**-4.85**	**90%**
Nashville	73.7	52.3	63.0	**+2.2**	100	8/25	19	2/4	39.06	**-11.45**	**77%**
Chattanooga	74.4	53.2	63.8	**+1.9**	99	8/25	23	11/29	47.24	**-7.76**	**86%**
Crossville	67.1	46.8	57.0	**+1.7**	90	8/25	14	3/20	50.25	**-7.10**	**88%**
Knoxville	71.7	51.0	61.3	**+1.8**	94	8/27	21	11/29	47.51	**-4.42**	**91%**
Bristol	70.5	46.5	58.5	**+1.9**	95	7/27	15	11/29	38.87	**-5.10**	**88%**

Departures and %Norm Key: **Warmer than Normal**, **Cooler than Normal**; **Wetter than Normal**, **Drier than Normal**
Departures and percent of normal calculated using the 1991-2020 30-year climate normals.

**Note: Clarksville was missing 15 days of temperature data (From November 26 to December 7, so the average max, min and mean temperatures as well as the departure from normal listed in the table above are likely higher than in reality since all missing days were in the cooler season.*

Hottest Stations (highest maximum temperature)

Station Name	Station Type	Highest Temperature (F)	Date
TENNESSEE RIDGE	COOP	103	08-25
MEMPHIS INTERNATIONAL AP	WBAN	102	08-26
MEMPHIS WFO	WBAN	102	08-26
CLARKSVILLE WWTP	COOP	101	06-30
JACKSON EXP STA	COOP	100	08-26
CLARKSVILLE NO.2	COOP	100	07-01
NASHVILLE BERRY FIELD	COOP	100	08-26
CAMDEN TOWER TENNESSEE	RAWS	100	06-30
CLARKSVILLE OUTLAW AP	WBAN	100	06-30
NASHVILLE INTL AP	WBAN	100	08-25

Coldest Stations (lowest minimum temperature)

Station Name	Station Type	Lowest Temperature (F)	Date
MT LECONTE	COOP	1	03-20
PICKETT STATE PARK	COOP	7	03-20
ROAN MOUNTAIN 3SW	COOP	8	01-16
NEWFOUND GAP	COOP	8	03-20
LEWISBURG EXP STA	COOP	10	01-22
GAINESBORO	COOP	11	11-29
MOUNTAIN CITY 2	COOP	11	11-29
BIG SOUTH TENNESSEE	RAWS	11	03-20
KINGSPORT	COOP	12	01-26
COALMONT	COOP	12	03-21
CROSSVILLE AREA OFFICE	RAWS	12	03-20

Three stations tied for the 9th coldest temperature (12°F).

Warmest Stations (highest mean temperatures)

Station Name	Station Type	Mean Temperature (F)
MEMPHIS INTERNATIONAL AP	WBAN	65.2
SHILOH NMP TENNESSEE	RAWS	64.8
LEWISBURG TOWER TENNESSEE	RAWS	63.8
CHATTANOOGA AP	WBAN	63.8
SAVANNAH 6 SW	COOP	63.6
CAMDEN TOWER TENNESSEE	RAWS	63.4
MEMPHIS WFO	WBAN	63.4
SELMER	COOP	63.2
ALAMO 1 N	COOP	63.1
NASHVILLE INTL AP	WBAN	63

Coolest Stations (lowest mean temperatures)

Station Name	Station Type	Mean Temperature (F)
MT LECONTE	COOP	43.7
NEWFOUND GAP	COOP	50.5
ROAN MOUNTAIN 3SW	COOP	52.6
MOUNTAIN CITY 2	COOP	54.1
COALMONT	COOP	55.9
CROSSVILLE 7 NW	WBAN	56
CHEROKEE TENNESSEE	RAWS	56.2
ONEIDA	COOP	56.3
GATLINBURG 2 SW	COOP	56.4
TOWNSEND 5S	COOP	56.5

Wettest Stations (highest precipitation totals):

Station Name	Station Type	Total Precipitation (in)
MT LECONTE	COOP	79.78
NEWFOUND GAP	COOP	73.04
SEWANEE	COOP	68.91
BENTON 2.3 ESE	CoCoRaHS	66.83
ATOKA 3.2 ESE	CoCoRaHS	64.35
WAYNESBORO 7.3 N	CoCoRaHS	62.6
PARSONS WATER PLANT	COOP	61.79
BEERSHEBA SPRINGS 2.1 ENE	CoCoRaHS	61.39
COALMONT	COOP	61.09
MONTEAGLE	WBAN	60.94

Driest Stations (lowest precipitation totals):

Station Name	Station Type	Total Precipitation (in)
CLEVELAND 1.2 W	CoCoRaHS	31.5
NASHVILLE 7.6 WSW	CoCoRaHS	32.38
CHEATHAM LOCK & DAM	COOP	35.18
MORRISTOWN RADIO WCRK	COOP	35.83
SODDY DAISY-MOWBRAY MTN	COOP	36.43
LAWRENCEBURG FILT PLANT	COOP	36.45
FAIRVIEW 1.3 WNW	CoCoRaHS	36.97
OLD HICKORY 1.6 SSE	CoCoRaHS	37.33
LEBANON 3.7 ENE	CoCoRaHS	38.14
NASHVILLE BERRY FIELD	COOP	38.16

Each of these stations, except Nashville Berry Field, had at least 1 day without reporting, so actual precipitation totals might be higher. But all stations reported at least 90% of the days of the year.

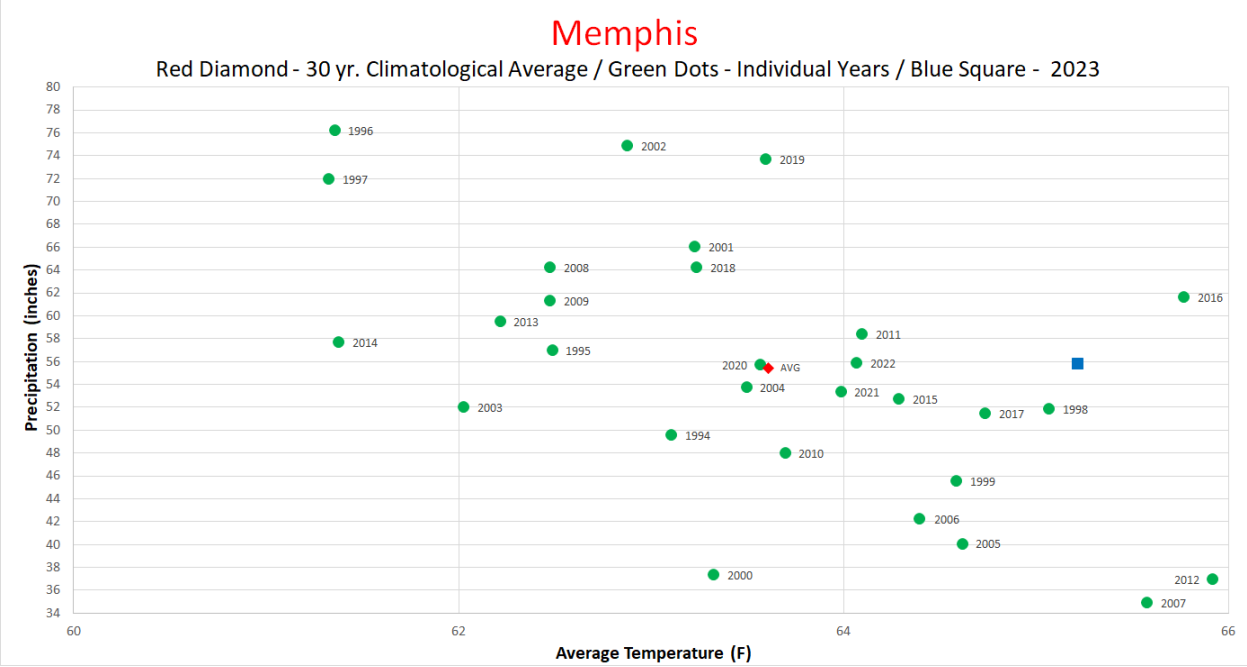
Snowiest Stations (highest snowfall accumulations):

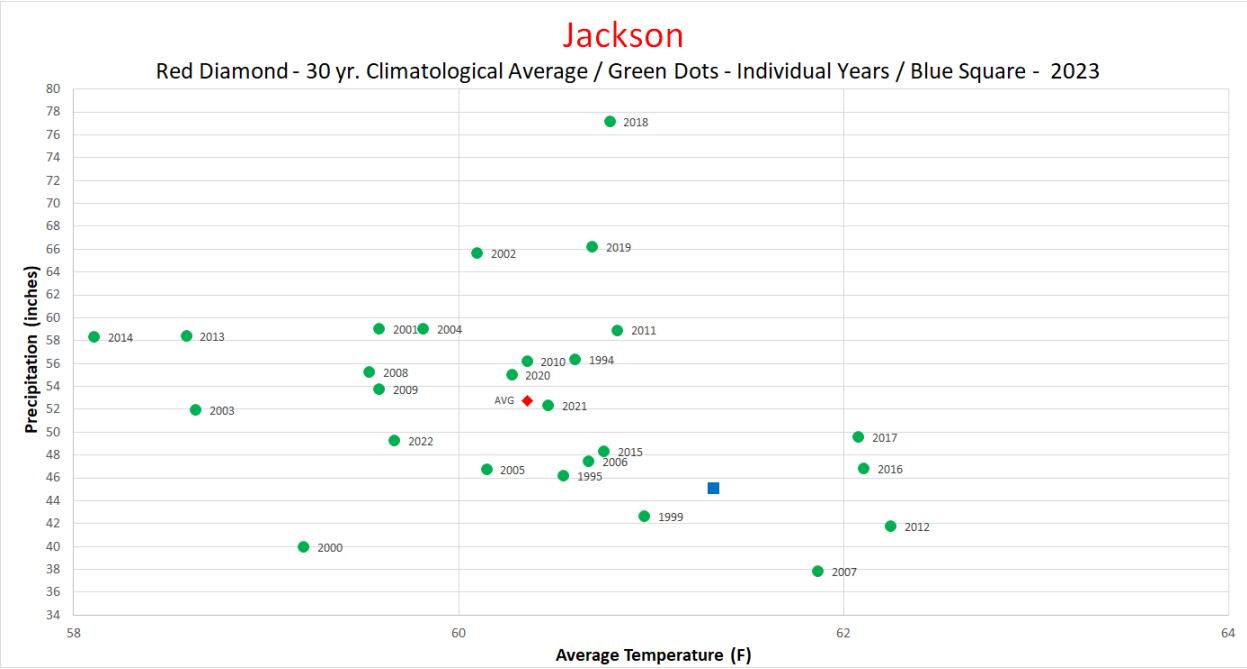
Station Name	Station Type	Total Snowfall (in)
MT LECONTE	COOP	53.1
NEWFOUND GAP	COOP	17.3
PIKEVILLE 7.5 SW	CoCoRaHS	9.1
MOUNTAIN CITY 2	COOP	4.6
ROAN MOUNTAIN 3SW	COOP	4
ROAN MOUNTAIN 7.1 W	CoCoRaHS	3.9
KYLES FORD 1.0 N	CoCoRaHS	2.9
SEWANEE	COOP	2.7
JAMESTOWN 3.1 SE	CoCoRaHS	2.5
JAMESTOWN 12.9 S	CoCoRaHS	1.9
MONTEAGLE	WBAN	1.9

Two stations tied for the 10th highest snowfall accumulation (1.9").

Year in Comparison

Comparing the total precipitation and mean temperature for 2023 to the conditions over the past thirty years at selected airports across the state, we can also see that 2023 was an outlier year for mean temperatures. Of the past 30 years, 2023 was the warmest for the Nashville airport, 2nd warmest for the Bristol/Tri-Cities airport, 3rd warmest for Chattanooga airport, 4th warmest for the Memphis airport, 5th warmest for the Knoxville airport, and 6th warmest for the Jackson airport. Comparing 2023 mean temperatures with the longer-term weather records for each of these cities shows similar trends. It was the warmest year in Nashville's 149-year weather history, the 2nd warmest year for the Tri-Cities' 76-year weather history, the 3rd warmest year in Chattanooga's 145-year history, 4th warmest year in Memphis' 146-year history, and tied for the 6th warmest year in Knoxville's 152-year weather history. Only Jackson's 2023 mean temperature didn't make the top-10 warmest years in the station's 72-year weather history. Precipitation was more mixed, with the Memphis, Knoxville, and Tri-Cities airports recording near average precipitation in 2023, and while the Chattanooga airport had below average rainfall it was not a top-5 driest year of the past thirty years. It was the 5th driest year of the past thirty years at the Jackson airport, and 2023 was the 2nd driest year of the past thirty years for the Nashville airport. However, none of these airports had a top-10 driest year when looking at the longer weather history for each city.




Jackson
Red Diamond - 30 yr. Climatological Average / Green Dots - Individual Years / Blue Square - 2023
Precipitation (inches)
Average Temperature (F)
AVG
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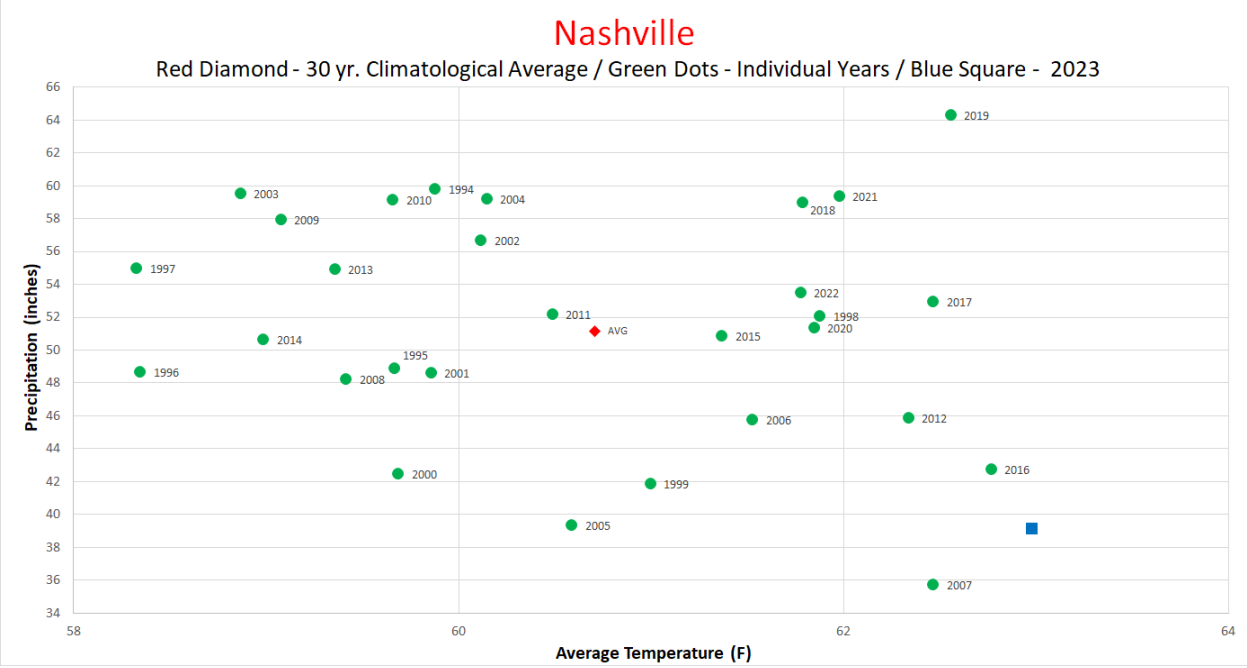
Nashville
Red Diamond - 30 yr. Climatological Average / Green Dots - Individual Years / Blue Square - 2023
Precipitation (inches)
Average Temperature (F)
AVG
2019
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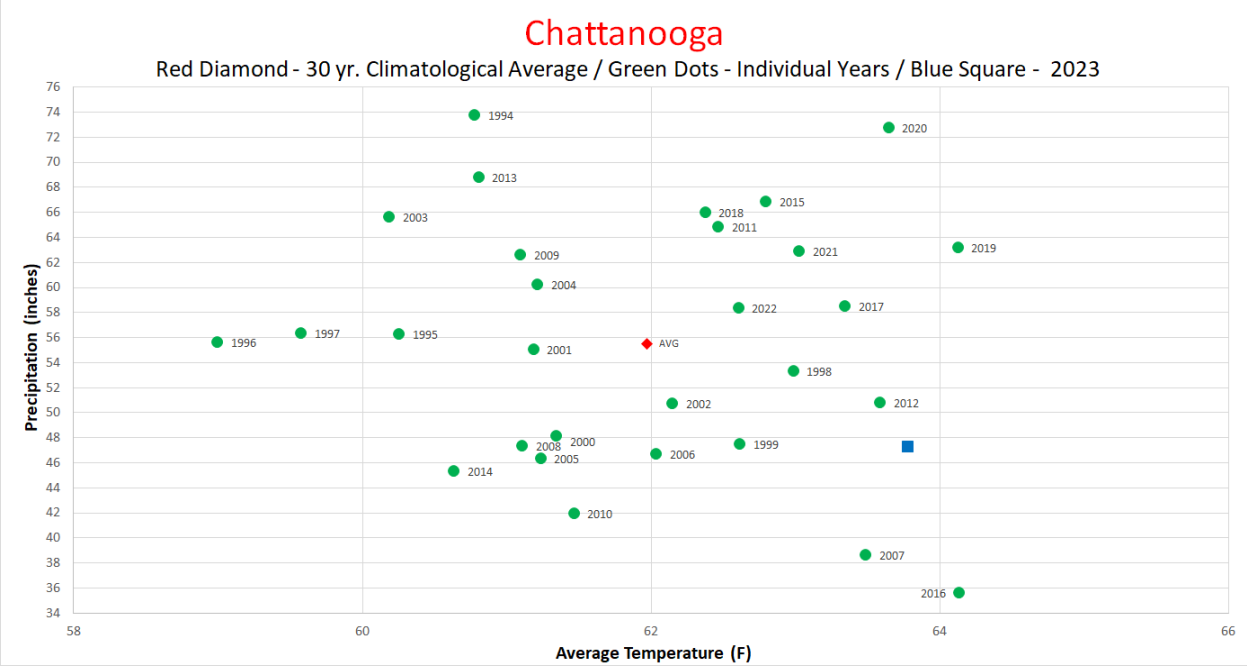
Chattanooga
Red Diamond - 30 yr. Climatological Average / Green Dots - Individual Years / Blue Square - 2023
Precipitation (inches)
Average Temperature (F)
AVG
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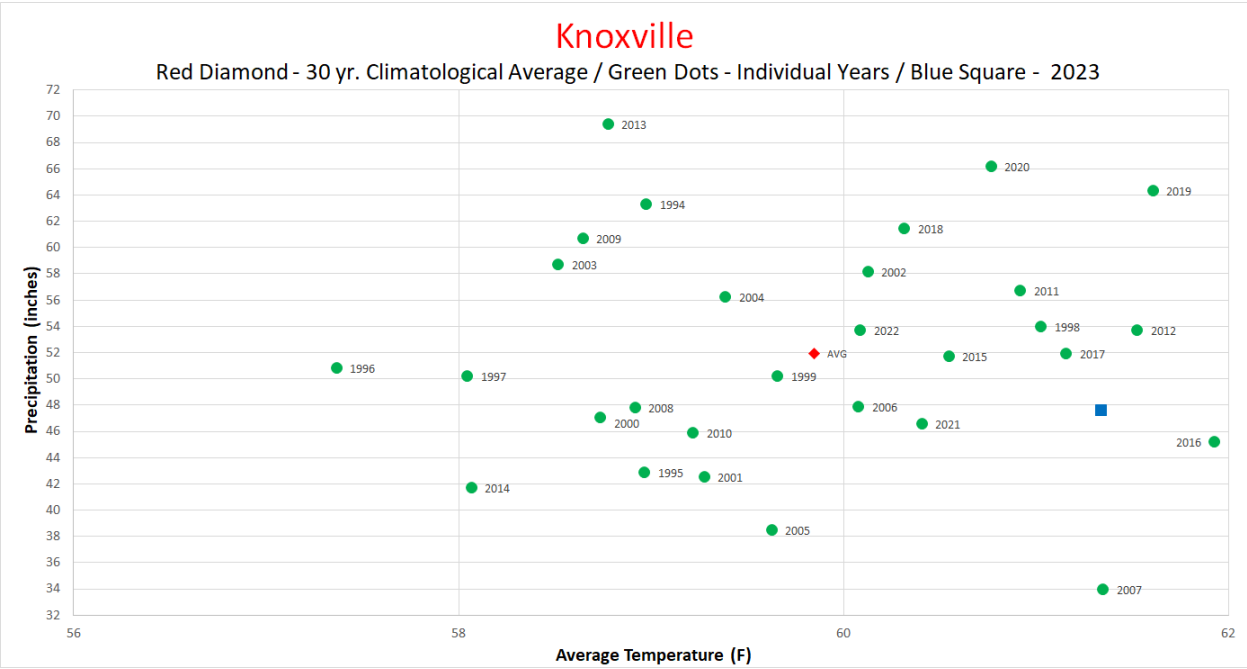
Knoxville
Red Diamond - 30 yr. Climatological Average / Green Dots - Individual Years / Blue Square - 2023
Precipitation (inches)
Average Temperature (F)
AVG
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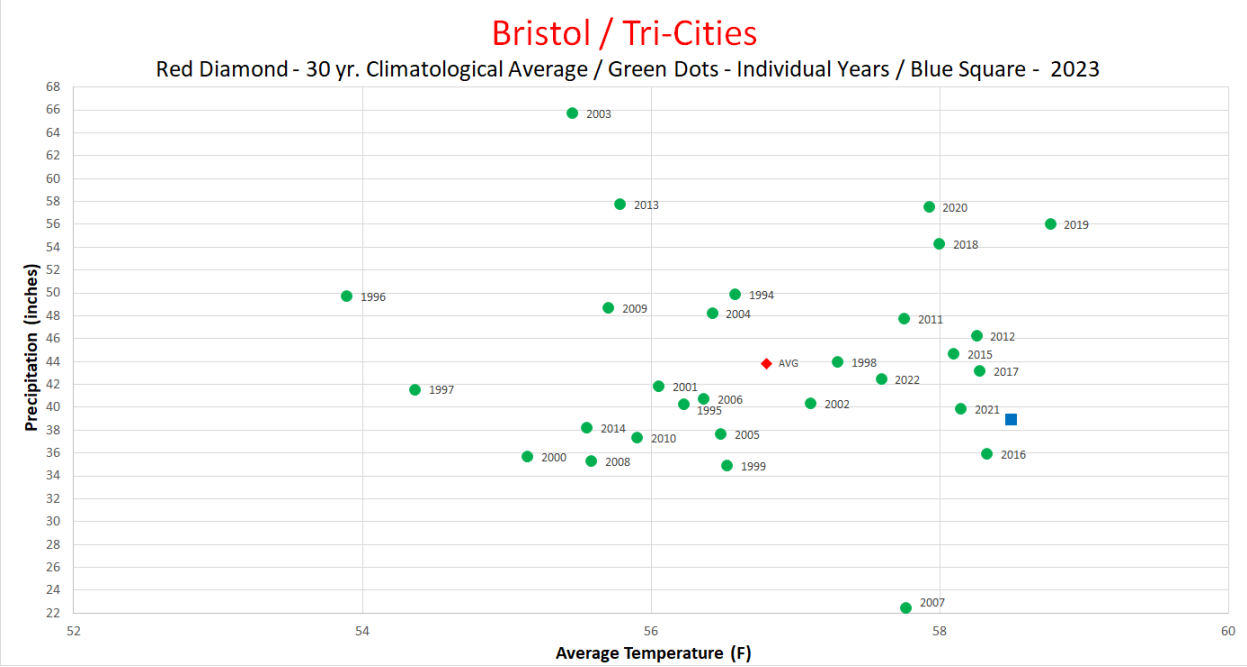
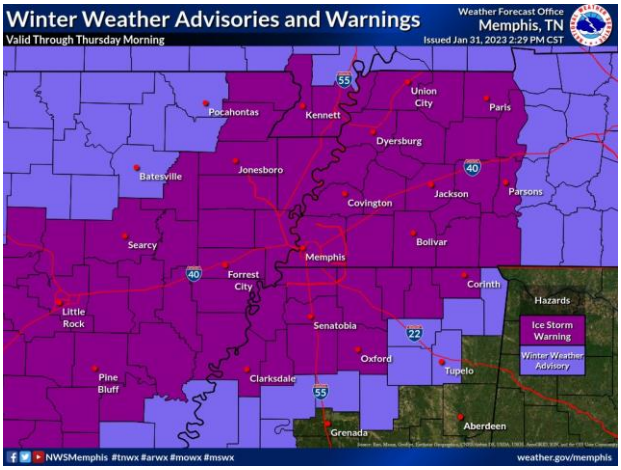


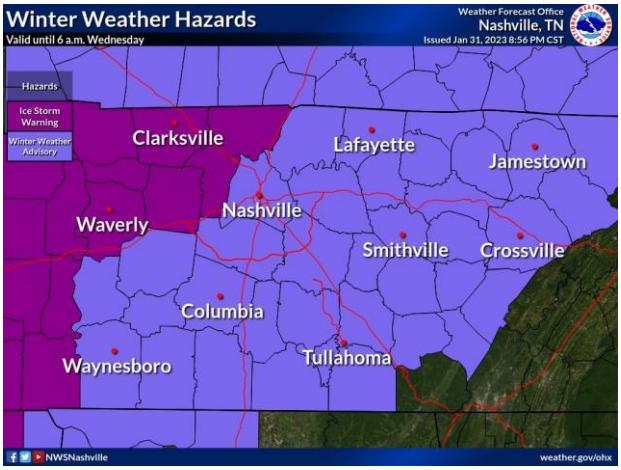
Major Weather and Climate Stories of 2023:

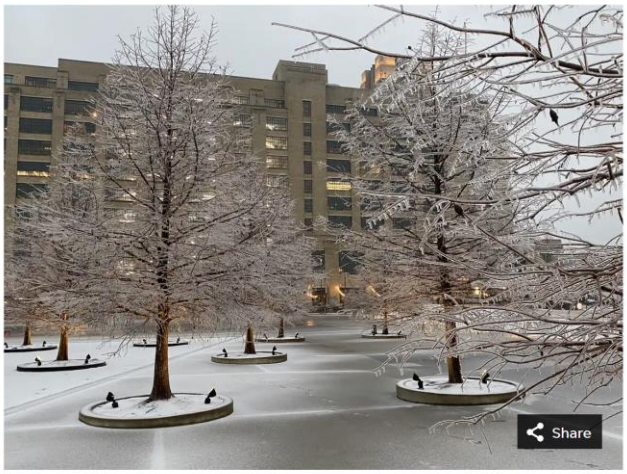
Tennessee had its share of extreme weather events in 2023, with ice storms, record-setting heat, deadly severe weather, flash flooding, and extreme drought conditions. In the sections below the major weather and climate stories for each month of 2023 are recapped.

January:

Despite an overall warmer than normal pattern across Tennessee in January, there were a few cool spells sending temperatures into the teens or twenties for most weather stations across the state. One of these cold spells overlapped with several rounds of precipitation moving through the region and produced freezing rain, sleet, and some snow in the last days of January through the first of February. This prompted ice storm warnings and winter weather advisories to be issued for West Tennessee, Middle Tennessee, and most of the Cumberland Plateau. An ice storm warning was issued for all counties in West Tennessee, and northwestern counties of Middle Tennessee on January 31. And reports of 0.1-0.2" of ice accumulation were common throughout West Tennessee. Trenton (Gibson County) reported the highest ice accumulation, with 0.42" of ice from January 30-February 2.



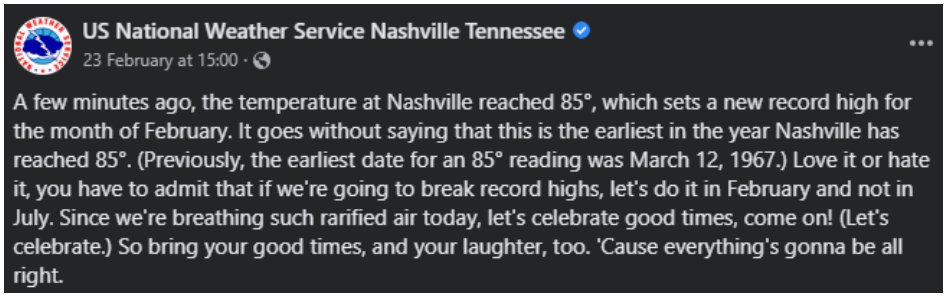




Snow and ice cover Memphis and the Mid-South in the early evening on Tuesday, Jan. 31, 2023. Slush, ice and snow accumulate at Crosstown Concourse
RAY PADILLA

February:

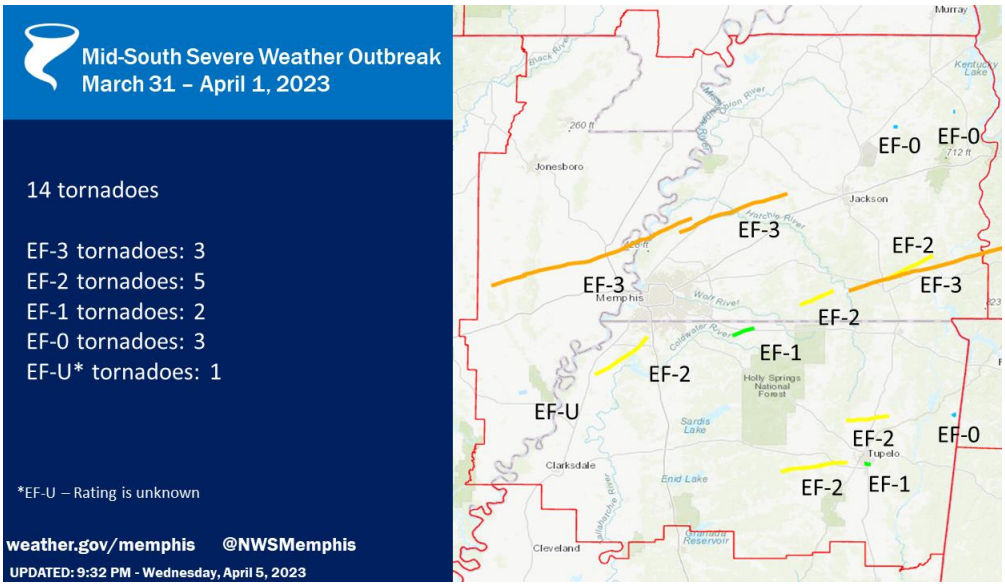
February 2023 brought record-setting warmth across the state, particularly in the last week of the month when the mean temperature ranged from 9 to 15 degrees above normal. Looking at stations with at least a 30-year weather history there were 66 broken and 30 tied daily records for warmest high temperatures set this month across Tennessee, with 21 of the broken records at stations with at least a 100-year weather history. Of those record high temperatures, 10 were warm enough to set the monthly record for February, meaning it was the highest temperature ever recorded in the month of February at that station. All of these stations were found along or east of the I-65 corridor in the middle of the state. Those stations included Nashville and Chattanooga. Nashville also had back-to-back days with a high of 80°F or higher on February 22 and 23, which is the first time this has happened in the month of February. Nashville's high of 85°F on February 23 was also the earliest in the calendar year they had reached that temperature, 17-days earlier than the previous first 85-degree day! 11 more stations were warm enough to tie their monthly record high for February. The warmth also impacted nightly low temperatures, with 68 broken and 11 tied daily records for warmest low temperature recorded across the state in February, with 21 of the broken records at stations with at least a 100-year weather history. Of the 68 broken daily records, 7 broke and 7 more tied their monthly record for the warmest low temperature ever recorded at that station during the month of February.



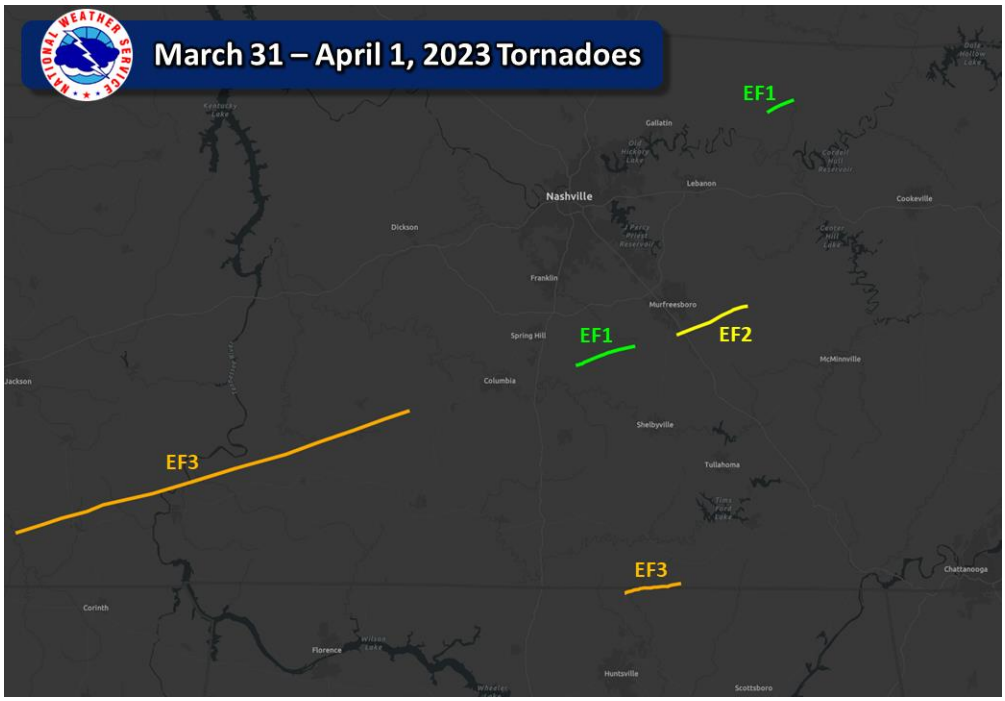
March:

A major severe storm and tornado outbreak impacted Tennessee and surrounding areas from March 31 – April 1 and caused 13 fatalities and several dozen injuries in Tennessee. This was the largest tornado outbreak to impact the U.S. since December 2021, and tornadoes were reported in Tennessee, Arkansas, Mississippi, Alabama, Georgia, as well as the midwestern states of Iowa, Wisconsin, Illinois, Indiana, and Ohio. Early in the afternoon of March 31, the NOAA Storm Prediction Center issued a rare High-Risk outlook for severe storms, this was the first High-Risk outlook issued since March of 2021. Tornadoes, severe thunderstorm winds, and large hail were reported across West and Middle Tennessee late on

March 31 into the morning hours of April 1. There were four EF-3 tornadoes, three EF-2 tornadoes, two EF-1 tornadoes, and two EF-0 tornadoes impacting Tennessee with this system along with 36 reports of severe wind damage and 9 reports of severe hail (1-inch in diameter or larger). The Covington tornado in West Tennessee was an EF-3 tornado that was on the ground from 5:58pm until 6:29pm (CDT) on March 31; this tornado killed one person and injured 28 along its 39.5-mile path going through parts of Tipton, Lauderdale, and Haywood counties. The second killer tornado occurred farther east in West Tennesee and continued into Middle Tennessee, it started at 11:04pm (CDT) on March 31 and ended at 12:37am (CDT) on April 1, with an 85.9-mile path through Hardeman, McNairy, Hardin, Wayne, and Lewis counties. This tornado killed 9 people and injured 23 others. A third EF-3 tornado started in Alabama and crossed into southern Middle Tennessee in Lincoln County from 3:09-3:25am (CDT) on April 1, and was responisble for 1 death and 5 injuries.



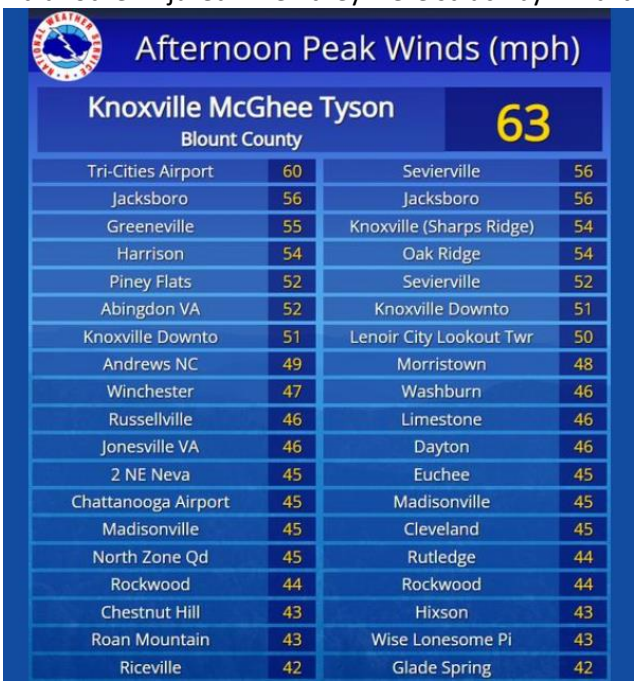
Tornado tracks with intensity from the Memphis NWS Office.



Tornado tracks with intensity from the Nashville NWS Office.

April:

As the same storm system pushed farther east through Tennessee it continued to produce strong winds, even after the squall line. After these storms cleared the state a strong pressure gradient produced sustained winds and gusts of 40-60 miles per hour across the state. Wind Advisories and High Wind Warnings were issued by National Weather Service offices in Tennessee due to these strong sustained winds and gusts. These non-thunderstorm winds produced damage including damaged roofs and siding on houses, barns, and greenhouses, downed trees, and power outages. More than 16,000 people were impacted by power outages caused by these winds, and Knoxville had several traffic lights blown down or without power leading to traffic jams in parts of the city. Sadly, in Roane County these winds proved fatal as one person was killed and another injured when they were struck by wind-blown debris.



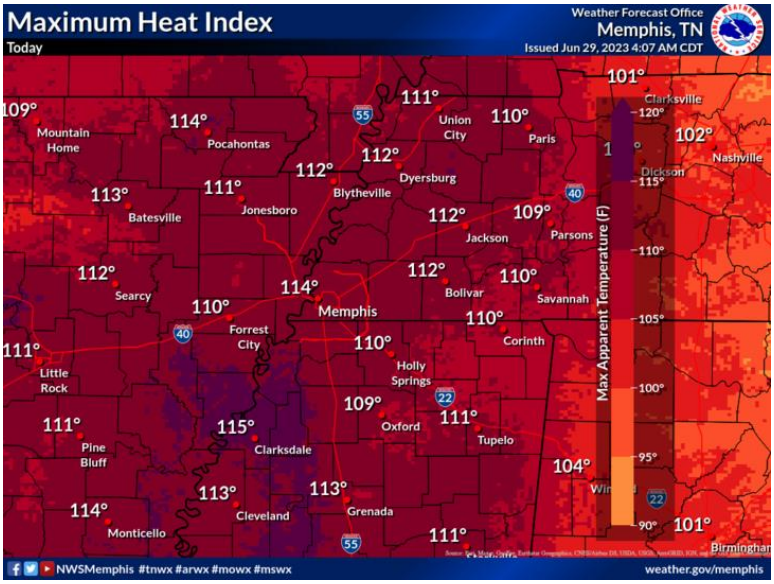
Peak winds recorded on April 1 in the Morristown NWS Office county warning area.

May:

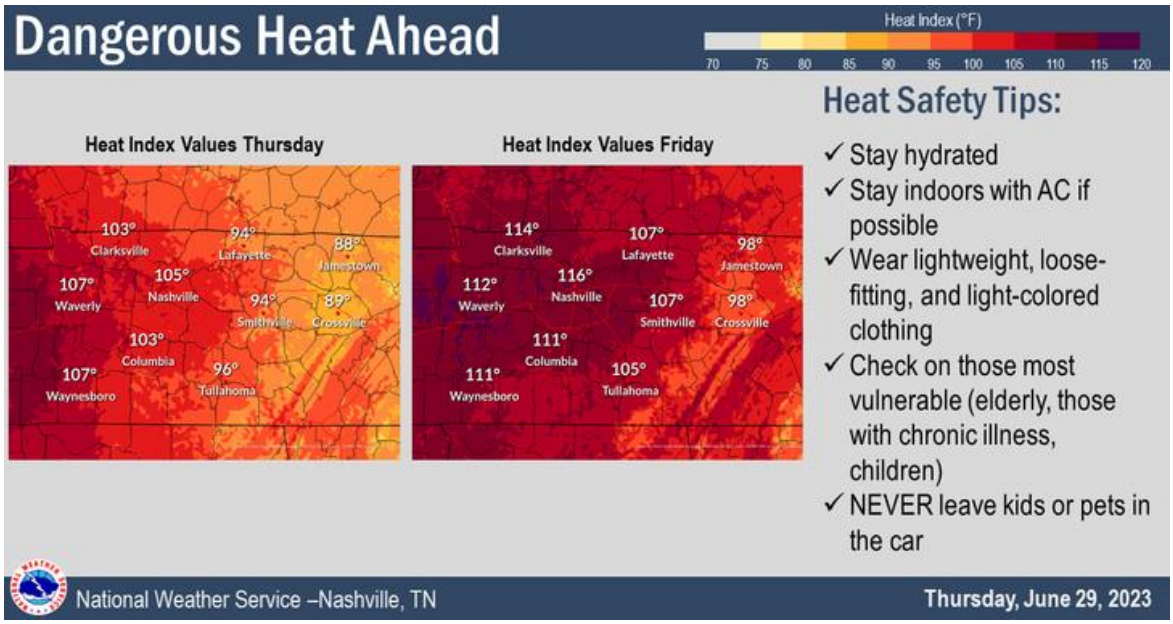
Thankfully may was a much quieter month, with only a few scattered severe thunderstorm reports, and some poor air quality due to smoke from wildfires in western Canada.

June:

Wildfire smoke from eastern Canada also caused air quality issues across the eastern U.S. including in Tennessee, but the main story of June was a strong heat wave in the final days of the month that brought dangerous heat and humidity to the state. Heat index values topped 110°F during this time for most areas in West and Middle Tennessee, and over 100°F for most areas in East Tennessee. In addition to the high temperatures and heat indexes during the day, overnight low temperatures were also high. The Memphis airport weather station set a record warm low temperature of 81°F on June 30, this was also a monthly record for the warmest low temperature record during the month of June at the station. Looking at the longer-term weather history for Memphis, the low of 81°F on the 30th tied the record for warmest low temperature on this date, with the last time it was recorded in the city being in 1882.



Heat Index Forecast from the NWS Memphis Office for June 29, 2023.



Heat index forecasts for June 29 and 30 from the NWS Nashville Office.

July:

July saw the return of severe storms, with 168 reports of severe thunderstorm wind damage across the state. Several of these storms also produced very high rainfall totals and flash flooding occurred in various counties across the state during different times.

Flooding in Germantown, TN after intense rainfall on July 4, 2023. Source: ABC-24, localmemphis.com.

Roaring water in Brush Creek at Founders Park in Johnson City, TN on the morning of July 14. Source: Facebook, Ingrid Luffman.

Cleanup of the rockslide on the Spur in Sevier County. Source: Facebook post from Sevier County Emergency Management Agency.

August:

Flooding continued to be a major story in August, as a band of storms trained over areas in northwestern Tennessee causing 6-10 inches of rain in part of Obion, Weakley, and Gibson counties on August 4, 2023. One person in Union City reported a rainfall total of 11.49 inches of rainfall with this event. A flash flood emergency was issued by the National Weather Service in the area, several neighborhoods had to be evacuated, and many roads were shut down due to flooding including Exit 80A on I-40 in Jackson.

Police respond to flooding in Union City. Image from The Messenger – Chris Menees.

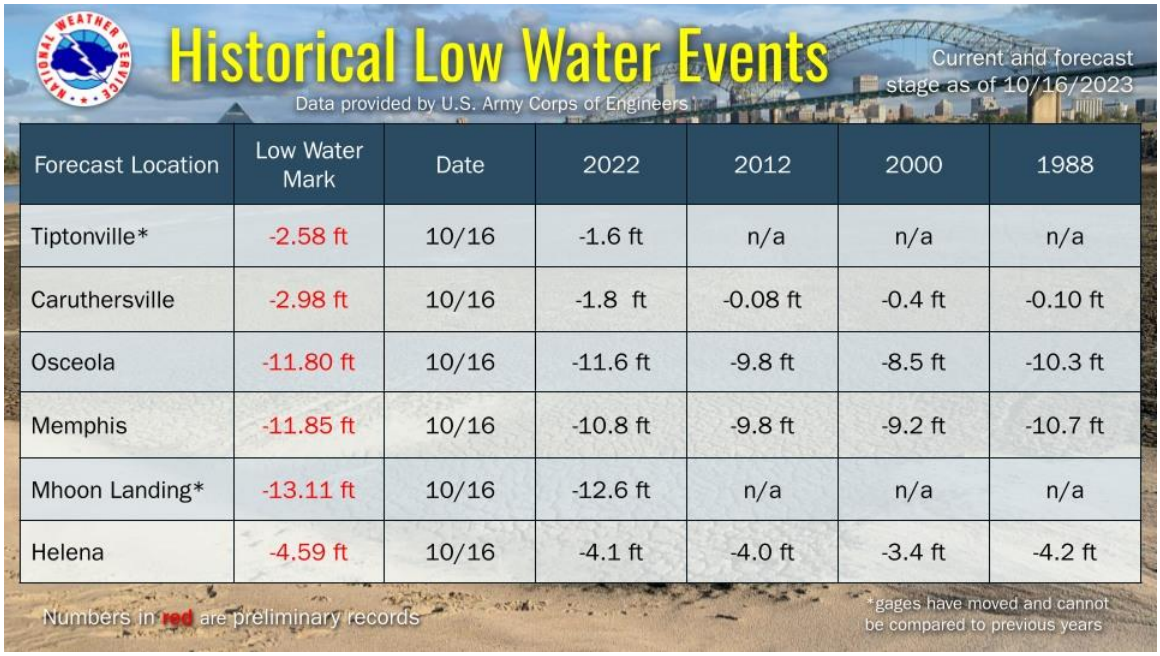
Flooding in Union City on August 4, 2023, image from WREG – Memphis.

September:

After the flooding rains of July and August, dry conditions became a concern for the remainder of 2023 as a flash drought developed when rains all but disappeared in September. Some areas of Tennessee recorded less than 10% of their normal rainfall for the month. In addition to the dry weather, most areas of the state had warmer than normal conditions. The hot, sunny days led to increased evapotranspiration and rapid dry down in plants and near-surface soil moisture. Over the course of the month Tennessee went from being free of drought, with only 0.04% of the state's area in Abnormally Dry (D0) conditions on the U.S. Drought Monitor on September 5th, to 79.10% of the state shown in Abnormally Dry (D0) or Moderate Drought (D1) on the U.S. Drought monitor for October 3.

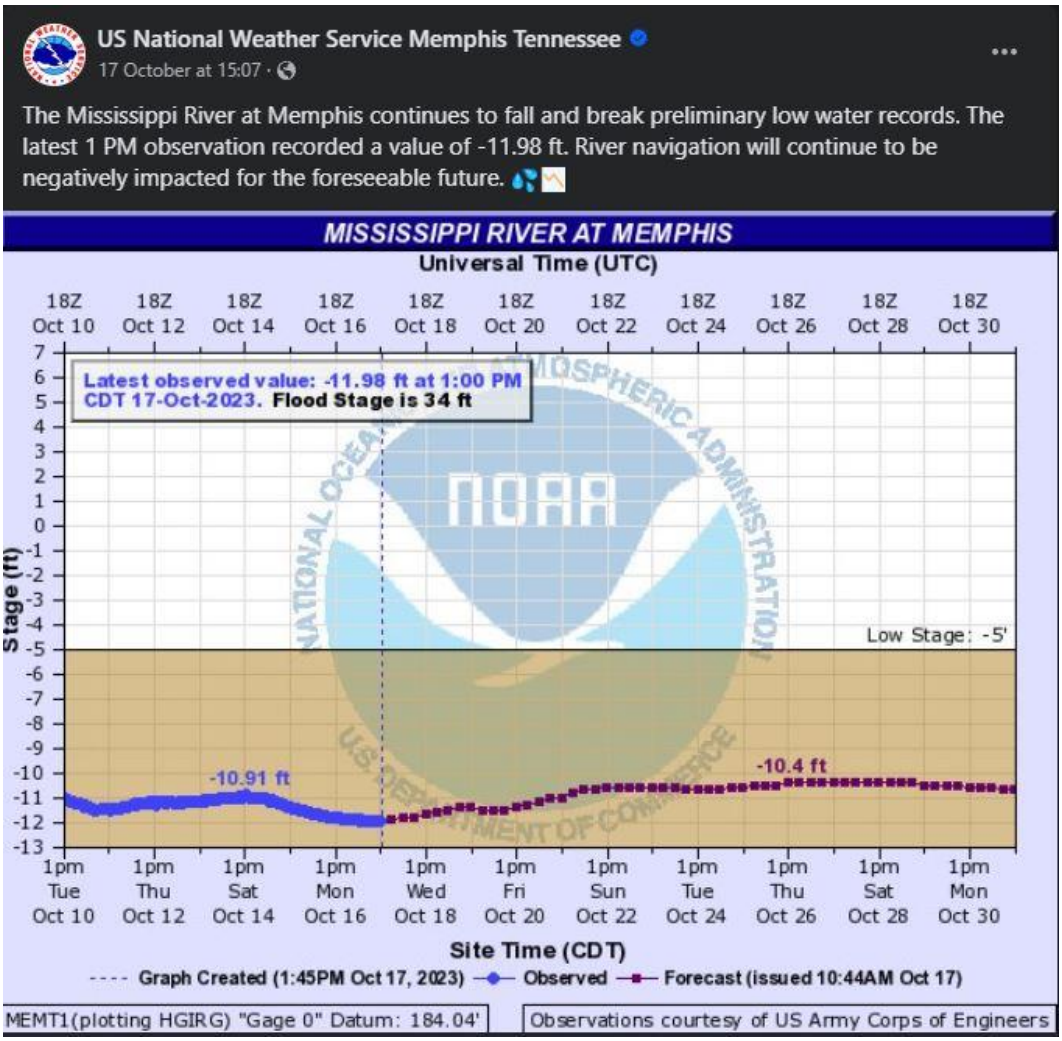
October:

Dry conditions continued into October, with most areas of the state recording less than 50% of their normal rainfall for the month and several weeks of warmer than normal temperatures. There were a few small brush fires reported during October, and burn bans went into effect in many counties across the state as conditions continued to deteriorate. In addition to drought in Tennessee, drought further upstream in the Mississippi River watershed led to record-low levels on USGS stream gauges on the Mississippi River, surpassing record-low water levels set in 2022 and September 2023.



Forecast Location	Low Water Mark	Date	2022	2012	2000	1988
Tiptonville*	-2.58 ft	10/16	-1.6 ft	n/a	n/a	n/a
Caruthersville	-2.98 ft	10/16	-1.8 ft	-0.08 ft	-0.4 ft	-0.10 ft
Osceola	-11.80 ft	10/16	-11.6 ft	-9.8 ft	-8.5 ft	-10.3 ft
Memphis	-11.85 ft	10/16	-10.8 ft	-9.8 ft	-9.2 ft	-10.7 ft
Mhoon Landing*	-13.11 ft	10/16	-12.6 ft	n/a	n/a	n/a
Helena	-4.59 ft	10/16	-4.1 ft	-4.0 ft	-3.4 ft	-4.2 ft

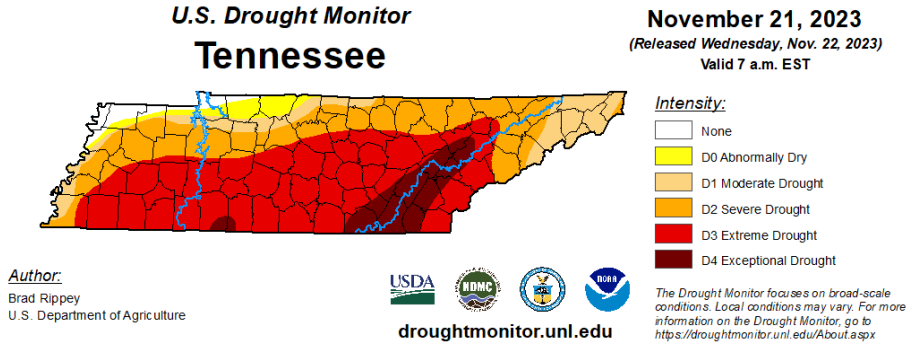
Preliminary Low Water Records at Stream gauges on the Mississippi River from the NWS Memphis Area.



Mississippi River at Memphis Stream Gauge observed a new preliminary record low of -11.98ft on October 17. Image from NWS Memphis Facebook.

November:

Drought conditions continued to expand and reach the highest level of Exceptional Drought (D4) on the U.S. Drought Monitor in parts of Tennessee during November. The November 21 release of the U.S. Drought Monitor showed 9.04% of the state in Exceptional Drought (D4) mostly in the southern valley areas of East Tennessee, stretching from the Chattanooga to Knoxville areas. There was also a small area of Exceptional Drought in southwest Middle Tennessee at the Alabama border. An additional 46.64% of the state was shown with Extreme Drought (D3), 26.72% of the state was shown with Severe Drought (D2), and 10.71% of the state was shown with Moderate Drought (D1). Just 3.84% of the state was free from drought or abnormally dry conditions, and that area was in the far northwest corner of the state. Rain later in November led to some improvements by the end of November, especially in southern and eastern portions of the state.



There were also several days of high fire weather potential as warm conditions allowed relative humidity levels to drop below 20% and high winds meant that any fires started could spread quickly. There were several small- to medium-sized fires reported across the state during the month, with the largest occurring in Scott County on the Cumberland Plateau. The fire on Arch Mountain in southern Scott County burned over 2,600 acres by November 16, according to the Independent Herald newspaper, with a final size of over 5,000 acres as reported by the National Interagency Fire Center after the fire was extinguished on December 4th. This was by far the largest fire reported in Tennessee this month, but there were numerous other fires that burned into the hundred-acre range, with a total of ~9,000 acres burned in wildland fires this month across the state. Luckily, few structures were impacted by these fires.

Brush fire in Pigeon Forge (Sevier County) on November 16 [image via The News Sentinel], and brush fire in Williamson County on November 20 [image via WSMV].

December:

Drought conditions in East Tennessee improved some in December, but grew and worsened again in Middle and West Tennessee. However, the biggest story of December was the tornado outbreak of December 9 that produced 7 tornadoes, two of which were fatal and led to 7 deaths and 88 weather-related injuries. The Clarksville and Nashville metro areas were especially hard hit by the tornadoes, and the National Weather Service office in Nashville issued a rare Tornado Emergency warning for parts of Davidson, Sumner, and Wilson counties for an EF-2 tornado that started in North Nashville and stayed on the ground through Madison, Hendersonville, and Gallatin.

Damage caused by the tornado in Clarksville, TN. Image via: Mark Zaleski/AP Photo

A large explosion was caused when the tornado hit an NES substation in Madison, TN. Image via: BrandonDavisBD/Twitter