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2022 November - Tennessee Monthly Climate Report

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November 2022 Tennessee State Climate Summary

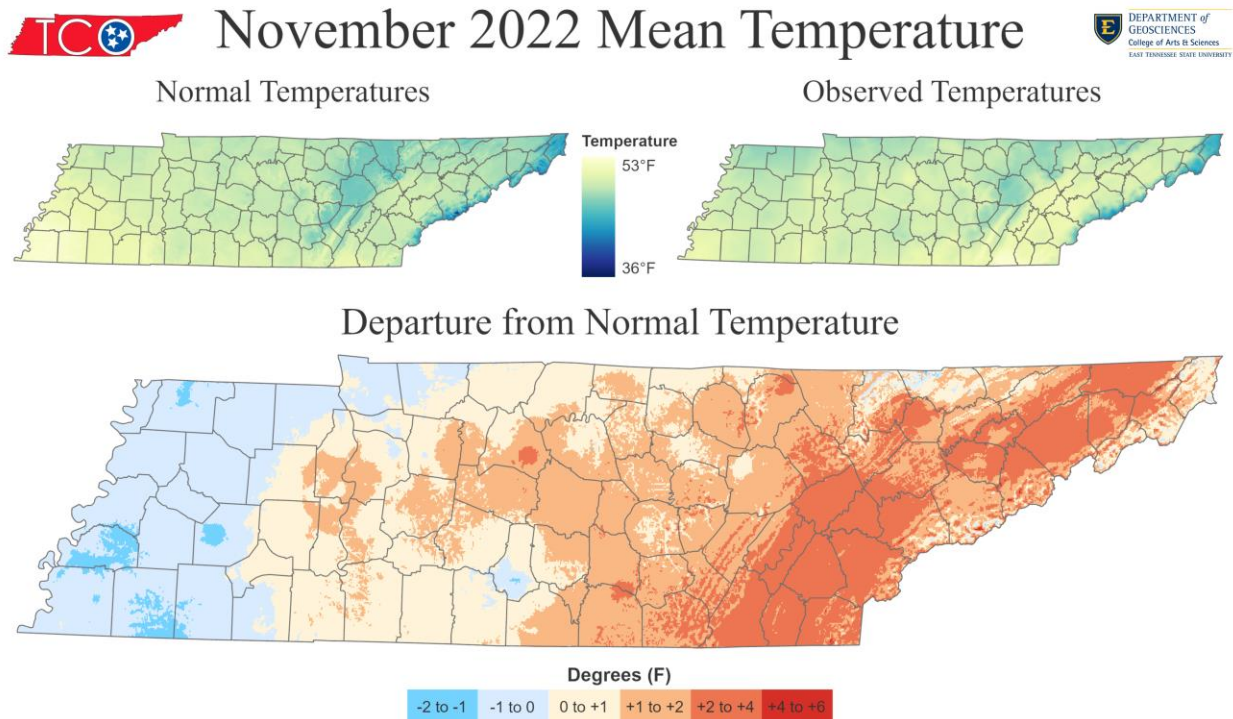
Tennessee Climate Office * East Tennessee State University

Prepared by William Tollefson and Dr. Andrew Joyner

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

Monthly Temperature Summary:

Temperatures across Tennessee in November varied widely, with the coldest lows dipping down into the teens and warmest highs reaching into the 80's at most locations. The mean temperature for the month was warmer than the 1991-2020 30-year climate normals for most areas of East and Middle Tennessee, while most areas of West Tennessee experienced slightly below normal temperatures. The area with the largest departure from normal temperatures was the East Tennessee valley, where mean temperatures for the month were 2-4°F warmer than normal. Fitting in with the roller coaster temperatures there were 23 daily high temperature records set and another 28 tied at weather stations with at least a 30-year reporting history. The Bristol/Tri-Cities Airport recorded a record high temperature for the month of November, reaching 84°F on November 6, which was 2 degrees higher than their previous warmest November high set in 2016. There were also 23 record-warm low temperatures set during the month. On the cold side, there were 28 daily low temperatures set during the month and 26 daily record-cool high temperatures set during the month.



Stations with the highest mean temperature

Station Name	Station Type	Mean Temperature (F)
CHATTANOOGA AP	WBAN	53
SHILOH NMP TENNESSEE	RAWS	52.2
LEWISBURG TOWER TENNESSEE	RAWS	52.1
MEMPHIS INTERNATIONAL AP	WBAN	52.1
INDIAN GRAVE TENNESSEE	RAWS	51.9

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	36.8
NEWFOUND GAP	COOP	42.6
MILAN EXP STN	COOP	43.6
ROAN MOUNTAIN 3SW	COOP	44.2
MOUNTAIN CITY 2	COOP	44.7

Monthly Precipitation Summary:

Rainfall was generally below the 1991-2020 30-year climate normals for November across the state, with a few areas, mostly in Middle Tennessee and southeast Tennessee recording above normal precipitation. During the first half of the month there were a few areas of heavy rain in Middle and East Tennessee, and the final days of November brought some heavy rains to these regions again. West Tennessee missed out on most of this rain with rainfall totals generally less ¼-inch than during any week of November. This led to West Tennessee having the most below-normal rainfall totals with many weather stations in the region recording less than 1-inch of rain for the month. This dry weather pattern led to the expansion of drought conditions through the month.

Despite the dry conditions for most of the state, there were 19 daily records for highest precipitation total set during the month at weather stations with at least a 30-year reporting history, with 4 of those records set at stations with at least a 100-year reporting history.

Some light snowfall did occur during November, with 3 weather stations reporting measurable snowfall (up to ½-inch) and 15 other weather stations reporting a trace of snow (less than 0.1-inch) during the month. Most snowfall was recorded on November 12 or 13.

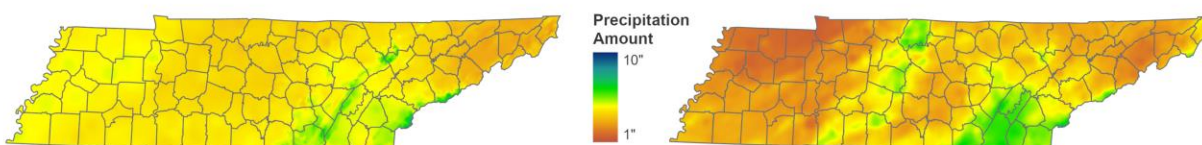


November 2022 Total Precipitation

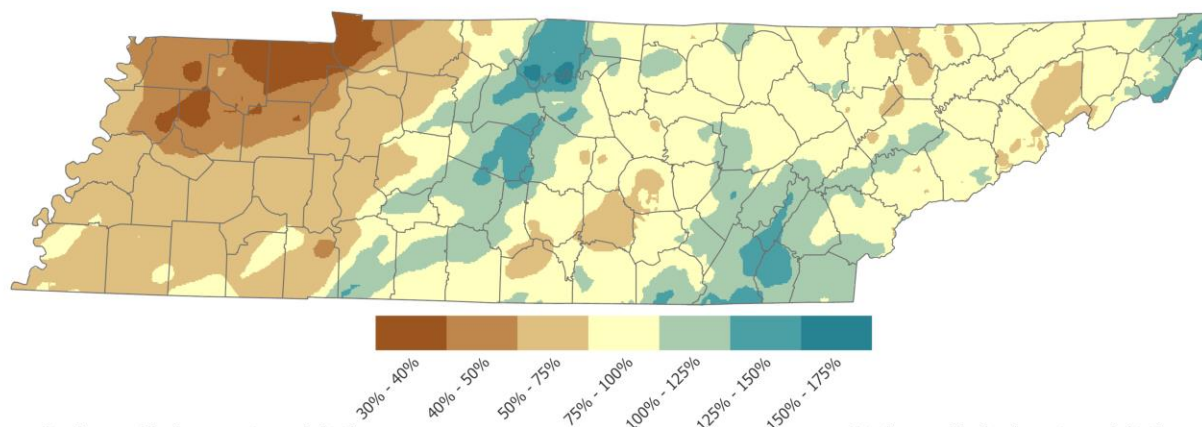


Normal Precipitation

Observed Precipitation



Percent of Normal Precipitation



Stations with the most precipitation

Station Name	Station Type	Total Precipitation (in)
LEBANON 2.7 SSE	CoCoRaHS	7.82
COLUMBIA 3 WNW	COOP	7.15
LEWISBURG 5.1 SW	CoCoRaHS	7.1
CROSSVILLE 4.7 S	CoCoRaHS	6.87
CLARKRANGE 6.0 NE	CoCoRaHS	6.78

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)
DRESDEN	COOP	0.15
ATWOOD 0.8 WSW	CoCoRaHS	0.46
HOLLADAY 4.4 NNE	CoCoRaHS	0.55
WAYNESBORO 4.7 WSW	CoCoRaHS	0.55
MILAN EXP STN	COOP	0.57

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	61.9	42.3	52.1	-0.6	82	11/8	24	11/21	3.62	-1.07	77%
Jackson	61.8	36.4	49.1	-0.2	81	11/8	14	11/21	2.81	-1.52	65%
Clarksville	61.7	37.7	49.7	+1.6	81	11/9	18	11/21	1.69	-2.35	42%
Nashville	62.9	40.8	51.9	+1.6	81	11/9	21	11/21	4.38	+0.52	113%
Chattanooga	64.0	42.1	53.0	+1.8	81	11/8	23	11/21	5.89	+1.09	123%
Crossville	57.7	36.6	47.2	+1.2	77	11/8	18	11/21	4.97	+0.23	105%
Knoxville	61.8	39.9	50.9	+1.9	81	11/5	20	11/21	4.29	+0.08	102%
Bristol	62.0	36.6	49.3	+2.9	84	11/6	18	11/21	2.49	-0.65	79%

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
AMES PLANTATION	COOP	84	9
SAVANNAH 6 SW	COOP	84	9
BOLIVAR WATER WORKS	COOP	84	9
ELIZABETHTON	COOP	84	7
CLARKSVILLE NO.2	COOP	84	10
ROCK ISLAND STATE PARK	COOP	84	3
SHILOH NMP TENNESSEE	RAWS	84	8
BRISTOL AP	WBAN	84	6
JACKSON EXP STA	COOP	83	10
ERWIN 1 W	COOP	83	7
KINGSTON SPRINGS	COOP	83	10
CLARKSVILLE WWTP	COOP	83	8
TENNESSEE RIDGE	COOP	83	10
DECATURVILLE	COOP	83	9

6 stations tied for the 9th hottest temperature (83°F)

Coldest Stations (lowest minimum temperature)

Station Name	Station Type	Lowest Temperature (F)	Date
MT LECONTE	COOP	8	18
GAINESBORO	COOP	9	21
HOHENWALD	COOP	13	21
GLADEVILLE	COOP	13	22
PULASKI WASTEWATER PLANT	COOP	14	22
MURFREESBORO 5 N	COOP	14	22
TAZEWELL	COOP	14	21
ONEIDA	COOP	14	22
BETHPAGE 1 S	COOP	14	21
DECATURVILLE	COOP	14	21
NEWFOUND GAP	COOP	14	18
CROSSVILLE AREA OFFICE TENNESS	RAWS	14	21
JACKSON MCKELLAR- SIPES AP	WBAN	14	21

Nine stations tied for the 5th coldest temperature (14°F)

Warmest Stations (highest mean temperatures)

Station Name	Station Type	Mean Temperature (F)
CHATTANOOGA AP	WBAN	53
SHILOH NMP TENNESSEE	RAWS	52.2
LEWISBURG TOWER TENNESSEE	RAWS	52.1
MEMPHIS INTERNATIONAL AP	WBAN	52.1
INDIAN GRAVE TENNESSEE	RAWS	51.9
LENOIR CITY TENNESSEE	RAWS	51.9
NASHVILLE INTL AP	WBAN	51.9
NASHVILLE BERRY FIELD	COOP	51.5
CAMDEN TOWER TENNESSEE	RAWS	51.3
CHUCK SWAN SF TENNESSEE	RAWS	51.3

Coollest Stations (lowest mean temperatures)

Station Name	Station Type	Mean Temperature (F)
MT LECONTE	COOP	36.8
NEWFOUND GAP	COOP	42.6
MILAN EXP STN	COOP	43.6
ROAN MOUNTAIN 3SW	COOP	44.2
MOUNTAIN CITY 2	COOP	44.7
ONEIDA	COOP	45
PULASKI WASTEWATER PLANT	COOP	45.6
CROSSVILLE EXP STN	COOP	45.9
HOHENWALD	COOP	46.1
CROSSVILLE 7 NW	WBAN	46.2

Wettest Stations (highest precipitation totals):

Station Name	Station Type	Total Precipitation (in)
CLEVELAND FILTER PLANT	COOP	6.7
DAYTON 2SE	COOP	6.62
NEWFOUND GAP	COOP	6.08
DECATUR 7NE	COOP	6
BETHPAGE 1 S	COOP	5.96
CHATTANOOGA AP	WBAN	5.89
LOOKOUT MTN-POINT PARK	COOP	5.88
WHITE HOUSE	COOP	5.74
ATHENS	COOP	5.5
GLADEVILLE	COOP	5.5
MT LECONTE	COOP	5.5

Three stations tied for the 9th highest precipitation (5.5")

Driest Stations (lowest precipitation totals):

Station Name	Station Type	Total Precipitation (in)
NASHVILLE 4.1 SSW	CoCoRaHS	0.79
DICKSON 5.8 NW	CoCoRaHS	0.9
CENTERTOWN 9.0 WSW	CoCoRaHS	0.94
CLARKSVILLE 5.4 WSW	CoCoRaHS	1.01
DOVER 7.8 NNE	CoCoRaHS	1.02
CLARKSVILLE 3.4 NNW	CoCoRaHS	1.02
DICKSON 12.7 NW	CoCoRaHS	1.07
CAMDEN 0.7 SE	CoCoRaHS	1.09
PARIS 1.5 WSW	CoCoRaHS	1.11
MANCHESTER 2.4 NNW	CoCoRaHS	1.12
WOODBURY 4.0 SE	CoCoRaHS	1.12
CLARKSVILLE WWTP	COOP	1.12

Three stations tied for the 10th lowest precipitation (1.12")

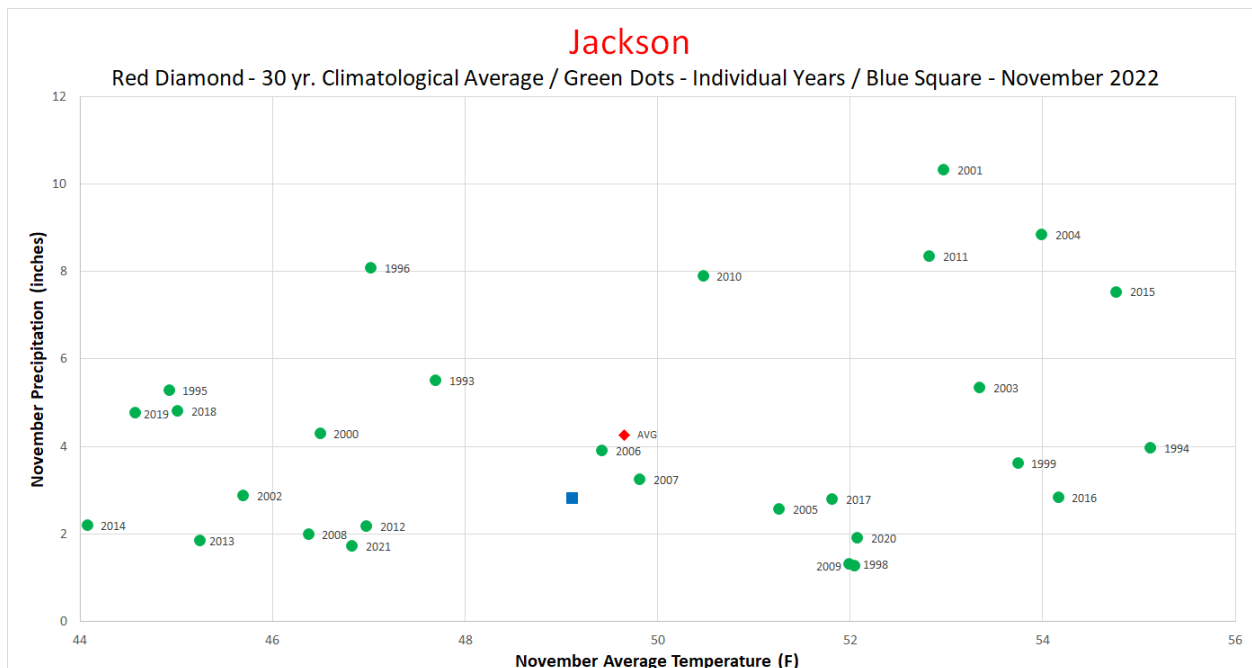
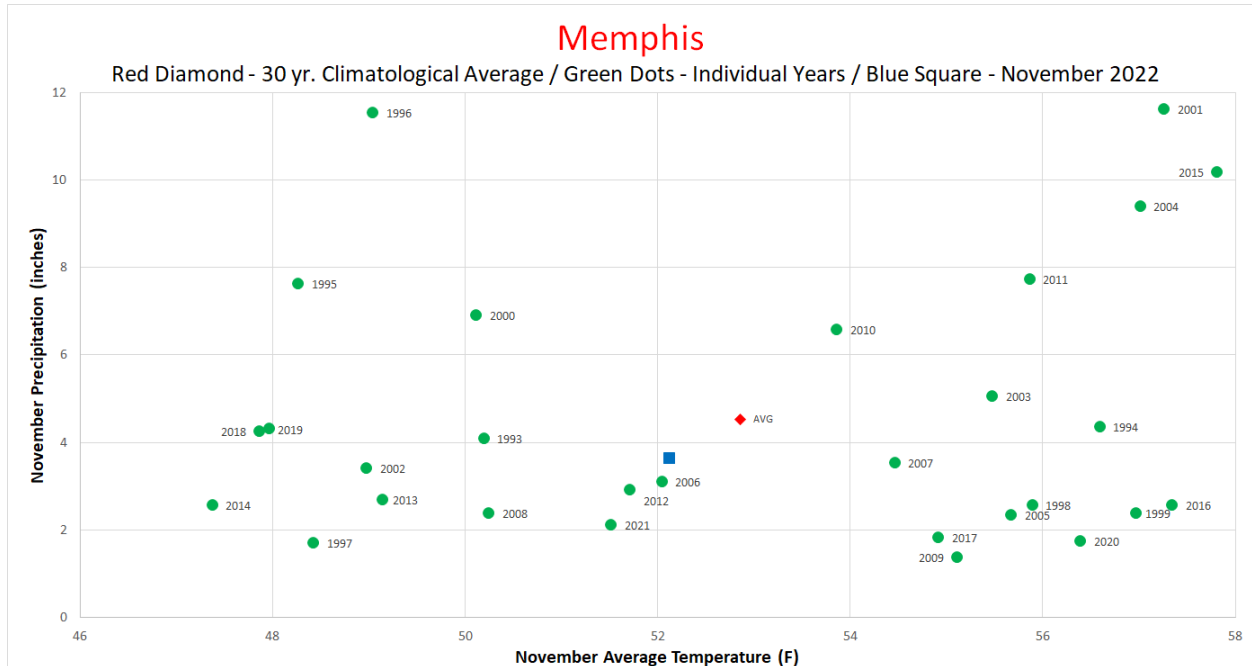
Snowiest Stations (highest snowfall accumulations)

Name	Station Type	Total Snowfall (in)
UNION CITY	COOP	0.5
MT LECONTE	COOP	0.5
MCKENZIE 1.5 SSE	CoCoRaHS	0.2

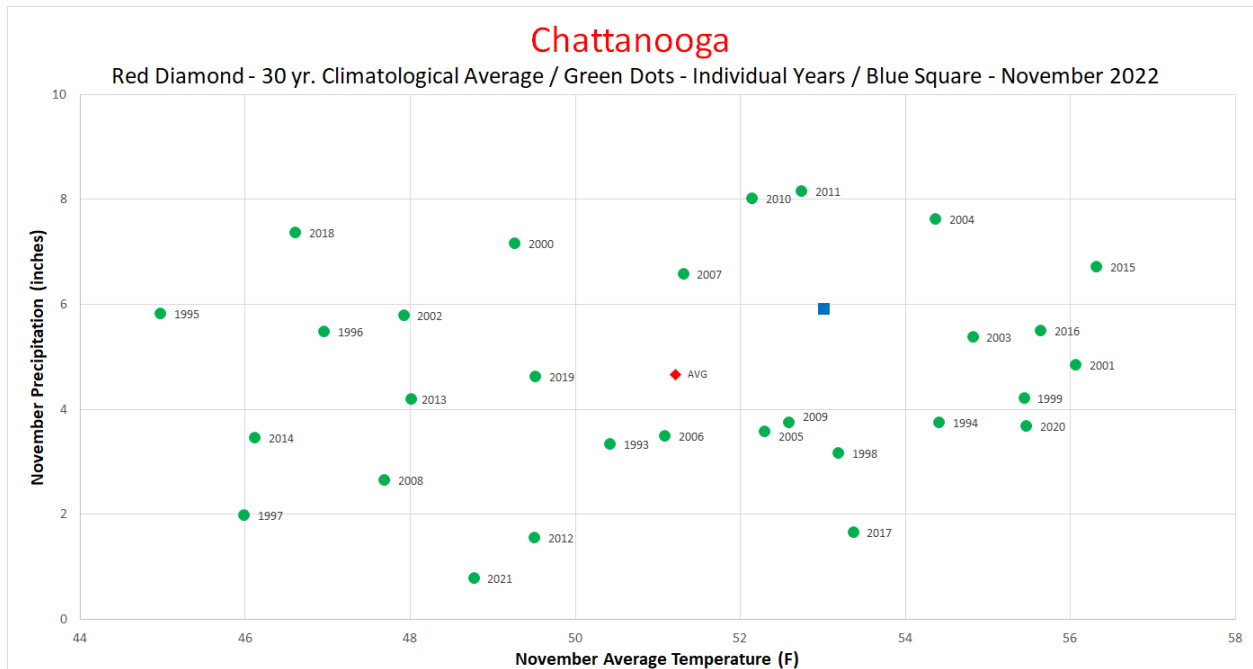
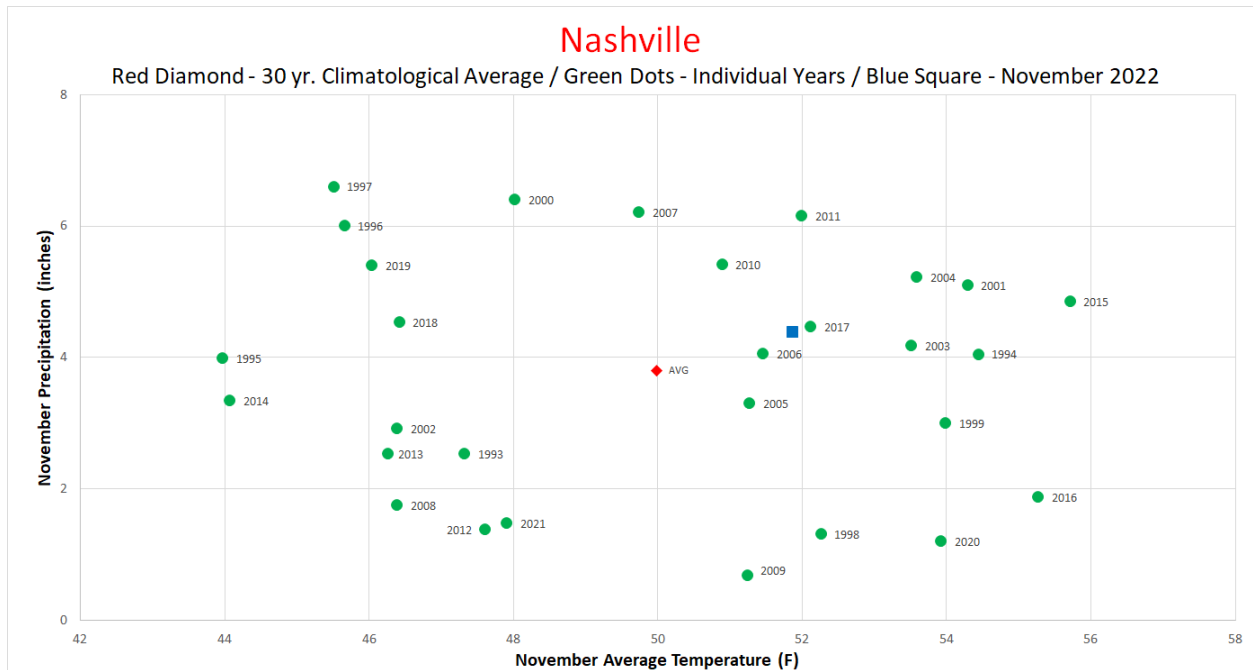
15 other weather stations reported a Trace (less than 0.1") of snow during the month.

The Month in Comparison:

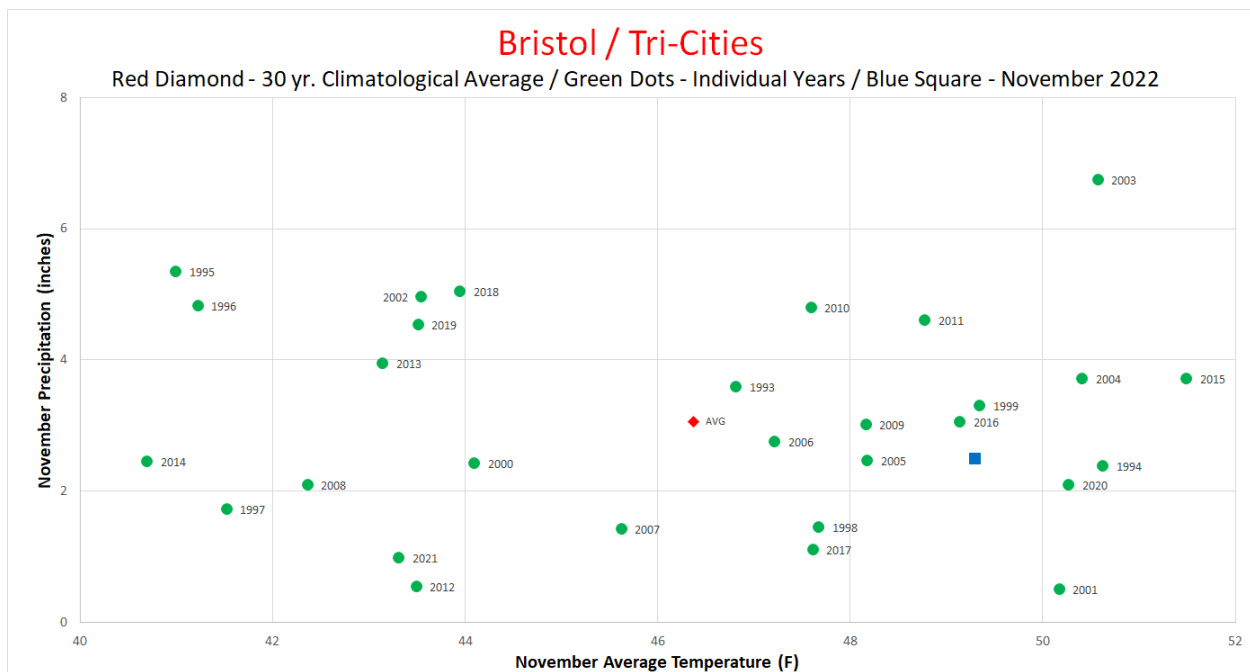
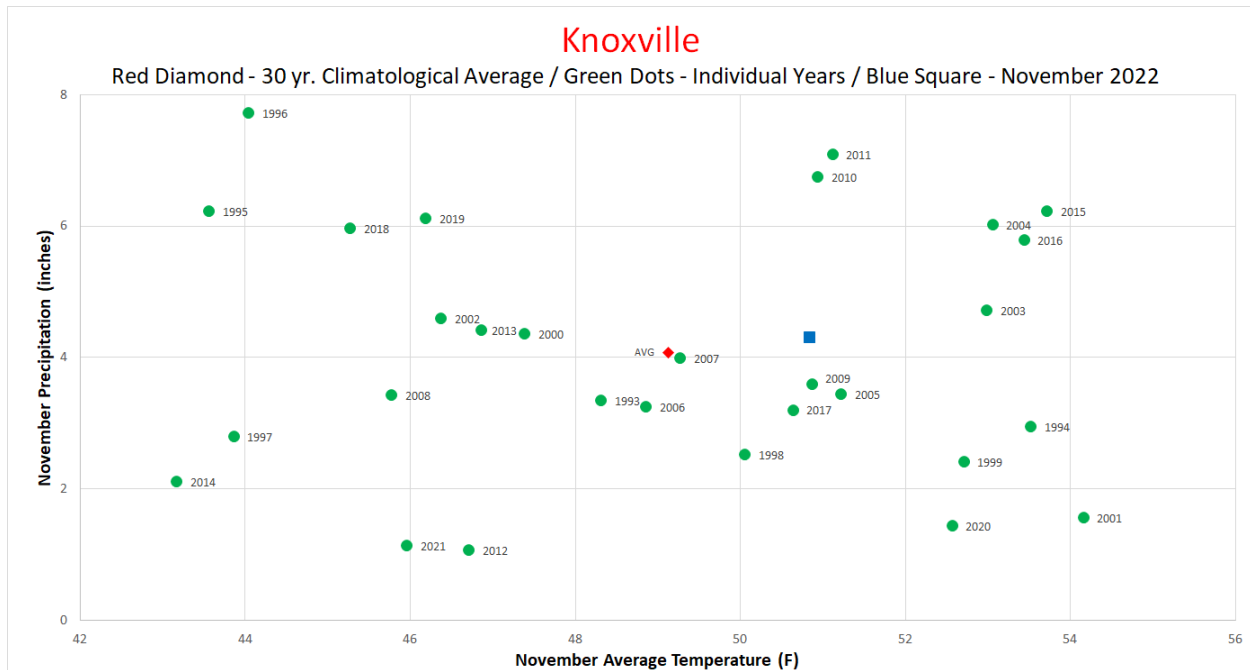
Comparing the average temperature and total rainfall at select automated weather stations located at airports across the state for November 2022 to the conditions of November over the past thirty years, most locations were near normal in precipitation and mean temperature. November 2022 was not one of the 5 driest, wettest, warmest, or coolest Novembers of the past thirty years at of these airport weather stations.



November 2022 Tennessee State Climate Summary

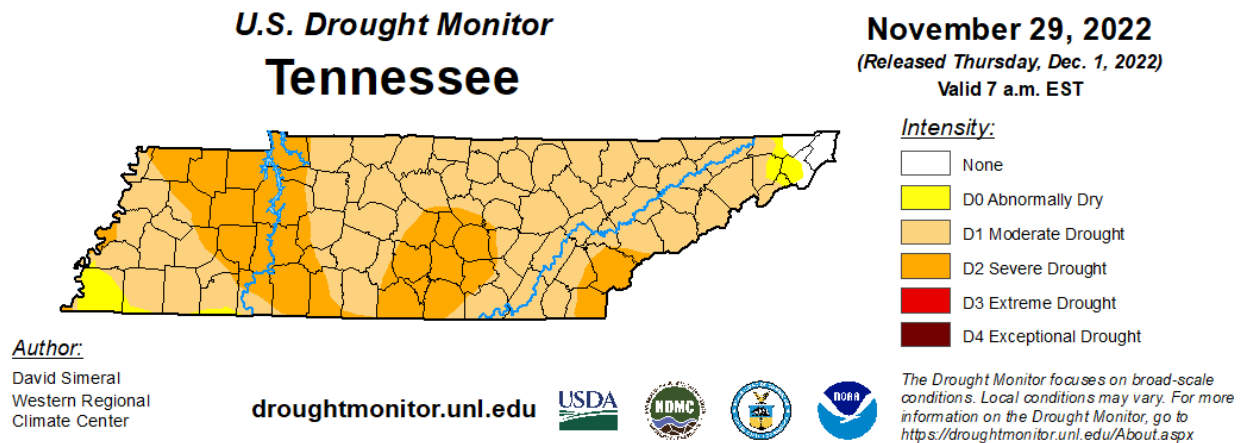


November 2022 Tennessee State Climate Summary



Drought Monitor:

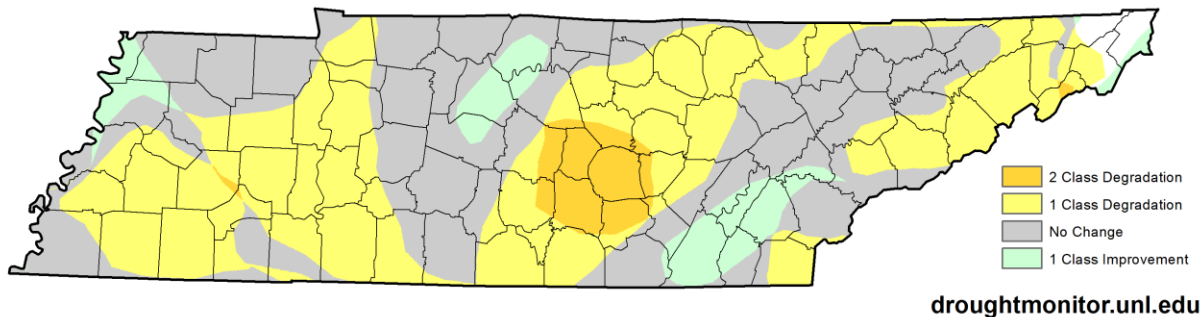
In the last Drought Monitor release of November, based on data through Tuesday, November 29, almost all areas of Tennessee were in some level of drought. 95.33% of the state's area was in Moderate or Severe drought, with an additional 3.1% of the state shown in Abnormally Dry conditions, leaving only 1.57% of Tennessee (in extreme northeast Tennessee) clear on the Drought Monitor. This was a marginal increase in coverage of D0-D2 (Abnormally Dry Conditions through Severe Drought), since the first Drought Monitor release of November (November 1). But during November many areas of the state experienced an increase in drought level, with Severe Drought expanding from 14.51% of the state's area to 30.53%. Moderate Drought also increased in coverage from 51.3% of the state at the beginning of November to 64.8% of the state at the end of November. Heavy rains in the last days of November and the beginning of December will likely lead to large improvements in drought conditions in the coming weeks.



November 29, 2022
compared to
November 1, 2022

U.S. Drought Monitor Class Change - Tennessee

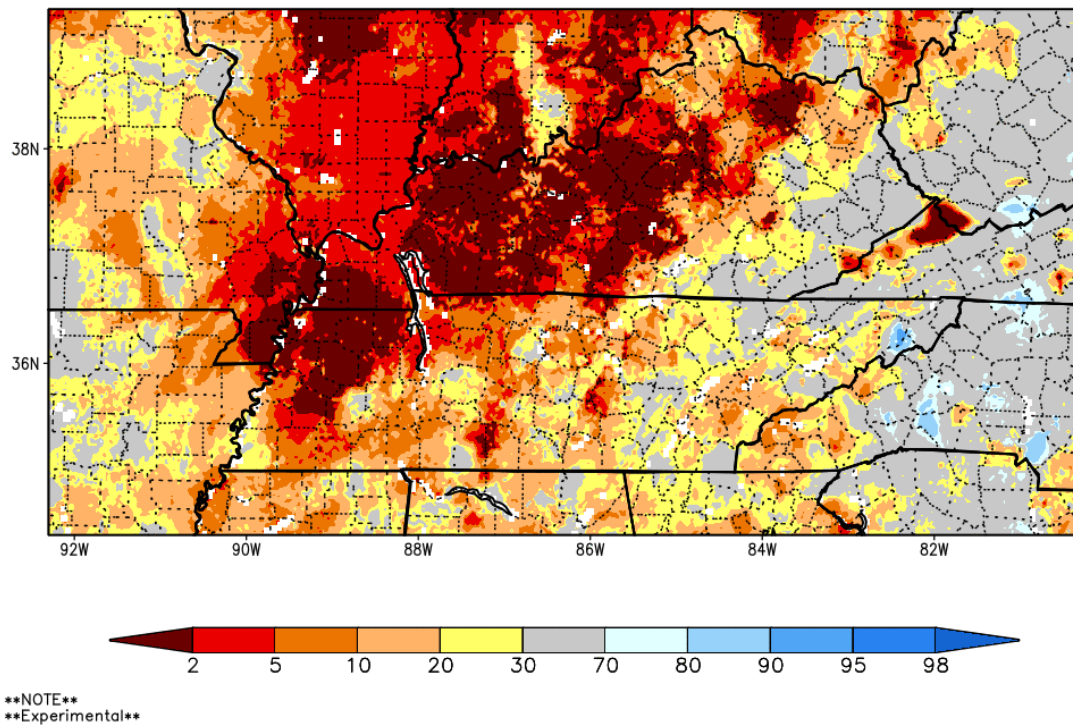
4 Week



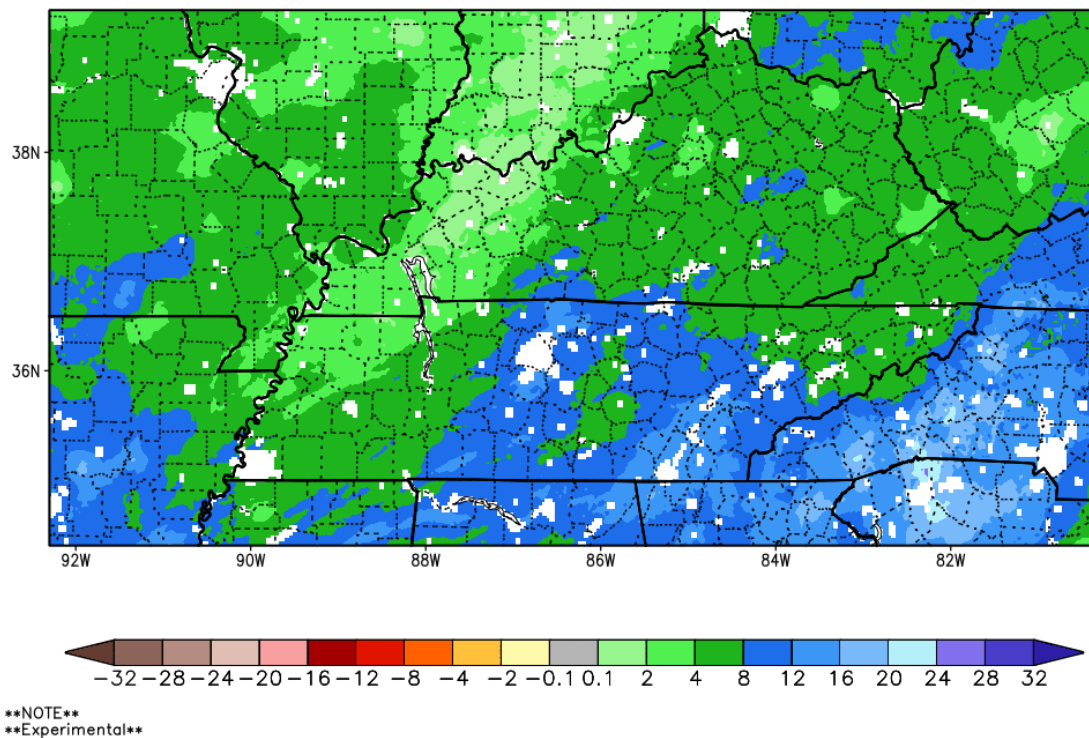
Soil Moisture:

The NASA SPoRT Land Information System showed that most areas of the state had below normal soil moisture levels for the top 2 meters of soil at the end of November. However, November had more rain compared to October across the state, so November saw an increase in soil moisture ranging from a 1% increase in northwest Tennessee to around a 15% increase in parts of Middle and East Tennessee. The USDA Crop Weather Report at the end of November indicated that topsoil moisture was 8% very short, 19% short, 71% adequate, and 2% surplus; while subsoil moisture was rated 8% very short, 24% short, 66% adequate, and 2% surplus.

SPoRT-LIS 0–200 cm Soil Moisture percentile valid 30 Nov 2022



1–Month Difference in Column Relative Soil Moisture (%) valid 12z 30 Nov 2022

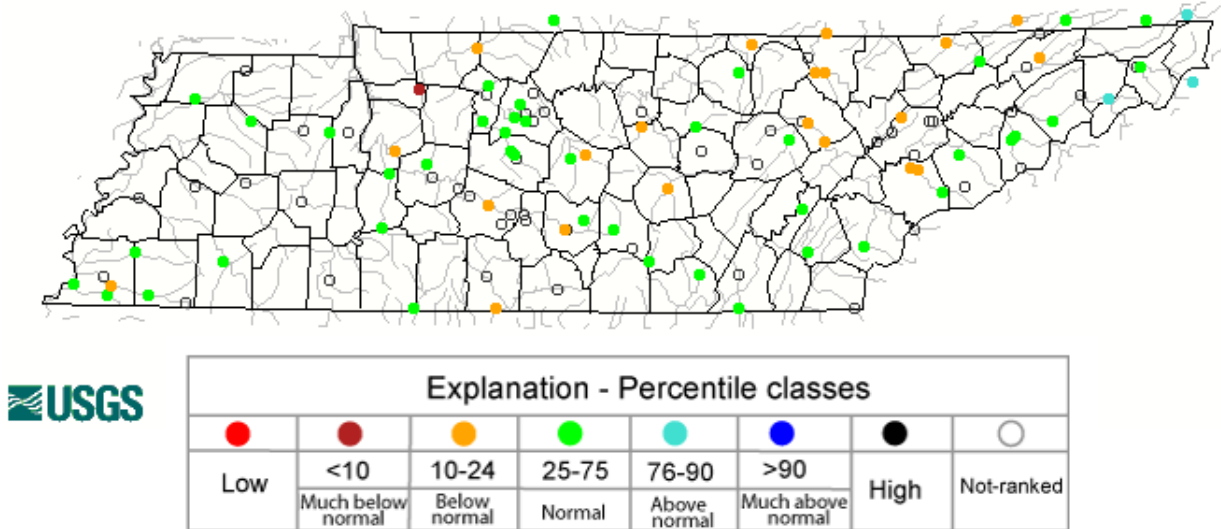


Streamflow:

Averaged for November, streamflow levels across Tennessee were mostly in the normal to below normal range according to the USGS. Most streams reporting below normal flow were found in the northern sections of the Cumberland Plateau and East Tennessee with a few also scattered in Middle Tennessee. There were a few streams in northeast Tennessee that reported above normal flow, mostly on streams with headwaters in North Carolina and Virginia which saw more precipitation over the past two months than most areas of Tennessee.

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

November 2022

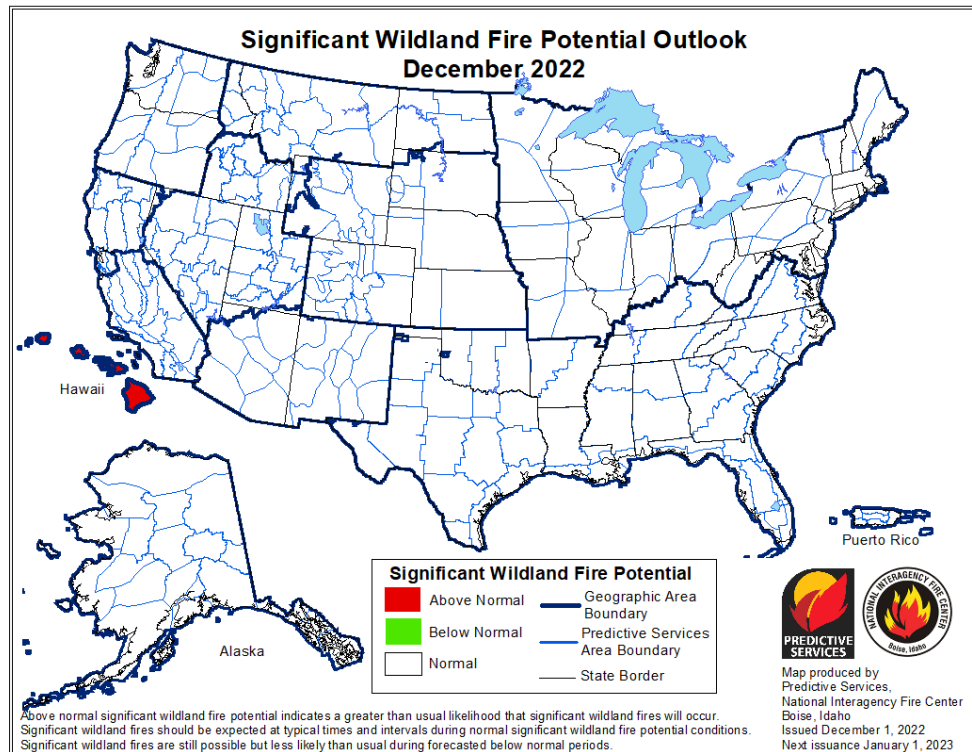


Miscellaneous:

Crop Conditions from USDA: Harvest finished up for most crops in Tennessee during November, with corn yields lower than last year due to drought conditions earlier in the summer. Winter wheat planting also occurred during November, with some delay in planting and crop emergence due to dry conditions. Poor pasture conditions are a continuing concern for cattle producers across the state due to dry conditions. However, rains at the end of November and warmer than normal conditions in the eastern half of the state have been beneficial for pastures there, but 43% of pastures were still reported in Poor or Very Poor condition across the state.

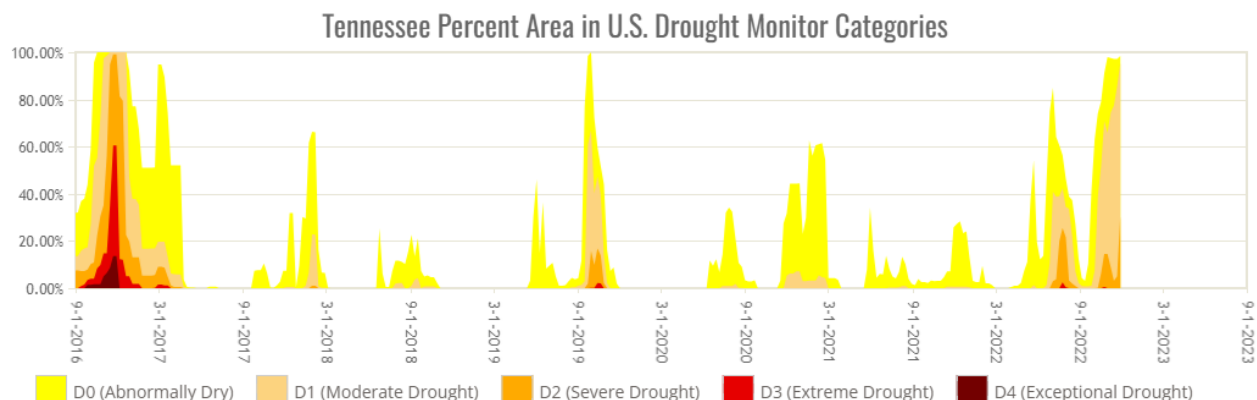
					CONDITION					
CROP PROGRESS	This Week	Last Week	2021	5 Year Avg.	Item	Very Poor	Poor	Fair	Good	Excellent
Percent					Percent					
Cotton – Harvested	95	90	92	92	Winter Wheat	0	2	43	45	10
Soybeans – Harvested	96	93	91	91	Pasture	14	29	41	15	1
Winter Wheat – Planted	96	93	94	N/A						
Winter Wheat – Emerged	85	77	82	N/A						

Fire Danger: There were several small to moderately sized brush and forest fires reported in Tennessee during November, with the largest being in Campbell County which burned approximately 270 acres. The Interagency Fire Center outlook for significant wildland fires shows that Tennessee along with the entire continental US will have normal potential for significant wildland fires in December.



Story of the Month:

The main weather/climate story of November 2022 was the spread, and likely peak, of drought conditions by the end of November across Tennessee. These drought conditions were a result of below normal precipitation in parts of the state from September, October, and November, and as far back as August for some areas of the state. In the last release of the US Drought Monitor from November 29, 95.33% of Tennessee was shown in Moderate or Severe Drought (D1 or D2), which is the highest coverage of at least D1 (Moderate Drought Conditions) since December 20, 2016. However, with rains in the last days of November and first week of December, combined with an outlook for a wetter than normal December, hopefully this will be the peak of drought coverage in Tennessee.



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 was 1 day with severe storms reported in Tennessee with no tornados, but 1 severe wind damage report, and 2 reports of severe hail (1" diameter or larger).

November 29



Wind:

Time (UTC)	Speed (mph)	Location	County	Lat	Lon	Comments
2:06	--	5 NNE ROSSVILLE	FAYETTE	35.11	-89.49	MULTIPLE TREES ACROSS ROAD ON HEWLETT DR. (MEG)

Hail:

Time (UTC)	Size (in)	Location	County	Lat	Lon	Comments
23:56	1.75	DICKSON	DICKSON	36.08	-87.38	PHOTO FROM NEWSCHANNEL5 SHOWED SPIKY HAIL UP TO NEAR GOLF BALL SIZE IN DICKSON. (OHX)
0:19	1.00	3 ENE ASHLAND CITY	CHEATHAM	36.3	-87	QUARTER SIZE HAIL REPORTED NEAR BEARWALLOW ROAD AND BANDY ROAD INTERSECTION VIA SOCIAL MEDIA. (OHX)
1:15	1.00	SOUTHEAST MEMPHIS	SHELBY	35.07	-89.88	QUARTER SIZE HAIL NEAR SHELBY DR AND LAMAR. (MEG)

CPC Outlooks for the Next Month:

The NOAA Climate Prediction Center outlooks for December indicate that all of Tennessee will have equal chances of above or below normal temperatures for December, and Tennessee is leaning towards a wetter than normal December, with the highest confidence in northern Middle Tennessee.

