

August 2018 Tennessee Climate Summary

Prepared by William Tollefson and Dr. Andrew Joyner

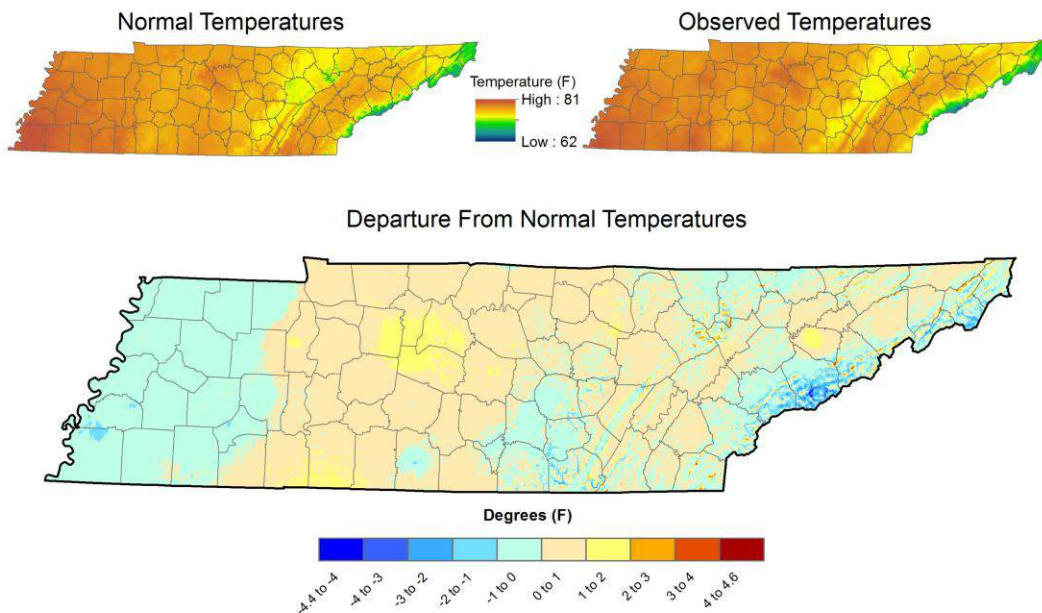
Tennessee Climate Office * East Tennessee State University

Monthly Temperature Summary:

Mean temperatures for the month of August were within $\pm 1^\circ\text{F}$ of normal for most of the state, with a few pockets of larger departures. However, as in many months the monthly mean temperature smooths over a more amplified temperature pattern during several weeks. Temperatures for the first half of the month were relatively close to normal, but in the middle of the month a warmer than normal pattern was observed across the state. Just following that warm spell, the first taste of fall was ushered in by a strong cold front that swept across the state, bringing well below average temperatures for a few days. This front also brought the first recorded temperature below 40 degrees for the state since early June (both at Mt. LeConte). This cool spell was then followed by a resurgence of heat in the final days of the month. Recorded temperatures ranged 62 degrees from a low of 36°F (Mt. LeConte) to a high of 98°F (recorded at several stations in West and Middle Tennessee).



August 2018 Mean Temperature



Stations with the highest mean temperature

Name	Station Type	Mean Temperature (F)
GERMANTOWN 4SE	COOP	82.1
BIG SOUTH TENNESSEE	RAWS	81.7
MEMPHIS INTERNATIONAL AP	WBAN	81.3
SHILOH NMP TENNESSEE	RAWS	80.8
MEMPHIS WFO	WBAN	80.1

Map Data From: PRISM Climate Group,
Oregon State University,
1980-2010 Normals Used
Station Data retrieved from SCACIS2

Stations with the lowest mean temperature

Name	Station Type	Mean Temperature (F)
MT LECONTE	COOP	57.5
NEWFOUND GAP	COOP	64.6
ROAN MOUNTAIN 3SW	COOP	67.2
CHEROKEE TENNESSEE	RAWS	69
GATLINBURG 2 SW	COOP	70.6

Monthly Precipitation Summary:

Precipitation across the state mainly came in the form of scattered storms, which produced spotty coverage. The first week of the month did bring widespread heavy precipitation across the eastern-most parts of the state, with that axis of widespread precipitation moving to the Cumberland Plateau in the second and third week of the month. However, the 4th week of the month (23rd through the 29th) was exceedingly dry, and most areas recorded no rainfall. The final two days of the month brought more widespread scattered storms. Overall about half of the state recorded precipitation above normal, and about half below normal. Most of the areas which recorded above normal precipitation were in the eastern half of the state, with a notable exception along the Mississippi River in the counties of Tipton, Lauderdale, and western Haywood which recorded over 3 inches of rain on the 17th. Most areas that recorded below normal precipitation were found in the southern areas of climate divisions 3 and 4 (from Hardeman County east to Giles County, and northward into parts of Cheatham and Dickson Counties).

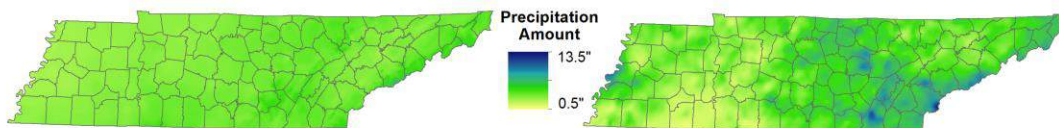


August 2018 Precipitation

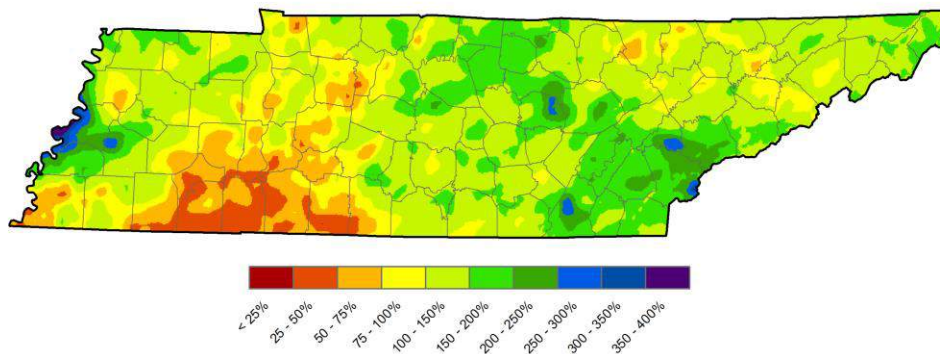


Normal Precipitation

Observed Precipitation



Percent Normal Precipitation



Stations with the most precipitation

Name	Station Type	Total Precipitation (in)
MT LECONTE	COOP	11.31
MURFREESBORO STONES RIVER N.B.	COOP	11.3
DAYTON 2SE	COOP	9.73
NEWFOUND GAP	COOP	9.43
WHITWELL 4.5 ENE	CoCoRaHS	9.26

Map Data From: PRISM Climate Group,
Oregon State University.
1980-2010 Normals Used
Station Data retrieved from SC ACIS2

Stations with the least precipitation

Name	Station Type	Total Precipitation (in)
LAFAYETTE	COOP	0.23
MORRISON 6.3 SSE	CoCoRaHS	0.28
WAYNESBORO 4.7 WSW	CoCoRaHS	0.36
KNOXVILLE EXP STA	COOP	0.39
NASHVILLE 3.1 WSW	CoCoRaHS	0.46

Top Tenn (warmest, coldest, wettest, driest stations of the month):

Hottest Stations (highest max temp):

Name	Station Type	Max Temperature (F)
CAMDEN TOWER TENNESSEE	RAWS	98
KINGSTON SPRINGS	COOP	98
GERMANTOWN 4SE	COOP	98
NEAPOLIS RESEARCH STATION	COOP	98
CHEATHAM LOCK & DAM	COOP	98
SHILOH NMP TENNESSEE	RAWS	97
LEBANON	COOP	97
DECATURVILLE	COOP	97
CAMDEN	COOP	97
AMES PLANTATION	COOP	97
SELMER	COOP	97

Coldest Stations (lowest min temp):

Name	Station Type	Lowest Temperature (F)
MT LECONTE	COOP	36
ROAN MOUNTAIN 3SW	COOP	47
NEWFOUND GAP	COOP	47
CHEROKEE TENNESSEE	RAWS	49
PICKETT STATE PARK	COOP	50
TAZEWELL	COOP	51
ONEIDA	COOP	51
PULASKI WASTEWATER PLANT	COOP	52
MOUNT PLEASANT 1N	COOP	52
NORRIS	COOP	52
JAMESTOWN	COOP	52
KINGSPORT	COOP	52
NEWCOMB	COOP	52
BRISTOL AP	WBAN	52

Warmest Stations (highest mean temps):

Name	Station Type	Mean Temperature (F)
GERMANTOWN 4SE	COOP	82.1
BIG SOUTH TENNESSEE	RAWS	81.7
MEMPHIS INTERNATIONAL AP	WBAN	81.3
SHILOH NMP TENNESSEE	RAWS	80.8
MEMPHIS WFO	WBAN	80.1
NASHVILLE INTL AP	WBAN	80.1
CAMDEN TOWER TENNESSEE	RAWS	80.1
BROWNSVILLE	COOP	79.9
NASHVILLE BERRY FIELD	COOP	79.7
CAMDEN	COOP	79.6

Coolest Stations (lowest mean temps):

Name	Station Type	Mean Temperature (F)
MT LECONTE	COOP	57.5
NEWFOUND GAP	COOP	64.6
ROAN MOUNTAIN 3SW	COOP	67.2
CHEROKEE TENNESSEE	RAWS	69
GATLINBURG 2 SW	COOP	70.6
TOWNSEND 5S	COOP	70.7
PICKETT STATE PARK	COOP	71.5
CROSSVILLE 7 NW	WBAN	71.7
CROSSVILLE EXP STN	COOP	72.1
COALMONT	COOP	72.4

Wettest Stations (highest rainfall totals):

Name	Station Type	Total Precipitation (in)
MT LECONTE	COOP	11.31
MURFREESBORO STONES RIVER N.B.	COOP	11.3
DAYTON 2SE	COOP	9.73
NEWFOUND GAP	COOP	9.43
WHITWELL 4.5 ENE	CoCoRaHS	9.26
OLTEWAH 6.7 NNE	CoCoRaHS	9.22
CORNERVILLE 3.6 SE	CoCoRaHS	8.83
BRENTWOOD	COOP	8.51
SMYRNA 3.0 ESE	CoCoRaHS	8.44
MONTEREY 3.9 W	CoCoRaHS	8.28

Driest Stations (lowest rainfall totals):

Name	Station Type	Total Precipitation (in)
LAFAYETTE	COOP	0.23
MORRISON 6.3 SSE	CoCoRaHS	0.28
WAYNESBORO 4.7 WSW	CoCoRaHS	0.36
KNOXVILLE EXP STA	COOP	0.39
NASHVILLE 3.1 WSW	CoCoRaHS	0.46
ARRINGTON 1.3 NNE	CoCoRaHS	0.48
GOODLETTSVILLE 7WNW	COOP	0.55
LORETTO 4.7 NE	CoCoRaHS	0.71
CLINTON 4.9 S	CoCoRaHS	0.71
LINDEN WATER PLANT	COOP	0.74

Drought Monitor:

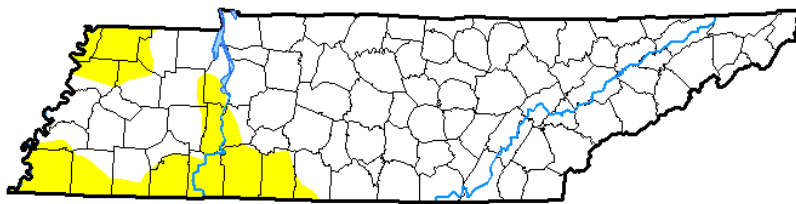
Due to dry conditions in parts of southwest Middle Tennessee and southern West Tennessee, D0 drought conditions were expanded in those regions, while rainfall along the Mississippi River lead to a reduction of D1 drought conditions to either D0 or drought-free conditions during the month of August. D0 conditions were also removed from parts of southeast Middle Tennessee after rains in the early part of the month.

Author:






Jessica Blunden
NCEI/NOAA

U.S. Drought Monitor Tennessee

August 28, 2018
(Released Thursday, Aug. 30, 2018)
Valid 8 a.m. EDT



Intensity:

-  D0 Abnormally Dry
-  D1 Moderate Drought
-  D2 Severe Drought
-  D3 Extreme Drought
-  D4 Exceptional Drought

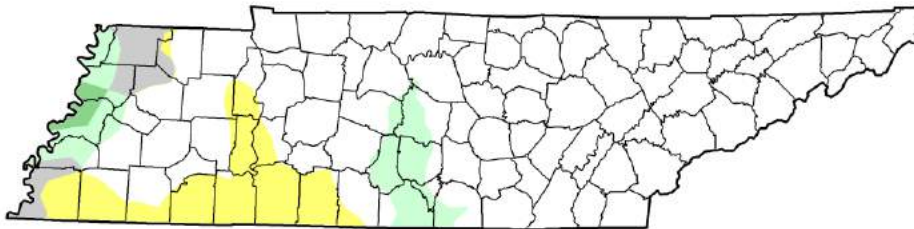
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.



<http://droughtmonitor.unl.edu/>

August 28, 2018
compared to
July 31, 2018

U.S. Drought Monitor Class Change - Tennessee 1 Month

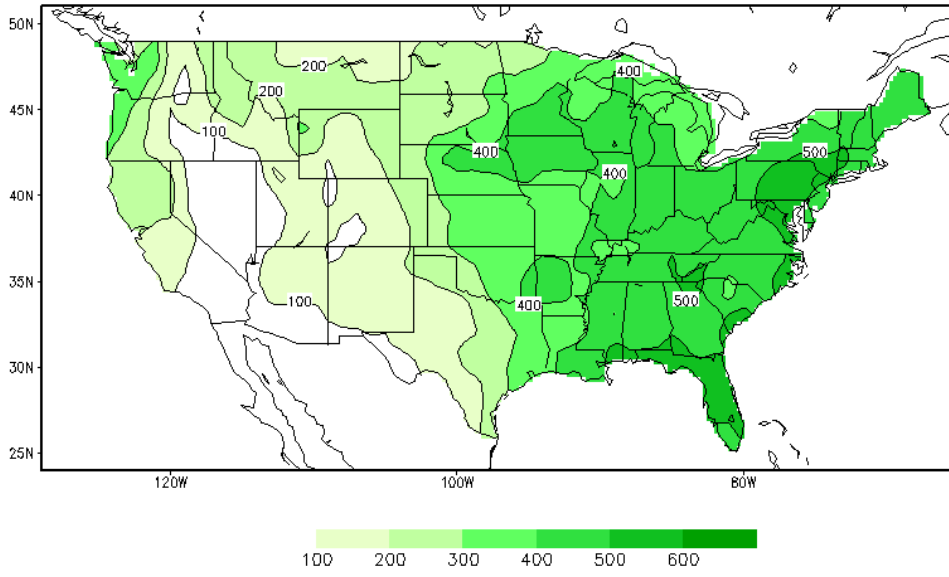


<http://droughtmonitor.unl.edu>

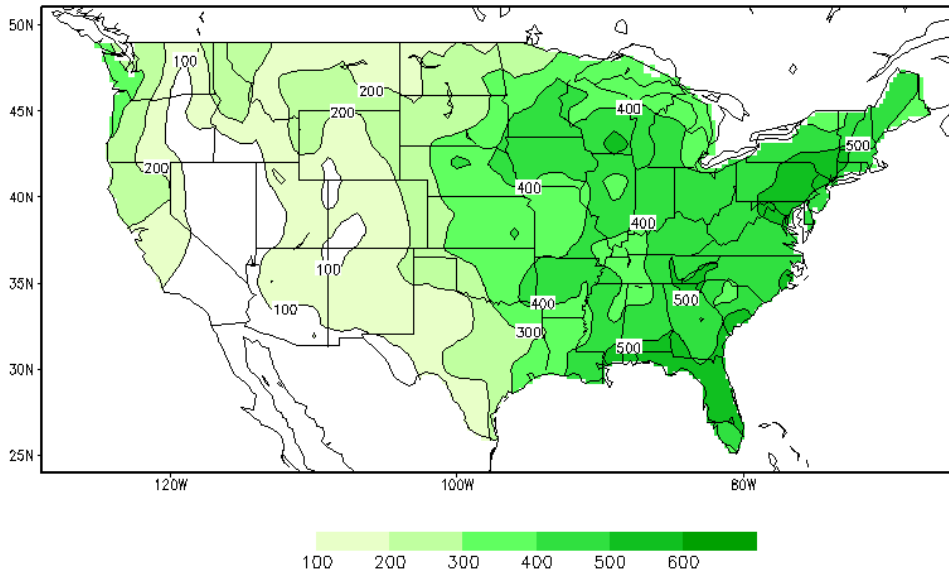
Soil Moisture:

Drying conditions across the western half of the state also produced drops in available soil moisture with soil moisture readings below 400mm for most of West and western Middle Tennessee by the end of the month. This means about a quarter to a third of the state was observing negative anomalies in soil moisture by the end of the month.

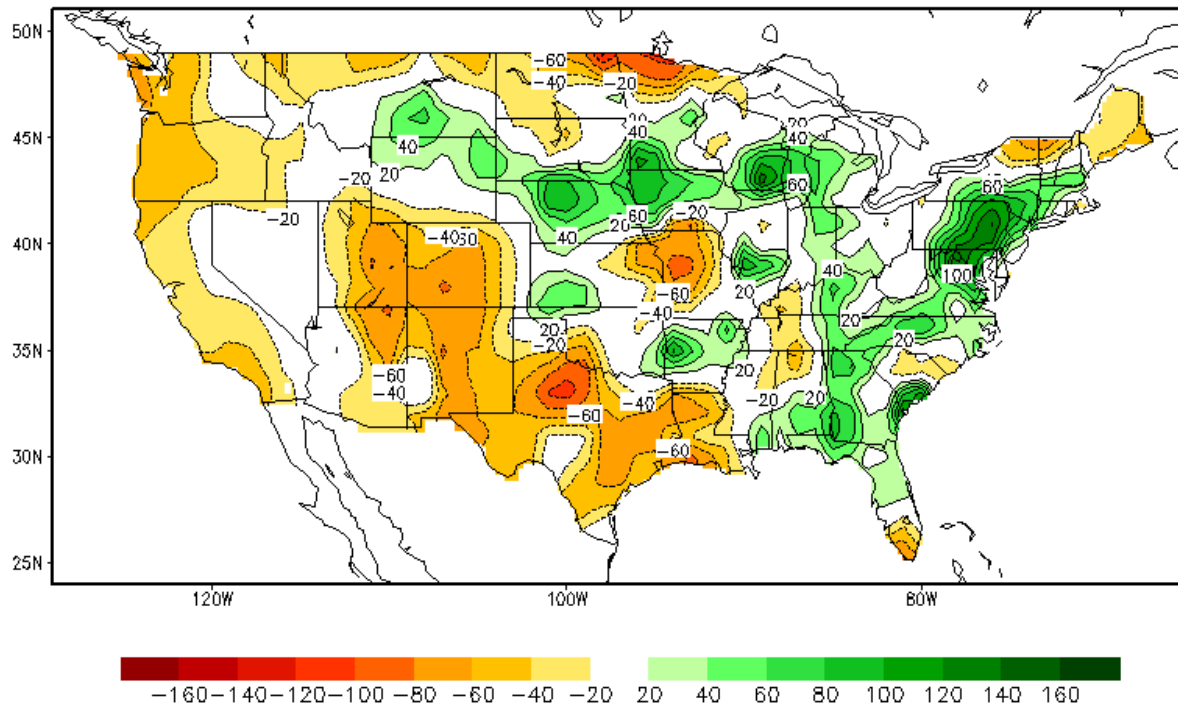
Calculated Soil Moisture (mm)
AUG, 2018



Soil Moisture (mm) Last day of AUG, 2018



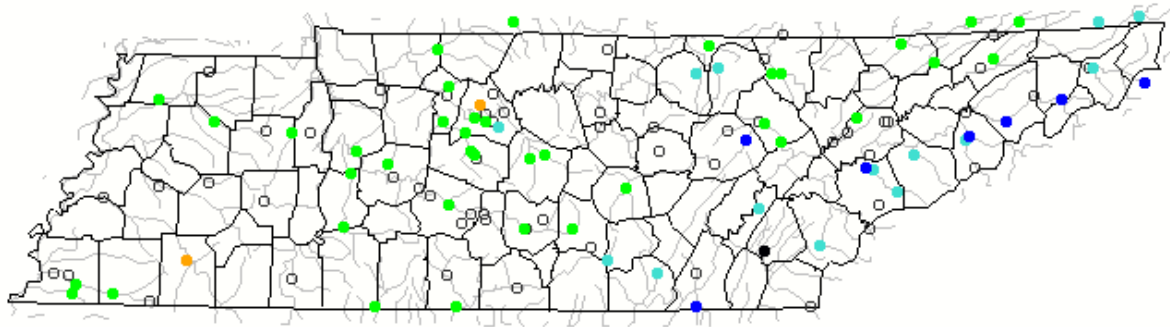
Soil Moisture Anomaly (mm) Last day of AUG, 2018



Streamflow:

Average stream flow across the state also reflected precipitation patterns, with the heavy rains in the eastern half of the state at the beginning of the month leading to “much above normal” flow for many streams there. Whereas drying conditions in the western half of the state lead to stream flow in the normal range, with two streams showing below normal flow for the month.

August 2018



Search USGS streamgage

Choose a data retrieval option and select a location on the map

- List of all stations Single station Nearest stations Peak flow

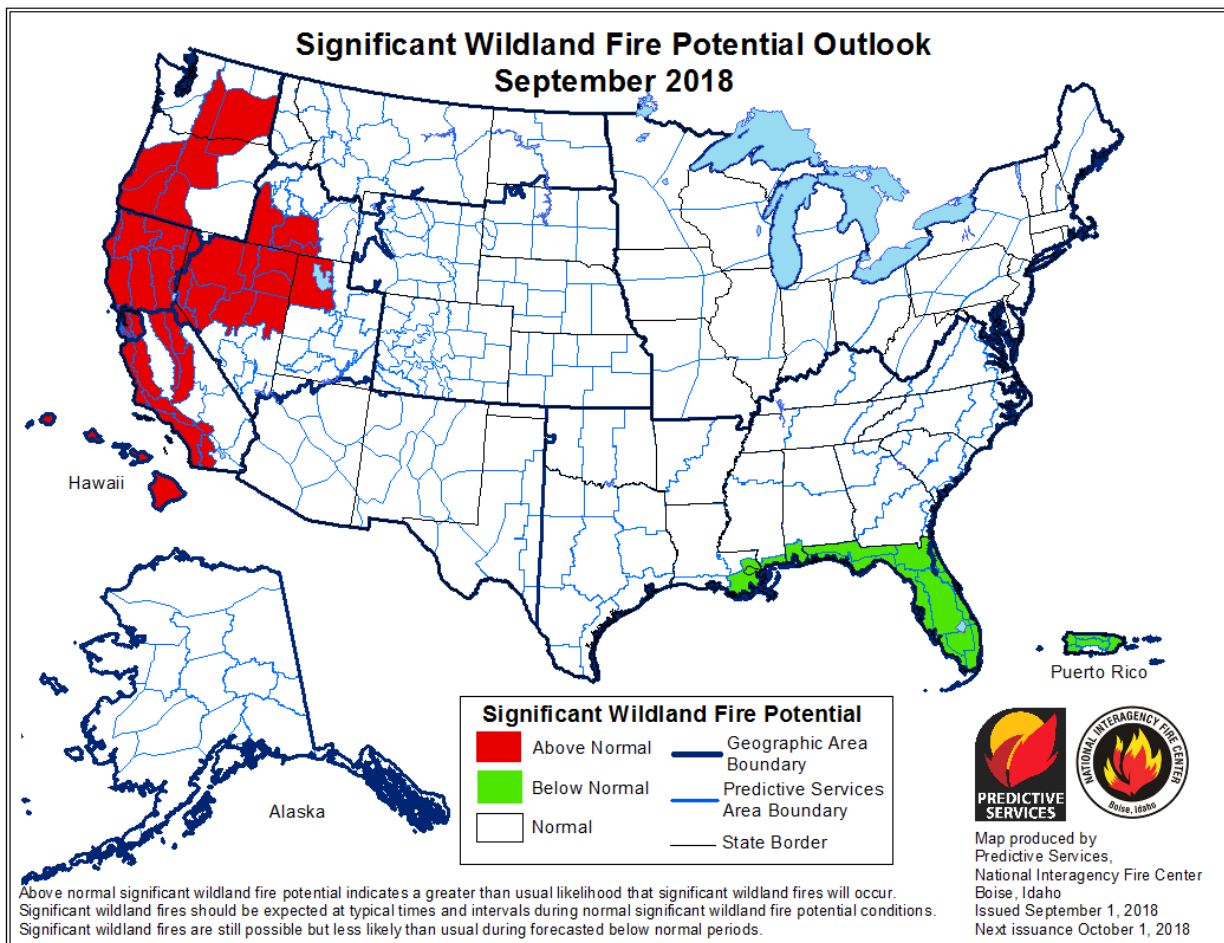
Explanation - Percentile classes							
Low	<10	10-24	25-75	76-90	>90	High	Not-ranked
	Much below normal	Below normal	Normal	Above normal	Much above normal		

Miscellaneous:

Crop Conditions from USDA: Crop progress across the state was at or ahead of 5-year average progress in corn, soybeans, and tobacco. Some extension agents were beginning to remark on drying conditions, and 28% of the state reported below adequate topsoil moisture. Pastures were most affected by the dry conditions, with 12% below fair condition.

CROP PROGRESS					CONDITION					
Crop	This Week	Last Week	2017	5 Year Avg.	Item	Very Poor	Poor	Fair	Good	Excellent
	Percent									
Corn – Dough Stage	99	98	97	97	Corn	2	5	20	54	19
Corn - Dented	85	71	83	80	Tobacco	0	2	25	58	15
Corn – Mature	27	6	35	21	Cotton	0	2	16	54	28
Corn – Harvested	1	N/A	3	1	Pasture	2	10	30	46	12
Cotton – Setting Bolls	99	98	98	94	Soybeans	2	4	21	54	19
Cotton – Bolls Opening	23	14	9	11						
Soybeans – Setting Pods	95	88	89	86						
Soybeans – Dropping Leaves	3	N/A	3	2						
Tobacco – Topped	95	89	91	86						
Tobacco – Cut	5	N/A	N/A	N/A						

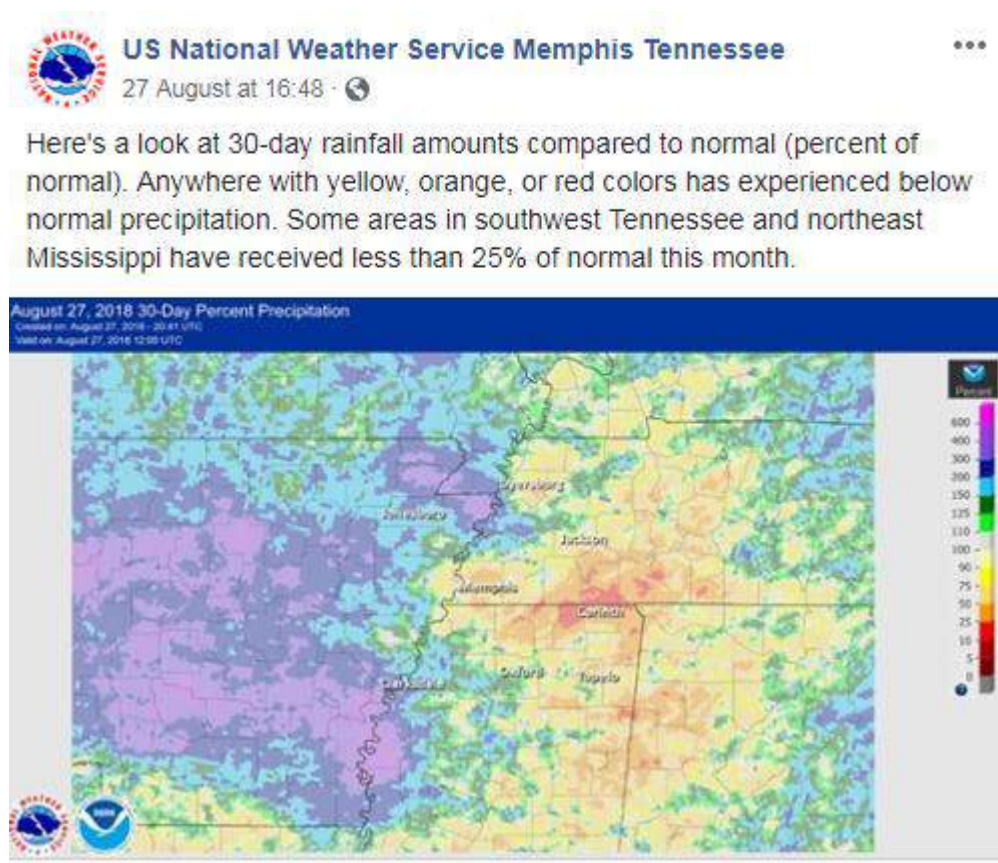
Fire Danger: The interagency fire center outlook for September shows normal potential for fires across the state for the upcoming month.



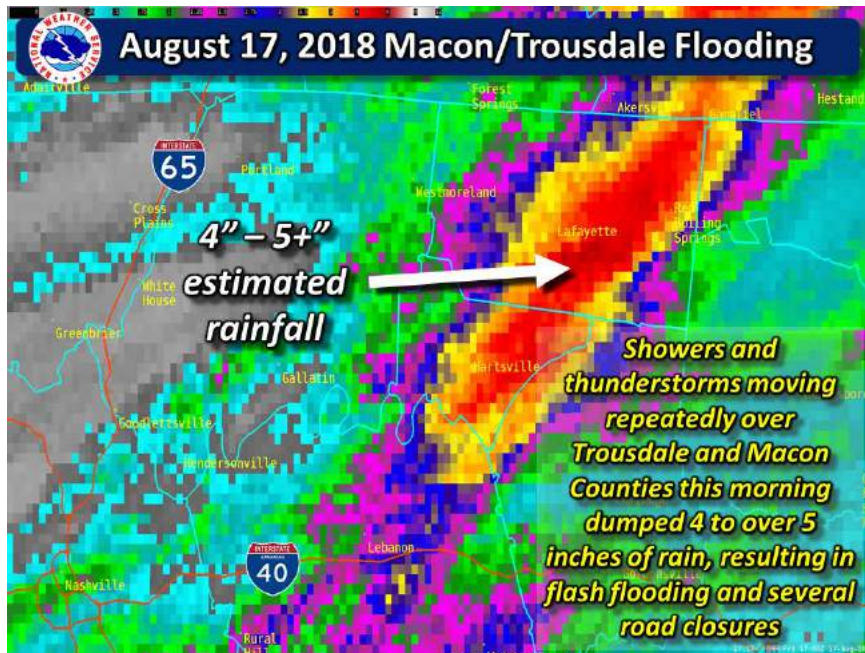
Story of the month:

The month of August did not have one defining or major storm, however the main story of the month, was the spotty nature of extreme precipitation, which spanned the state from west to east and resulted in highly variable precipitation patterns. For example, the Memphis airport, Jackson, and Martin, reported precipitation totals only around 2 inches for the month, whereas the National Weather Service Office in Memphis recorded 4.69 inches. A rain gauge at UT-Martin's coop site recorded only 0.04", while a major thunderstorm impacted surrounding areas.

In West Tennessee most areas were concerned with drought conditions developing, but heavy rainfall in Arkansas spilled over into parts of Lauderdale and Haywood Counties where more than 200% of normal rainfall was observed compared to just three counties away in McNairy where they recorded less than 25% of normal rainfall. The image below from the NWS-Memphis Facebook page provides another example of precipitation variability, especially across western Tennessee.



In Middle Tennessee, training of thunderstorms on the 17th produced areas with rainfall estimates of 4-5 inches, while nearby areas recorded no measurable precipitation! This resulted in flash flooding in the area.



US National Weather Service Nashville Tennessee shared a post.

17 August at 10:08 · 🌐

This video shows flash flooding in the Dixon Springs area near the Trousdale/Smith County line earlier this morning. Remember, if you encounter flooded roadways, Turn Around Don't Down!



16,568 Views

Kody Daniel

17 August at 08:58

Welllll dixon springs has got a bad case of the flood...

In East Tennessee heavy thunderstorms produced rainfall of up to 6 inches in areas around Chattanooga overnight on the 17th and 18th.

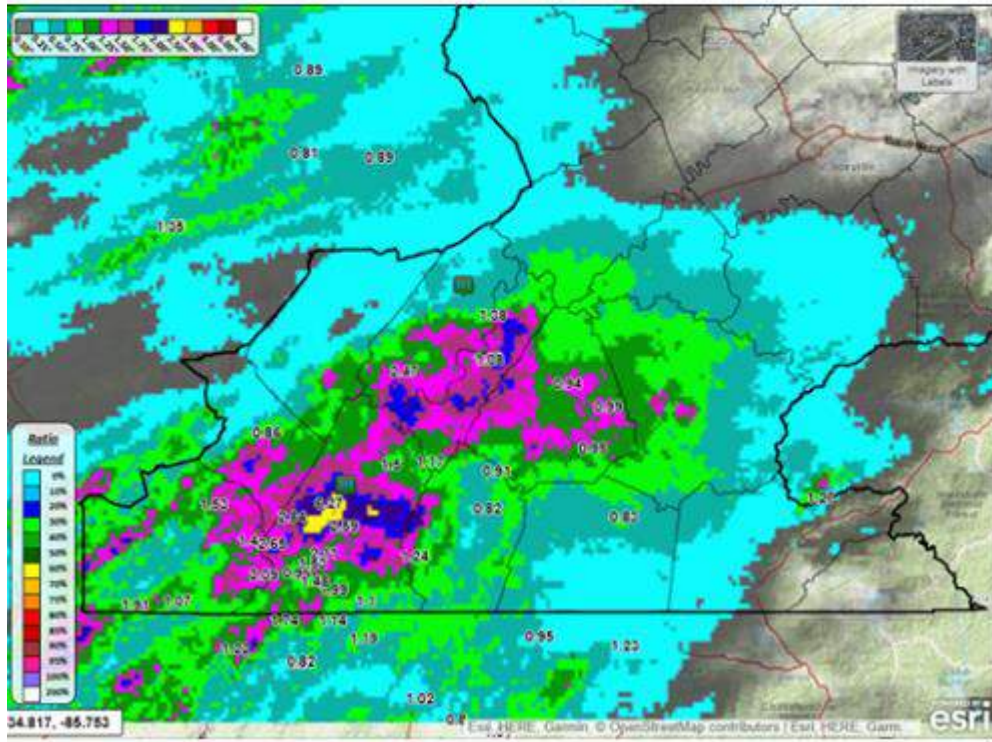


US National Weather Service Morristown Tennessee



18 August at 07:32 · 🌐

Some pretty hefty (preliminary) rainfall totals across the extreme lower TN valley around Chattanooga from last night. These areas will be at a higher risk for isolated flooding today if heavy rainfall moves back in. #tnwx



And isolated, stationary thunderstorms caused flash flooding to occur in the streets of Johnson City on the 6th and 10th.



US National Weather Service Morristown Tennessee shared a post.

10 August at 20:31 · 🌐

Flash Flooding occurring around Johnson City from very heavy rainfall over a short period of time!

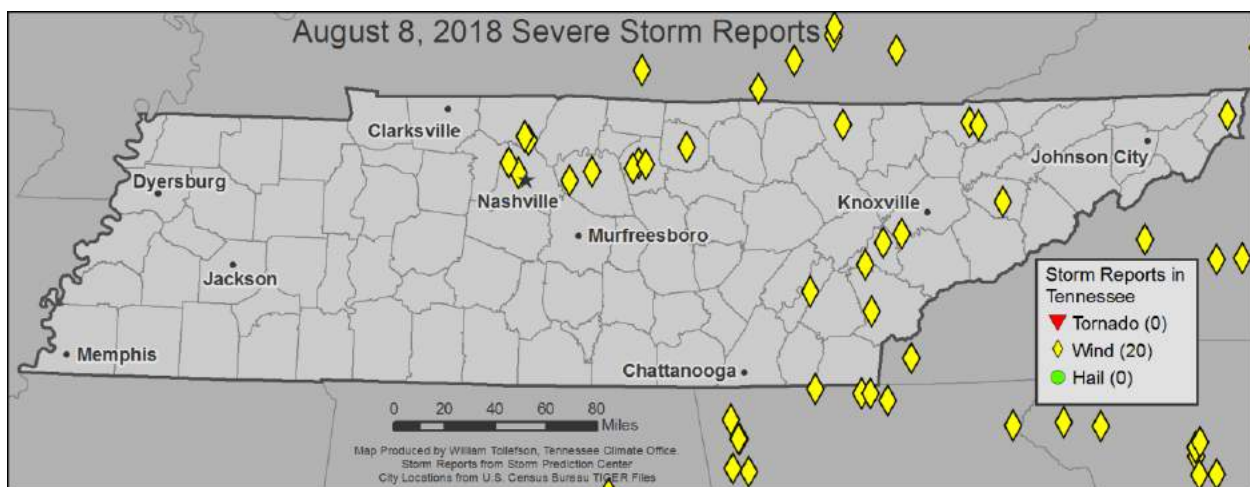
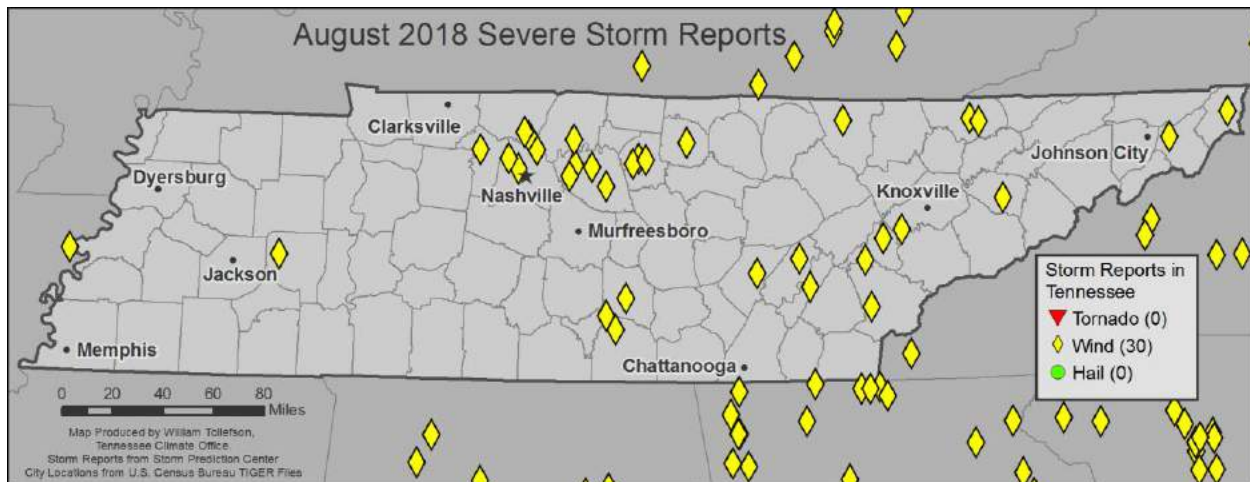


Ricky Matthews WCYB
10 August at 20:14 · 🌐

👍 Like Page

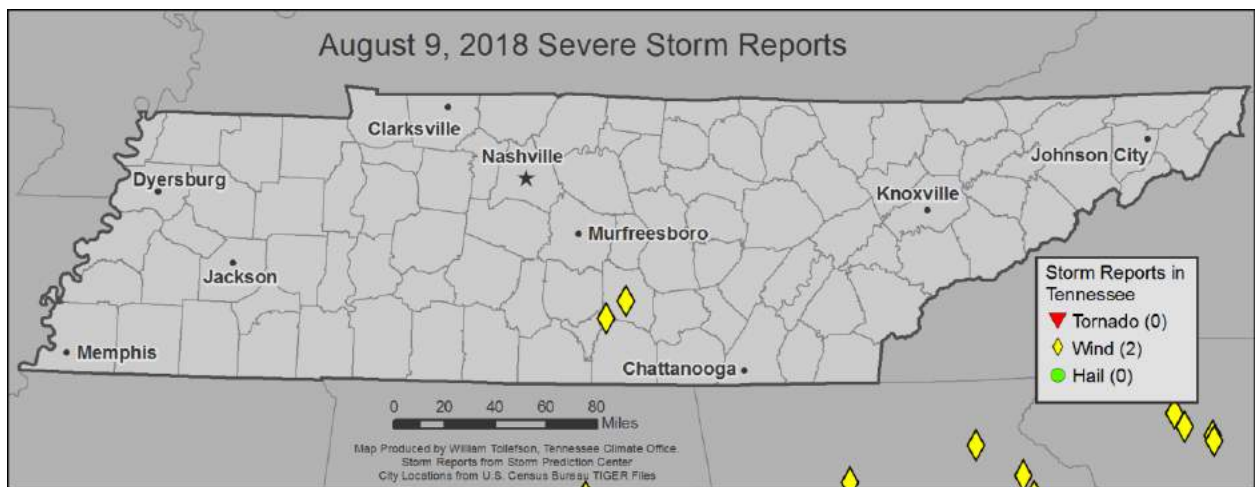
Storm reports:

There were five days this month with reported severe storm damage, totaling 30 wind damage reports, with the most coming on the 8th of August.

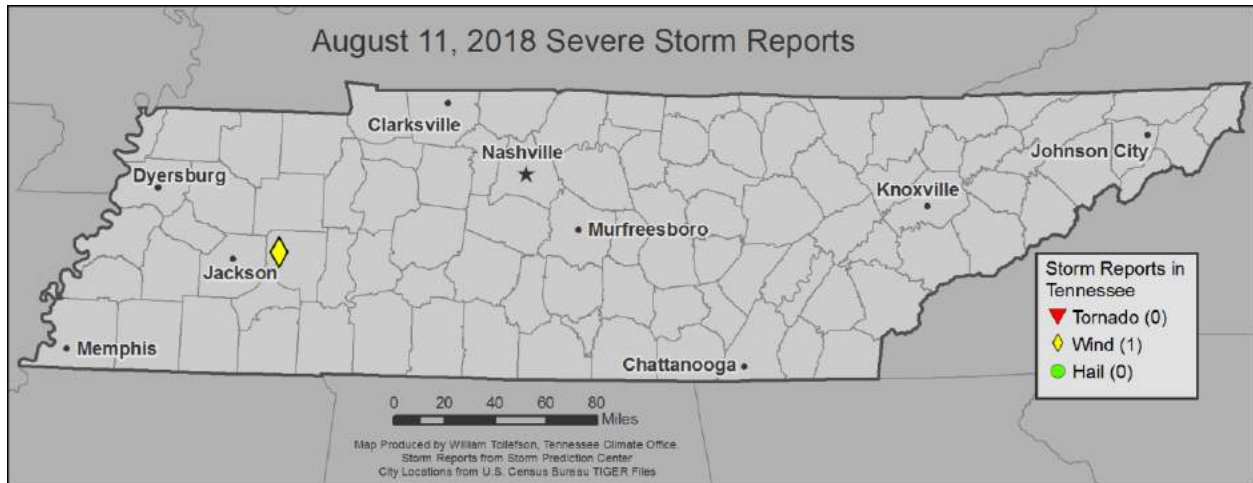


Time	Speed	Location	County	Lat	Lon	Comments
15:08	-	4 NW NASHVILLE	DAVIDSON	36.21	-86.84	TREE FELL ONTO A HOUSE IN NORTHWESTERN NASHVILLE. NO INJURIES REPORTED. (OHX)
15:08	-	10 NW NASHVILLE	DAVIDSON	36.27	-86.91	REPORT OF TREES DOWN AND POWER OUTAGES ACROSS THE NORTHWESTERN PORTIONS OF DAVIDSON COUNTY. (OHX)
15:15	-	RIDGETOP	ROBERTSON	36.4	-86.77	REPORT OF TREES AND POWER LINES DOWN IN THE AREA. POWER OUTAGES AS WELL. (OHX)
15:18	-	GREENBRIER	ROBERTSON	36.42	-86.8	RECEIVED A REPORT OF LOTS OF TREES AND POWERLINES DOWN ACROSS THE SOUTHERN PART OF ROBERTSON COUNTY...INCLUDING COOPERTOWN...RIDGETOP...WHITE HOUSE...AND GREENBRIER. ES (OHX)
15:55	-	1 N LEBANON	WILSON	36.22	-86.32	SCATTERED TREES REPORTED DOWN IN LEBANON. (OHX)
16:04	-	BELINDA CITY	WILSON	36.17	-86.48	REPORT OF TREES DOWN IN THE BELINDA CITY AREA. TIN ROOF TO A SHED WAS ALSO BLOWN OFF IN MUNDY PARK. (OHX)

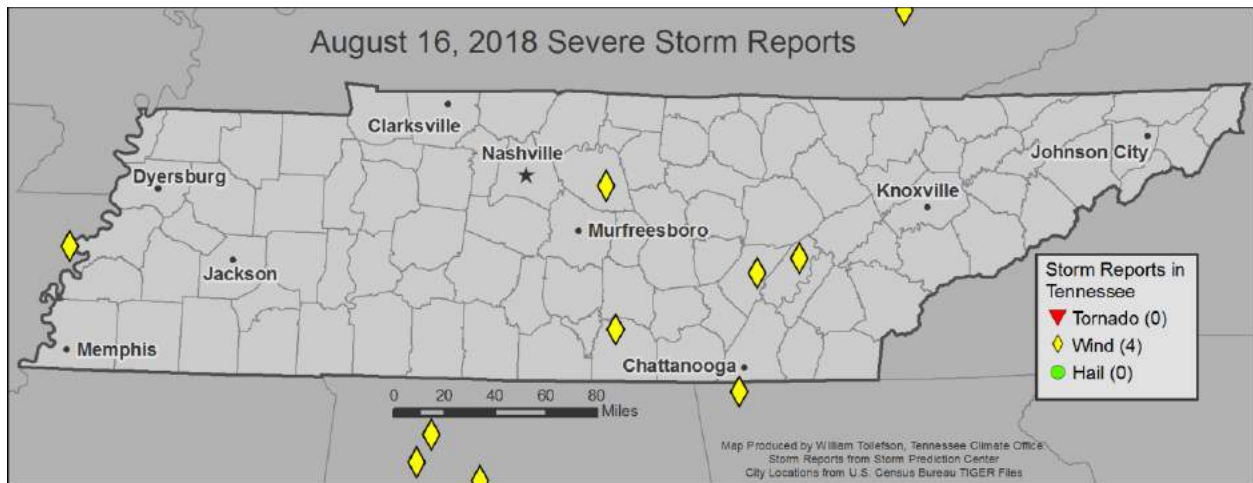
16:16	-	3 NW SOUTH CARTHAGE	SMITH	36.27	-85.99	FACEBOOK REPORT OF TREES DOWN IN THE MORRIS SUBDIVISION WITH A SOCCER GOAL FLUNG 20 YARDS INTO THE CUMBERLAND RIVER (OHX)
16:20	-	4 W SOUTH CARTHAGE	SMITH	36.24	-86.03	WIND KNOCKED THE STEEPLE OFF OF FIRST BAPTIST CHURCH IN CARTHAGE. (OHX)
16:20	-	CARTHAGE	SMITH	36.26	-85.94	WIND KNOCKED THE STEEPLE OFF OF FIRST BAPTIST CHURCH IN CARTHAGE. (OHX)
16:42	-	GAINESBORO	JACKSON	36.36	-85.65	REPORT OF MULTIPLE TREES AND POWER LINES DOWN IN GAINESBORO AND IN THE EASTERN PART OF THE COUNTY. (OHX)
18:20	-	DECATUR	MEIGS	35.53	-84.79	MULTIPLE TREES AND POWER LINES DOWN. (MRX)
18:25	-	2 SW ONEIDA	SCOTT	36.48	-84.54	COUPLE OF TREES DOWN. (MRX)
18:30	-	LENOIR CITY	LOUDON	35.8	-84.27	COUPLE TREES DOWN. (MRX)
18:40	-	PHILADELPHIA	LOUDON	35.68	-84.4	COUPLE TREES DOWN. (MRX)
18:55	-	10 WNW ALCOA	BLOUNT	35.85	-84.14	LARGE TREE DOWN. (MRX)
19:05	-	MOUNTAIN CITY	JOHNSON	36.47	-81.81	SEVERAL TREES DOWN. (MRX)
19:20	-	DANDRIDGE	JEFFERSON	36.02	-83.42	FEW TREES DOWN. (MRX)
19:25	-	4 WNW TAZEWELL	CLAIBORNE	36.48	-83.64	TREES DOWN ACROSS BUELL AND SHARP ROADS IN THE POWELL VALLEY AREA. (MRX)
19:35	-	MOUNT VERNON	MONROE	35.41	-84.36	POWER LINES AND TREES DOWN. (MRX)
19:40	-	TAZEWELL	CLAIBORNE	36.46	-83.58	ONE LARGE TREE DOWN ACROSS BILL ROAD. (MRX)



Time	Speed	Location	County	Lat	Lon	Comments
18:02	-	TULLAHOMA	COFFEE	35.37	-86.22	TSPOTTER REPORT AND PHOTO OF A TREE SPLIT ON 12 OAKS ROAD AND TREE LIMBS DOWN ON HUNTINGTON PLACE (OHX)
18:28	-	MANCHESTER	COFFEE	35.47	-86.08	TSPOTTER REPORT AND PHOTO OF A TREE DOWN ON INGRAM STREET (OHX)

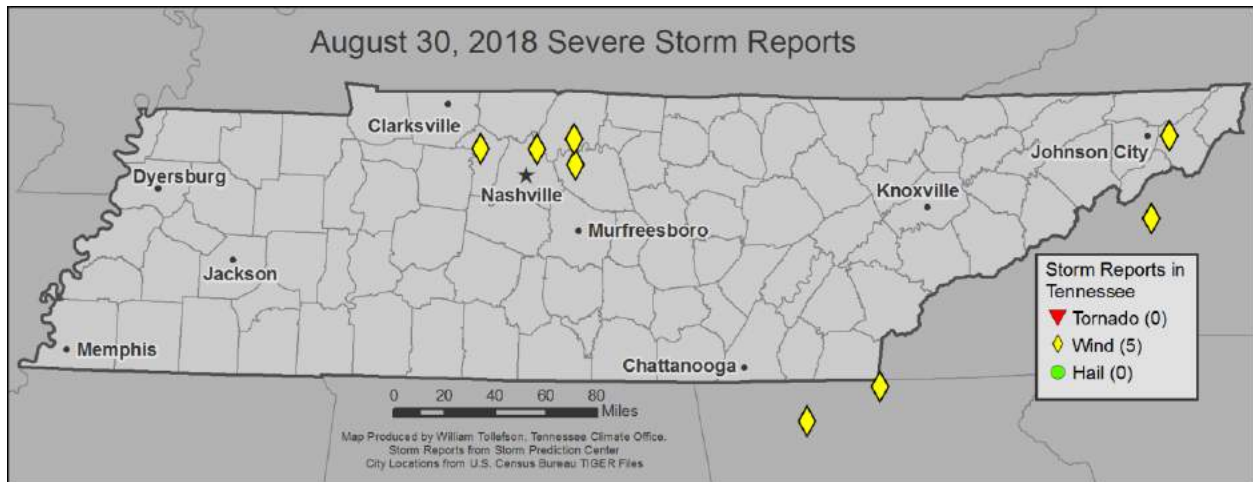


Time	Speed	Location	County	Lat	Lon	Comments
5:15	62	8 WNW LEXINGTON	HENDERSON	35.7	-88.52	(MEG)



Time	Speed	Location	County	Lat	Lon	Comments
19:40	-	4 NNE NORENE	WILSON	36.11	-86.22	TREE DOWN IN THE ROADWAY AT 1108 TRAMMEL LANE. FURTHER NORTH IN LEBANON... SEVERAL AWNINGS AND COVERINGS REPORTEDLY DAMAGED AT THE WILSON COUNTY FAIRGROUNDS. (OHX)

20:44	-	2 E PIKEVILLE	BLEDSON	35.61	-85.16	A COUPLE OF TREES AND A POWER LINE DOWN ON OLD SPENCER ROAD AND ANOTHER TREE DOWN ON BRADLEY WYATT ROAD. (MRX)
21:45	-	SPRING CITY	RHEA	35.69	-84.86	A COUPLE OF TREES DOWN IN SPRING CITY (MRX)
1:42	-	2 NNW ESTILL SPRINGS	FRANKLIN	35.29	-86.15	SMALL TREE AND SOME BRANCHES DOWN IN ESTILL SPRINGS. TIME ESTIMATED FROM RADAR. (HUN)



Time	Speed	Location	County	Lat	Lon	Comments
20:00	-	ELIZABETHTON	CARTER	36.34	-82.23	TREE FELL ON A HOUSE ON BEAR HOLLOW RD (MRX)
21:42	-	5 ENE MOUNT JULIET	WILSON	36.23	-86.44	TREES DOWN INCLUDING ONE ON POWER LINES NEAR HIGHWAY 70 AND HIGHWAY 109. (OHX)
22:25	-	GOODLETTSVILLE	DAVIDSON	36.32	-86.71	A SMALL TREE WAS BLOWN DOWN AND SMALL HAIL WAS OBSERVED. (OHX)
22:35	-	GALLATIN	SUMNER	36.38	-86.45	POWER LINES WERE BLOWN DOWN AND A TREE FELL ON A HOUSE IN GALLATIN... REPORTED BY GALLATIN FD. (OHX)
22:59	-	4 NW ASHLAND CITY	CHEATHAM	36.32	-87.11	TREES DOWN NORTHWEST OF ASHLAND CITY. (OHX)

CPC outlooks for the next month:

The climate prediction center outlooks for September indicate that Tennessee, along with much of the U.S., should expect warmer than normal conditions, with the highest confidence in the northeast. The outlook for precipitation includes almost all Tennessee in the equal chances category, indicating a lack of a strong climate signal for our region.

