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2018 August - Tennessee Monthly Climate Report

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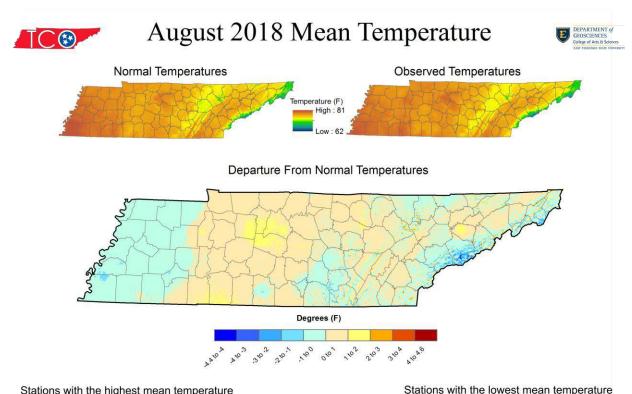
August 2018 Tennessee Climate Summary

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 ±1°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).



Stations with the highest mean temperature

RAWS

WBAN

SHILOH NMP TENNESSEE

MEMPHIS WEO

Name	Station Type	(F)	Map Data From: PRISM Climate Group
GERMANTOWN 4SE	COOP	82.1	Oregon State University. 1980-2010 Normals Used
BIG SOUTH TENNESSEE	RAWS	81.7	Station Data retrieved from SC ACIS
MEMPHIS INTERNATIONAL AP	WBAN	81.3	

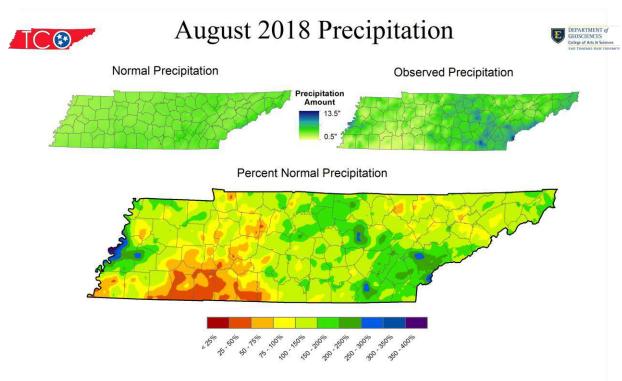
80.8

80.1

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		
CATUMBUDG 2 CW	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).



Stations with the most precipitation

	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

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

Stations with the least precipitation

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	СООР	98
GERMANTOWN 4SE	COOP	98
NEAPOLIS RESEARCH STATION	СООР	98
CHEATHAM LOCK & DAM	COOP	98
SHILOH NMP TENNESSEE	RAWS	97
LEBANON	СООР	97
DECATURVILLE	СООР	97
CAMDEN	COOP	97
AMES PLANTATION	СООР	97
SELMER	СООР	97

Coldest Stations (lowest min temp):

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

Warmest Stations (highest mean temps):

Trainiest stations (mg.rest mean temps).							
Name	Station Type	Mean Temperature (F)					
GERMANTOWN 4SE	СООР	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	СООР	79.9					
NASHVILLE BERRY FIELD	СООР	79.7					
CAMDEN	СООР	79.6					

Coolest Stations (lowest mean temps):

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

Wettest Stations (highest rainfall totals):

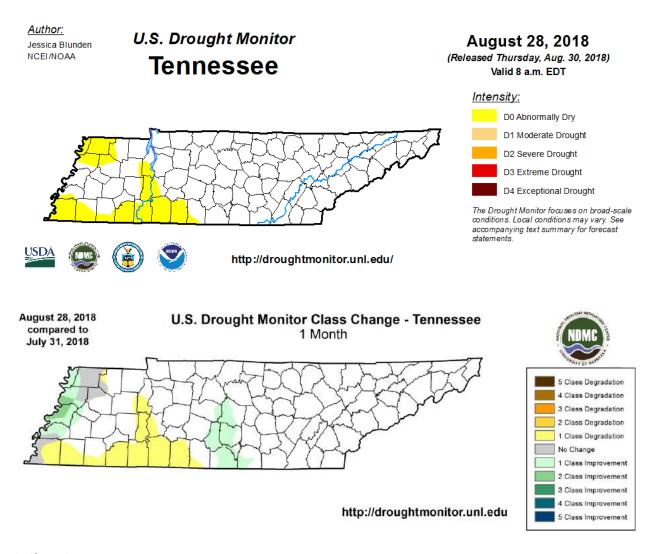
Name	Station Type	Total Precipitation (in)
MT LECONTE	СООР	11.31
MURFREESBORO STONES RIVER N.B.	СООР	11.3
DAYTON 2SE	СООР	9.73
NEWFOUND GAP	СООР	9.43
WHITWELL 4.5 ENE	CoCoRaHS	9.26
OOLTEWAH 6.7 NNE	CoCoRaHS	9.22
CORNERSVILLE 3.6 SE	CoCoRaHS	8.83
BRENTWOOD	СООР	8.51
SMYRNA 3.0 ESE	CoCoRaHS	8.44
MONTEREY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

Driest Stations (lowest rainfall totals):

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

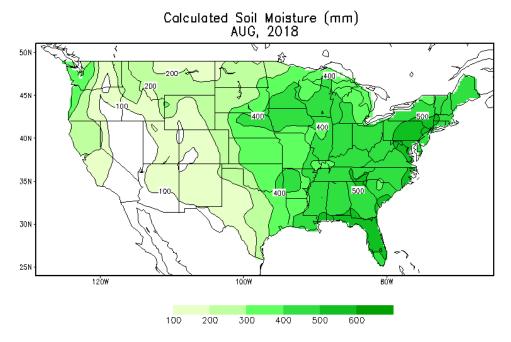
Drought Monitor:

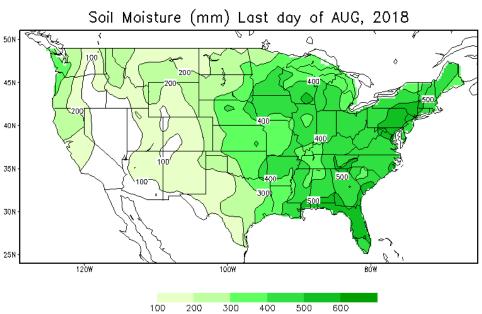
Due to dry conditions in parts of southwest Middle Tennessee and southern West Tennessee, D0 drought conditions were expanded in those regions, while rainfall along the Mississippi River lead to a reduction of D1 drought conditions to either D0 or drought-free conditions during the month of August. D0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

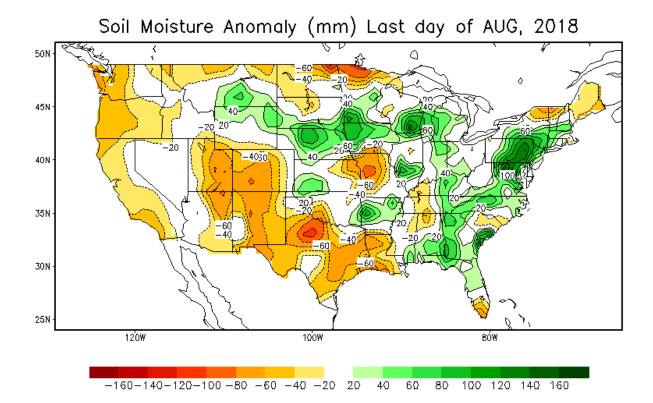


Soil Moisture:

Drying conditions across the western half of the state also produced drops in available soil moisture with soil mostiure 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 anomolies in soil moisture by the end of the month.

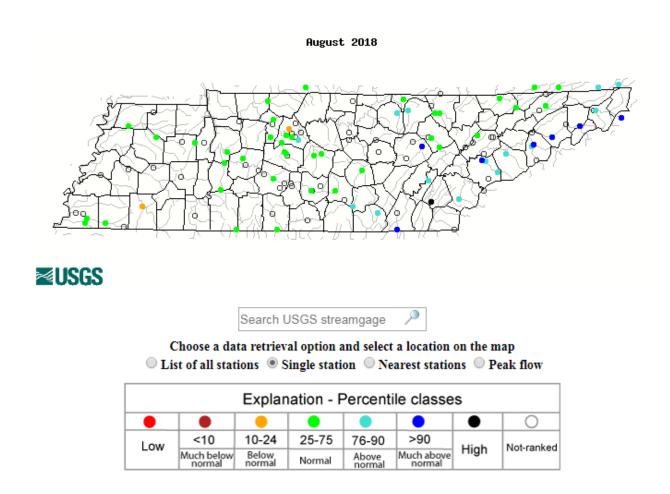






Streamflow:

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.

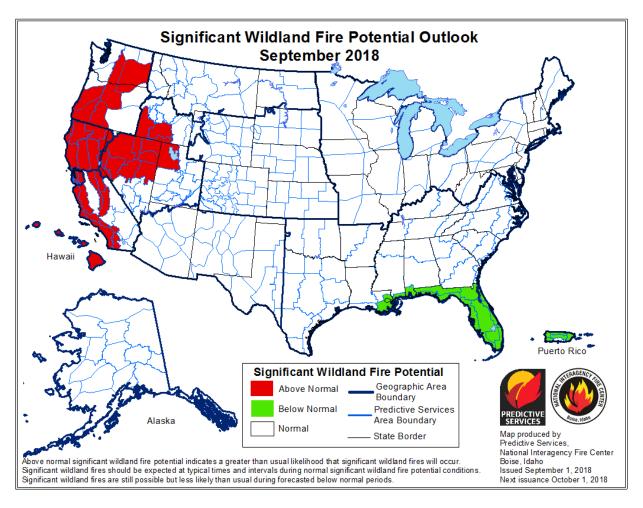


Miscellaneous:

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					
Сгор	This Week	Last Week	2017	5 Year Avg.	Item	Very Poor	Poor	Fair	Good	Excellent
	Percent	t					Per	cent		
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						

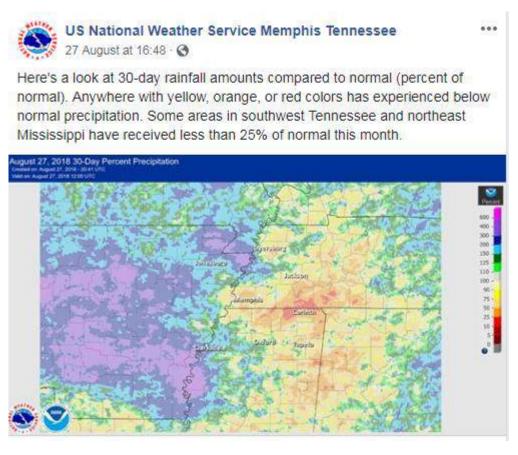
Fire Danger: The interagency fire center outlook for September shows normal potential for fires across the state for the upcoming month.



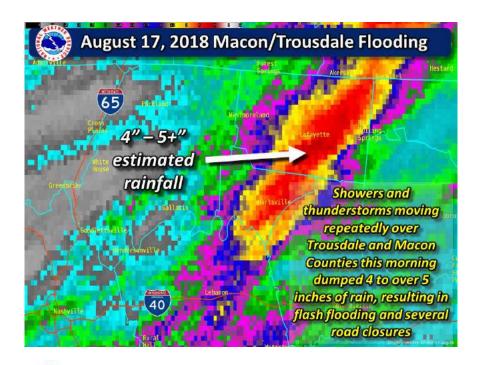
Story of the month:

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 - 3

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 Drown!



16,568 Views

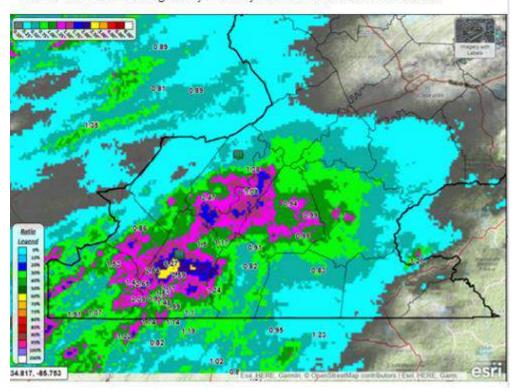
Kody Daniel

17 August at 08:58

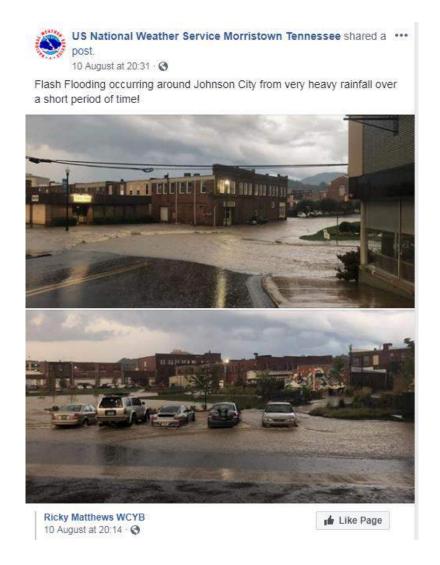
WellIII dixon springs has got a bad case of the flood...

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

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

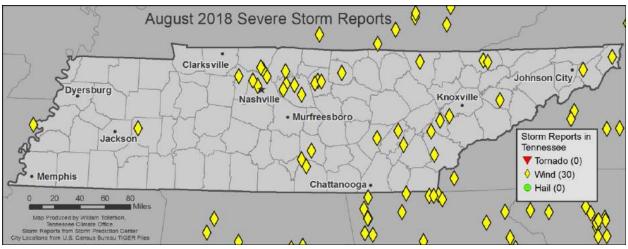


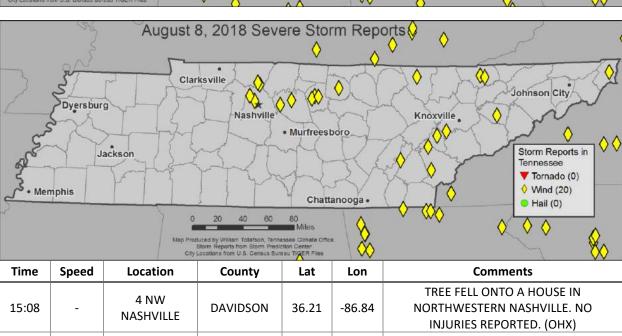
And isolated, stationary thunderstorms caused flash flooding to occur in the streets of Johnson City on the 6^{th} and 10^{th} .



Storm reports:

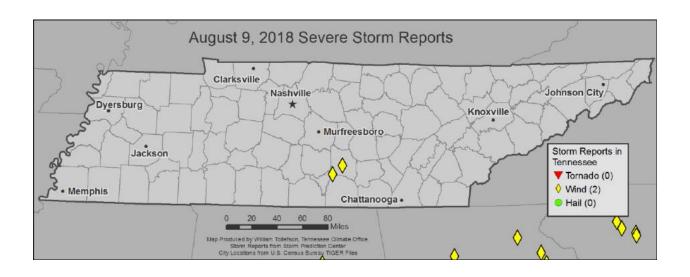
There were five days this month with reported severe storm damage, totaling 30 wind damage reports, with the most coming on the 8^{th} of August.



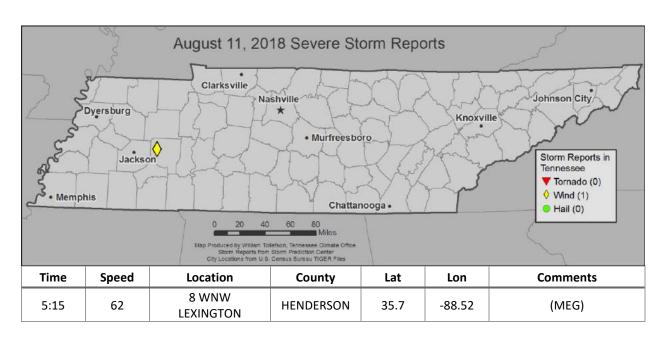


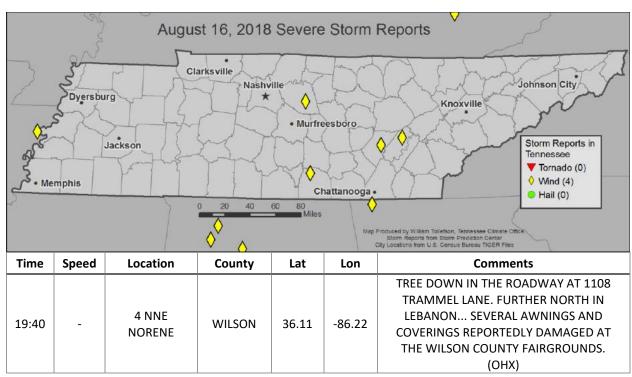
Time	Speed	Location	County	Lat	Lon	Comments
15:08	-	4 NW NASHVILLE	DAVIDSON	36.21	-86.84	TREE FELL ONTO A HOUSE IN NORTHWESTERN NASHVILLE. NO INJURIES REPORTED. (OHX)
15:08	-	10 NW NASHVILLE	DAVIDSON	36.27	-86.91	REPORT OF TREES DOWN AND POWER OUTAGES ACROSS THE NORTHWESTERN PORTIONS OF DAVIDSON COUNTY. (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 COUNTYINCLUDING COOPERTOWNRIDGETOPWHITE HOUSEAND 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)

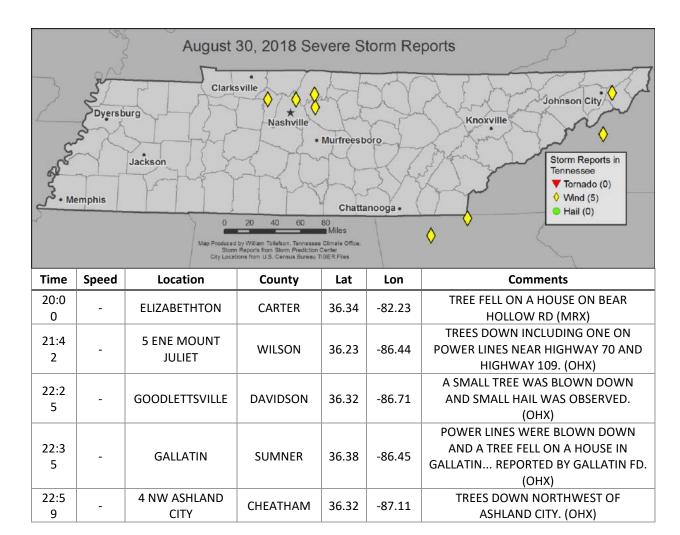


Time	Speed	Location	County	Lat	Lon	Comments
18:02	-	TULLAHOMA	COFFEE	35.37	-86.22	TSPOTTER REPORT AND PHOTO OF A TREE
						SPLIT ON 12 OAKS ROAD AND TREE LIMBS
						DOWN ON HUNTINGTON PLACE (OHX)
18:28	-	MANCHESTER	COFFEE	35.47	-86.08	TSPOTTER REPORT AND PHOTO OF A TREE
						DOWN ON INGRAM STREET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





20:44	-	2 E PIKEVILLE	BLEDSOE	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)



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.

