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Tennessee Climate Office Monthly Report

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1-1-2019

### 2019 January - Tennessee Monthly Climate Report

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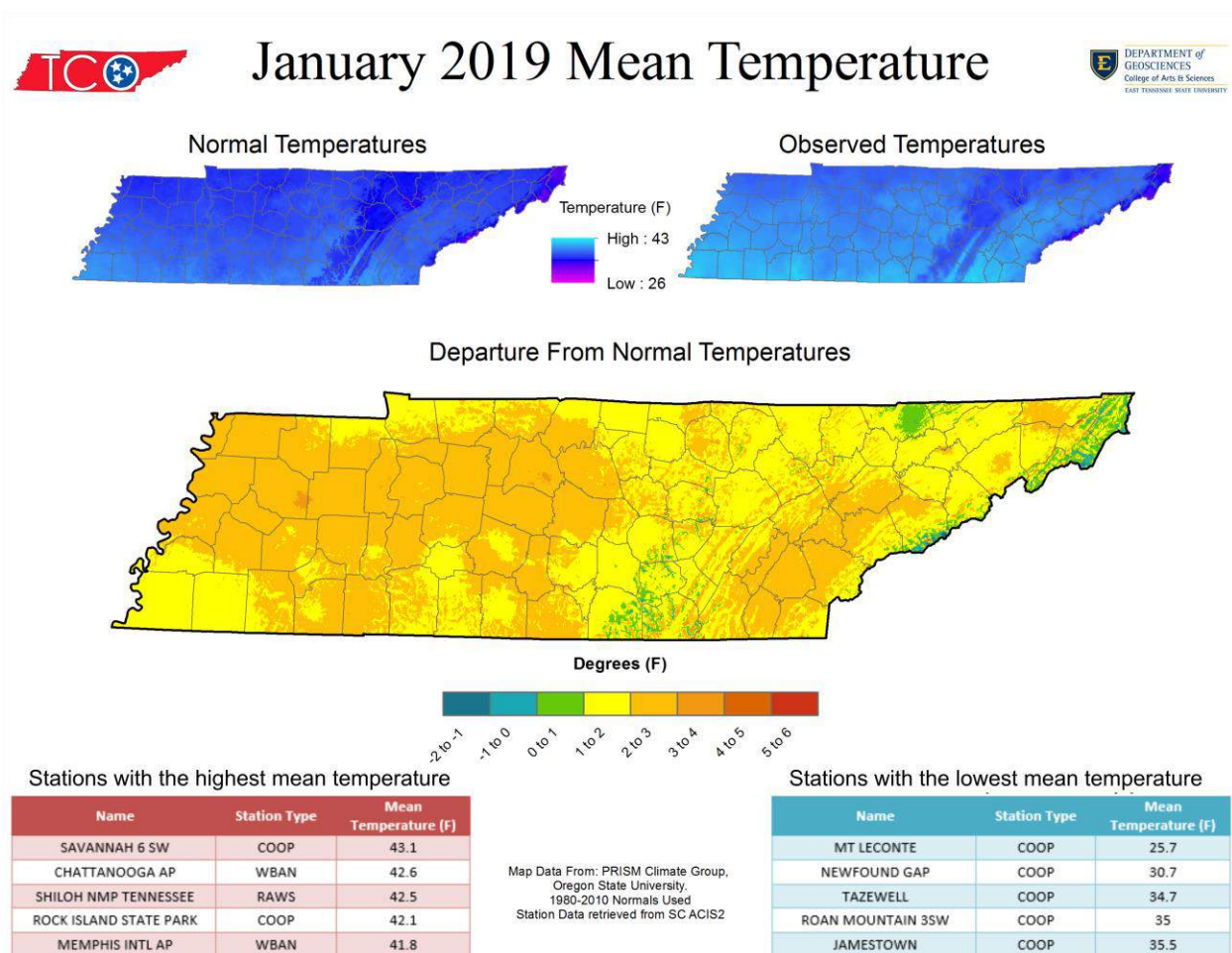
# January 2019 Tennessee Climate Summary

Prepared by William Tollefson and Dr. Andrew Joyner

Tennessee Climate Office \* East Tennessee State University

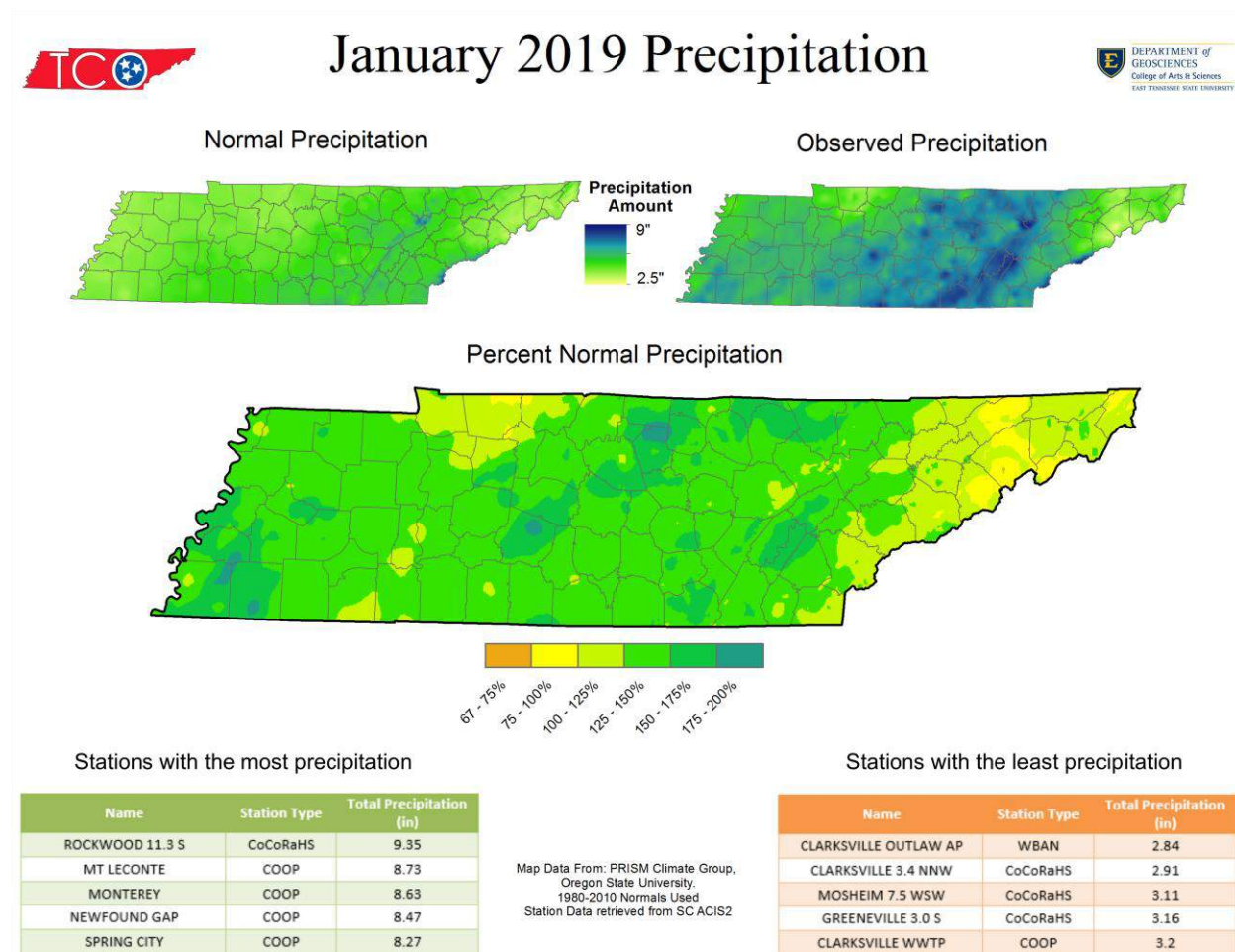
## Monthly Temperature Summary:

Temperatures were highly variable for the month with most areas of the state recording mean temperatures over 10 degrees above normal for the first week of the year, and a major cold snap ending the month with temperatures statewide dipping into the teens and single digits. Despite the cold end to the month, average temperatures were 1-3°F above normal for large portions of the state. Both Elizabethton and Kingsport, in East Tennessee, had monthly temperature ranges of 67 degrees, from lows of 8°F to highs of 75°F!



## Monthly Precipitation Summary:

Precipitation was at to above normal for most of the state with a large swath of the state recording between 125% and 150% normal precipitation. Some areas in northeast Tennessee were the exception to the wet pattern, and recorded below normal precipitation. Heavy precipitation occurred in the second half of the month, with almost all areas of West and Middle Tennessee as well as the southern Cumberland Plateau recording over two inches of rain from the 17<sup>th</sup> to the 23<sup>rd</sup>.



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

**Hottest Stations (highest max temp):**

Name	Station Type	Max Temperature (F)
ELIZABETHTON	COOP	75
KINGSPORT	COOP	75
CROSSVILLE 7 NW	WBAN	73
SPARTA WASTEWATER	COOP	73
GREENEVILLE EXP STA	COOP	73
SAVANNAH 6 SW	COOP	72
GATLINBURG 2 SW	COOP	72
ROCK ISLAND STATE PARK	COOP	72
GERMANTOWN 4SE	COOP	72
NASHVILLE INTL AP	WBAN	71
SHILOH NMP TENNESSEE	RAWS	71
LYNCHBURG	COOP	71
ATHENS	COOP	71
LENOIR CITY	COOP	71
SEVIERVILLE	COOP	71
MILAN EXP STN	COOP	71
NASHVILLE BERRY FIELD	COOP	71

*Tie for 10<sup>th</sup> hottest at 71°F*

**Coldest Stations (lowest min temp):**

Name	Station Type	Lowest Temperature (F)
MT LECONTE	COOP	-5
BRENTWOOD	COOP	-1
NEWFOUND GAP	COOP	0
PICKETT STATE PARK	COOP	1
ROAN MOUNTAIN 3SW	COOP	2
INDIAN GRAVE TENNESSEE	RAWS	6
TAZEWELL	COOP	7
WHITE HOUSE	COOP	7
BRISTOL AP	WBAN	8
BIG SOUTH TENNESSEE	RAWS	8
MONTEREY	COOP	8
ELIZABETHTON	COOP	8
ROGERSVILLE 1 NE	COOP	8
KINGSPORT	COOP	8

*Tie for 10<sup>th</sup> coldest at 8°F*

**Warmest Stations (highest mean temps):**

Name	Station Type	Mean Temperature (F)
SAVANNAH 6 SW	COOP	43.1
CHATTANOOGA AP	WBAN	42.6
SHILOH NMP TENNESSEE	RAWS	42.5
ROCK ISLAND STATE PARK	COOP	42.1
MEMPHIS INTL AP	WBAN	41.8
FAYETTEVILLE WATER PLANT	COOP	41.6
AMES PLANTATION	COOP	41.3
SHELBY BOTTOMS NATURE CENTER	COOP	41.3
CLEVELAND FILTER PLANT	COOP	41.2
OAK RIDGE ASOS	WBAN	41
LENOIR CITY	COOP	41
GERMANTOWN 4SE	COOP	41

*Tie for 10<sup>th</sup> warmest with mean temperature of 41°F*

**Coolest Stations (lowest mean temps):**

Name	Station Type	Mean Temperature (F)
MT LECONTE	COOP	25.7
NEWFOUND GAP	COOP	30.7
TAZEWELL	COOP	34.7
ROAN MOUNTAIN 3SW	COOP	35
JAMESTOWN	COOP	35.5
MONTEREY	COOP	35.8
ONEIDA	COOP	36.2
CROSSVILLE MEMORIAL AP	WBAN	36.4
MONTEAGLE	WBAN	36.6
COALMONT	COOP	36.8

**Wettest Stations (highest rainfall totals):**

Name	Station Type	Total Precipitation (in)
ROCKWOOD 11.3 S	CoCoRaHS	9.35
MT LECONTE	COOP	8.73
MONTEREY	COOP	8.63
NEWFOUND GAP	COOP	8.47
SPRING CITY	COOP	8.27
WHITWELL 3.0 SSE	CoCoRaHS	8.27
DUNLAP 3.1 NW	CoCoRaHS	8.23
PETROS 0.2E	CoCoRaHS	8.17
DECATUR 7NE	COOP	8.13
CARTHAGE 8.7 NNE	CoCoRaHS	8.1

**Driest Stations (lowest rainfall totals):**

Name	Station Type	Total Precipitation (in)
CLARKSVILLE OUTLAW AP	WBAN	2.84
CLARKSVILLE 3.4 NNW	CoCoRaHS	2.91
MOSHEIM 7.5 WSW	CoCoRaHS	3.11
GREENEVILLE 3.0 S	CoCoRaHS	3.16
CLARKSVILLE WWTP	COOP	3.2
BAILEYTON 1.0 NW	CoCoRaHS	3.33
CLARKSVILLE 11.4 SE	CoCoRaHS	3.35
GREENEVILLE EXP STA	COOP	3.39
GREENEVILLE 10.1 S	CoCoRaHS	3.39
FAIRFIELD GLADE 0.5 SE	CoCoRaHS	3.43

### Snowiest Stations (total monthly snowfall):

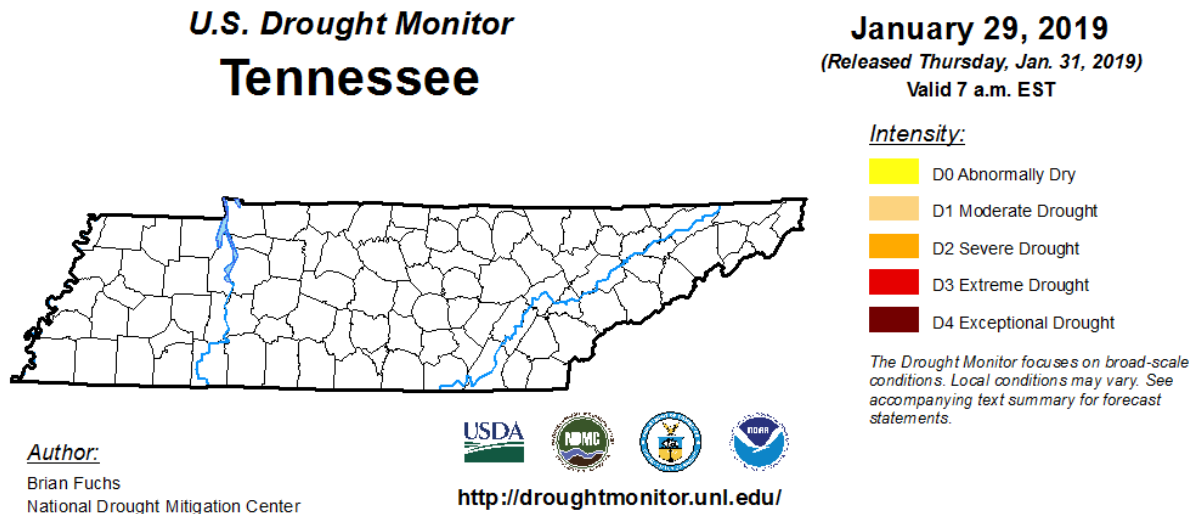
Name	Station Type	Total Snowfall (in)
MT LECONTE	COOP	9.5
NEWFOUND GAP	COOP	6.3
TOWNSEND 5S	COOP	3
MORRISTOWN WFO	COOP	2
KNOXVILLE AP	WBAN	1.8
BRISTOL AP	WBAN	1.5
ROAN MOUNTAIN 3SW	COOP	1.5
UNION CITY	COOP	1.4
WHITE HOUSE	COOP	1.2
GREENEVILLE EXP STA	COOP	1
GREENBRIER 1.4 N	CoCoRaHS	1

*Tie for 10<sup>th</sup> snowiest with 1" of snow.*

*An additional 15 stations reported measurable snowfall, and 12 more reported trace amounts of snow during the month of January.*

### Drought Monitor:

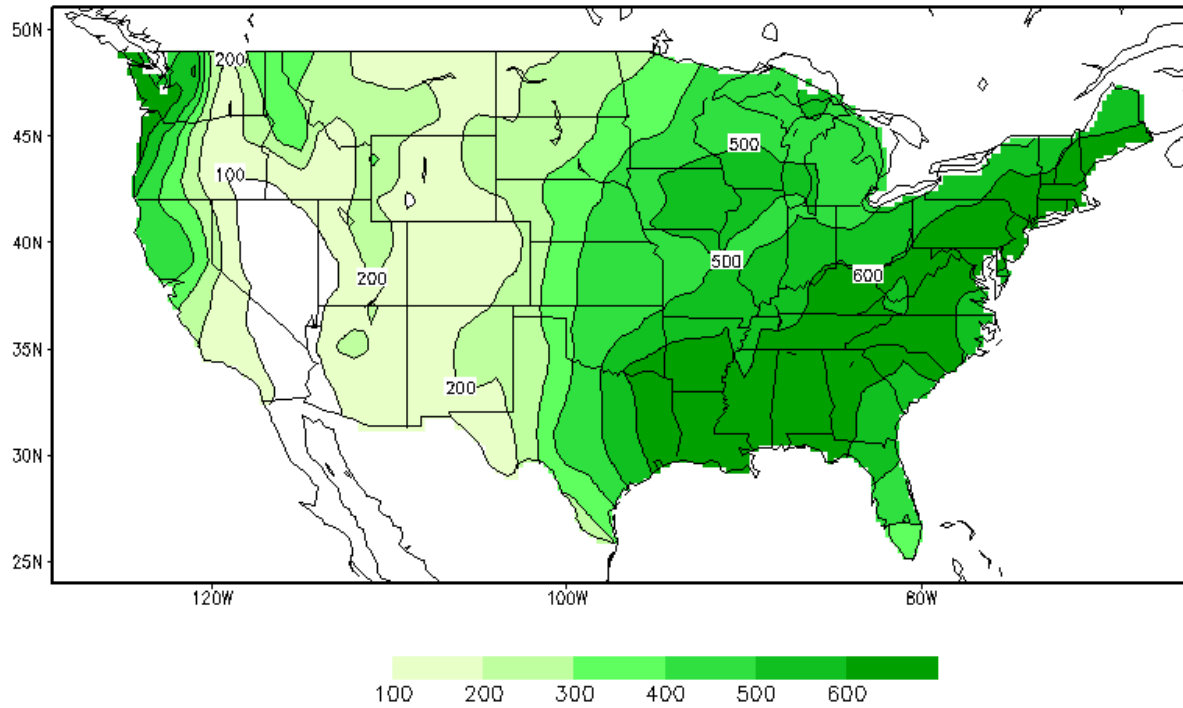
Tennessee continued to be drought free during the month of January.



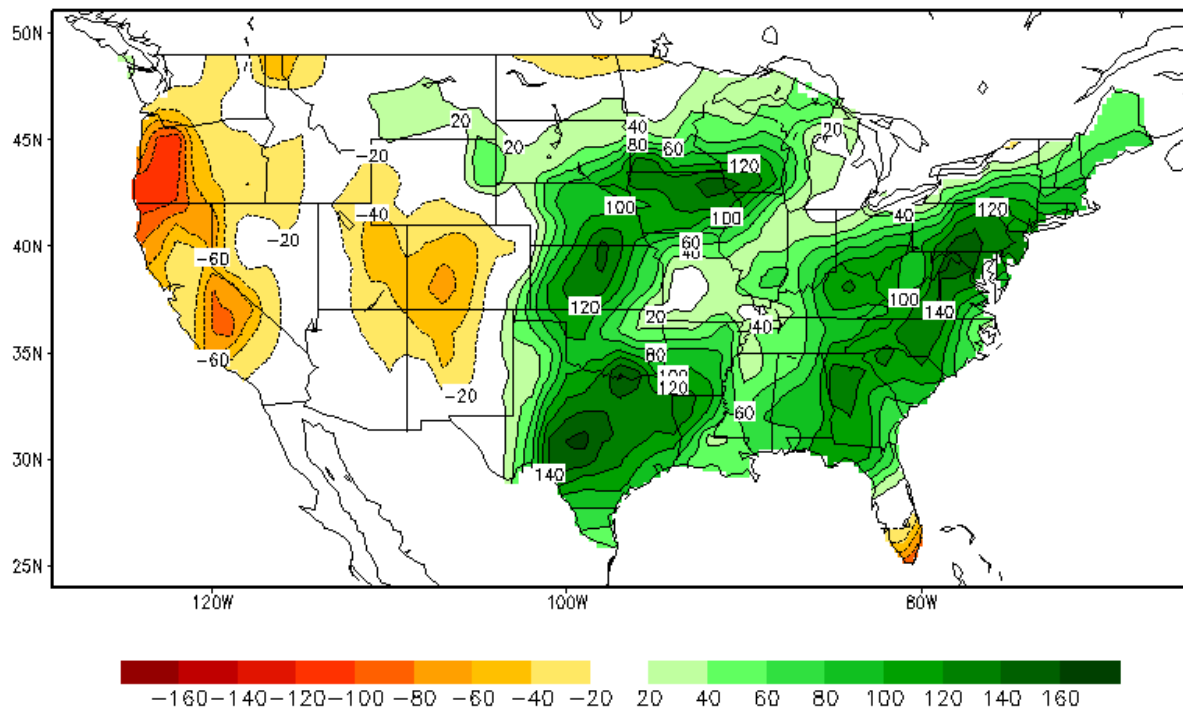
### Soil Moisture:

Soil moisture readings across the state were near or above 600 mm, which is above normal for this time of the year. Parts of the western Tennessee River Valley recorded an increase of soil moisture through the month, however there was a drying trend in the eastern part of the state.

Calculated Soil Moisture (mm)  
JAN, 2019

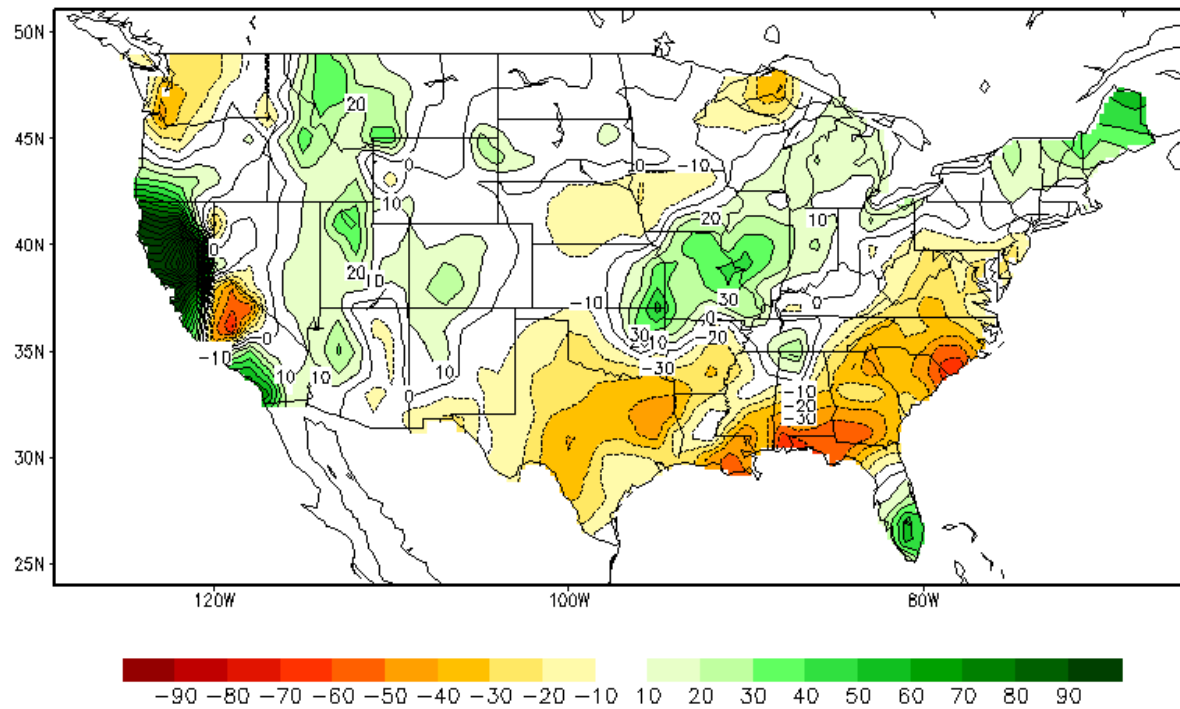


Calculated Soil Moisture Anomaly (mm)  
JAN, 2019





Calculated Soil Moisture Anomaly Change  
JAN 31, 2019 from DEC.31



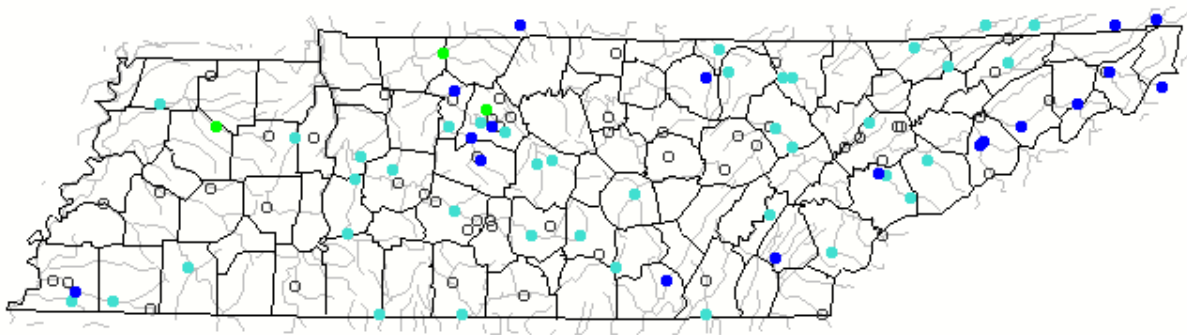
## Streamflow:

January average streamflow was in the normal to much above normal range for all reporting stream gauges in the state. Streams along the mountains as well as in the Nashville metro area were among those in the “much above normal” category meaning that streamflow this month was in the 90<sup>th</sup> percentile compared to normal.

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

Tennessee ▼ or Water-Resources Regions ▼









January 2019



Search USGS streamgage 🔍

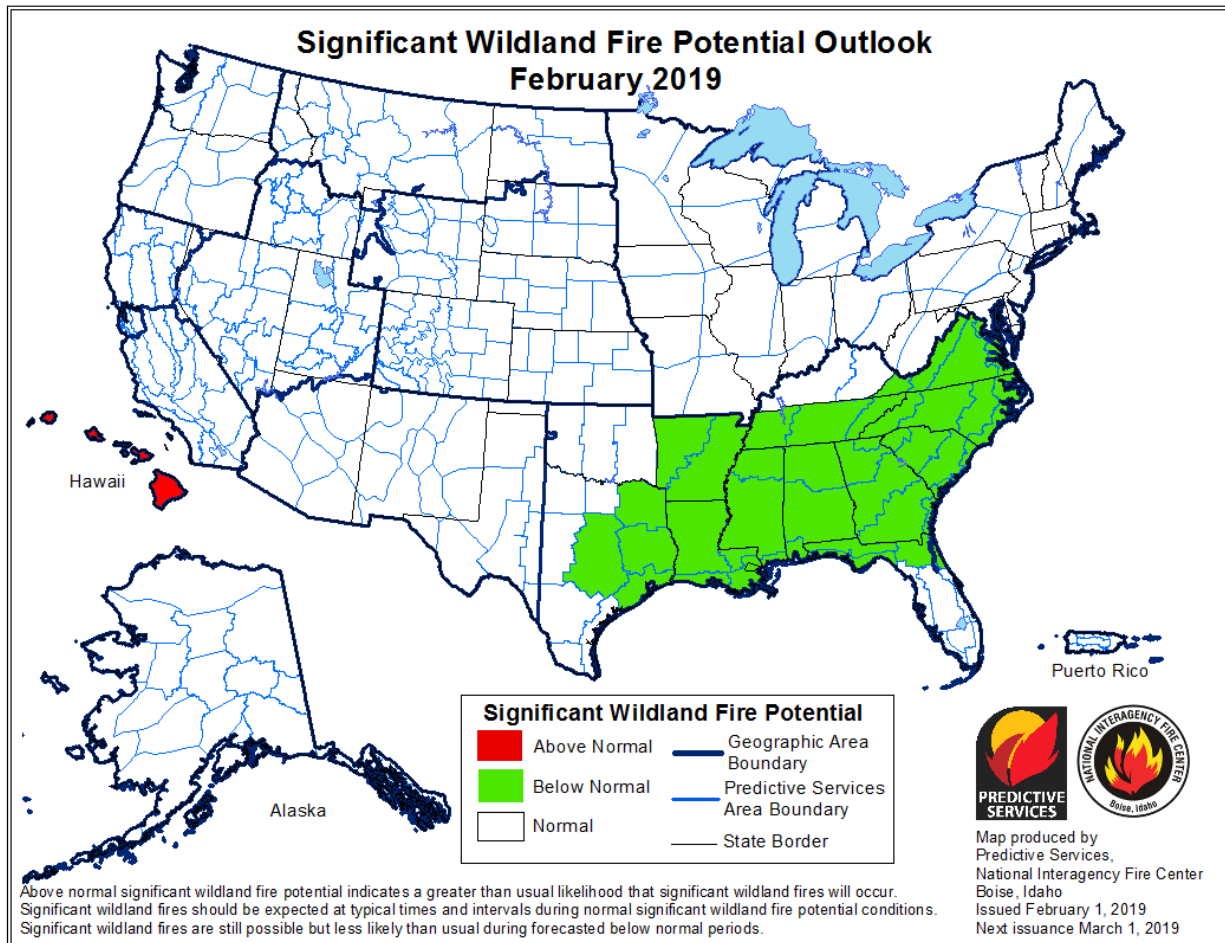
Choose a data retrieval option and select a location on the map

☐ List of all stations ☒ Single station ☐ Nearest stations ☐ Peak flow

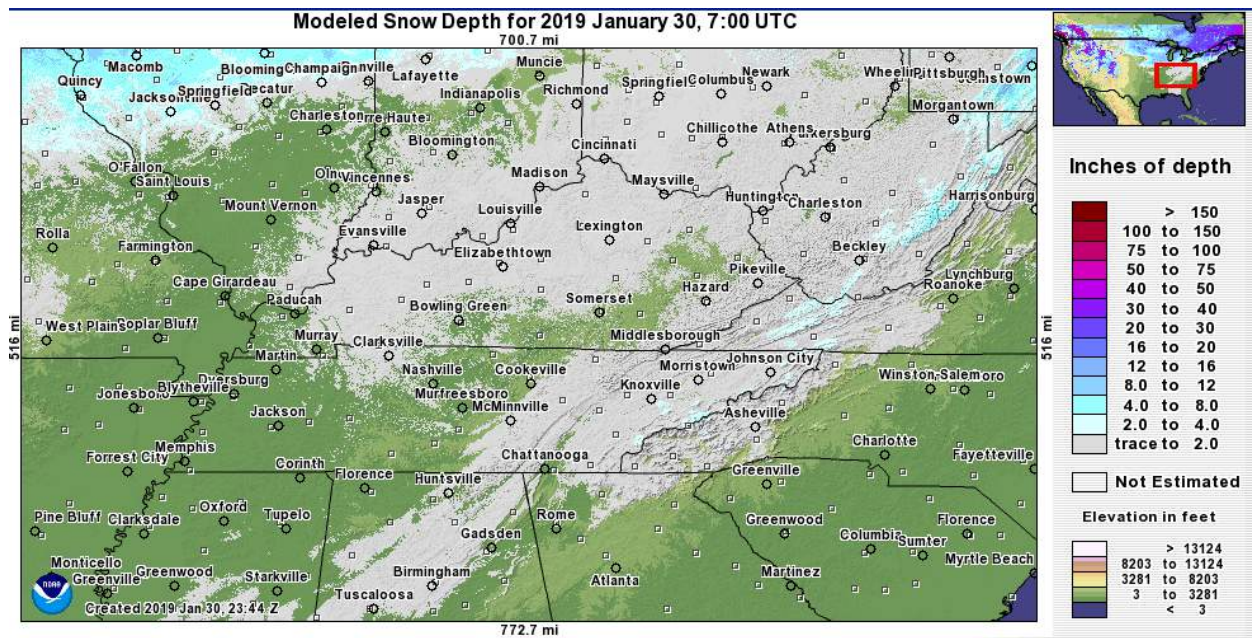
Explanation - Percentile classes							
							
Low	<10	10-24	25-75	76-90	>90	High	Not-ranked
	Much below normal	Below normal	Normal	Above normal	Much above normal		

### Miscellaneous:

**Fire Danger:** Fire danger is forecast to be below normal for the month of February.



**Snowfall:** Minor snowfalls occurred several times in the second half of the month, with snowfall recorded in West Tennessee on the 19<sup>th</sup>, East TN Mountains on the 21<sup>st</sup>, East Tennessee on the 29<sup>th</sup>, and Middle and East Tennessee on the 30<sup>th</sup>. Outside of the higher elevation mountains, Townsend at the base of the Smoky Mountains recorded the most snowfall with a monthly total of 3 inches. 1-2 inches of total snowfall was common in East Tennessee, and Union City in northern West Tennessee recorded 1.4 inches of snow for the month. The largest extent of snowfall of any day during the month occurred on January 30<sup>th</sup>.

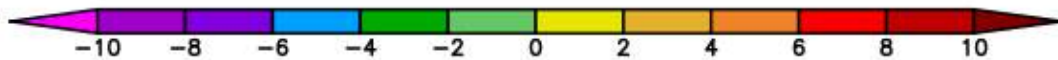
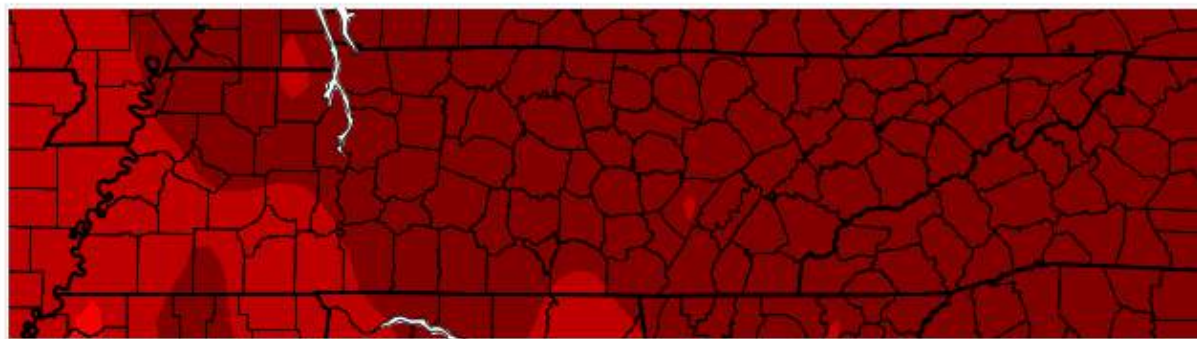


### Story of the month:

The biggest climate story of the month for Tennessee, was the warm period to start the month. The Tri-Cities recorded record warmth on New Year's Eve (Dec 31.) and the first week of 2019 maintained that warm pattern with almost all areas in the state averaging more than 10°F above normal from the 3<sup>rd</sup> to the 9<sup>th</sup> of the month. Record high temperatures in the upper 60's to lower 70's were set on Jan 7<sup>th</sup> in Oak Ridge, and Jan 8<sup>th</sup> at Oak Ridge, Chattanooga, Nashville, and Clarksville.

## Departure from Normal Temperature (F)

### 1/3/2019 – 1/9/2019

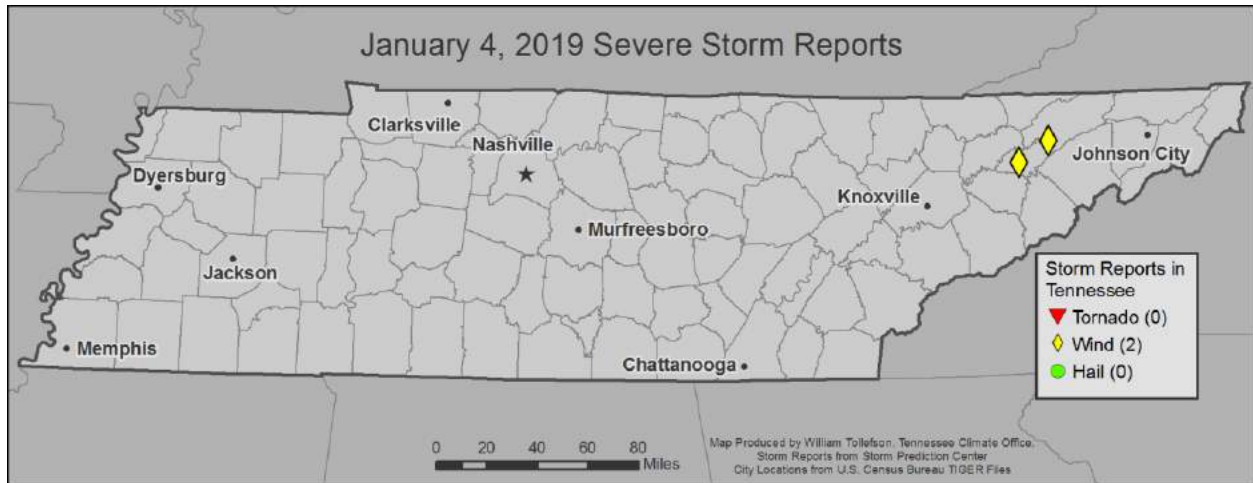


Generated 1/10/2019 at HPRCC using provisional data.

NOAA Regional Climate Centers

## Storm Reports:

There was one day with severe wind damage (January 4<sup>th</sup>) in parts of northeast TN.



Time (UTC)	Speed	Location	County	Lat	Lon	Comments
23:43	--	ST. CLAIR	HAWKINS	36.33	-83.09	SCATTERED TREES AND POWER LINES DOWN THROUGHOUT THE COUNTY. (MRX)
0:10	--	MORRISTOWN	HAMBLEN	36.21	-83.3	NUMEROUS REPORTS OF TREES... LIMBS... AND POWER LINES DOWN THROUGHOUT THE COUNTY. (MRX)

In addition to the two thunderstorm related severe wind reports on January 4<sup>th</sup>, a mountain wave wind event occurred on January 23<sup>rd</sup> as a strong warm front brought southerly winds over the Southern Appalachians. This event resulted in many downed trees in the mountains and foothills of East Tennessee as well as roof damage to Camp Creek Elementary School in Greene County.





*Roof damage to Camp Creek Elementary School in Greene County on January 23<sup>rd</sup> [image via WHJL news]*

### CPC Outlooks for Next Month:

Parts of the southeast have a slight chance of observing above normal temperatures for February, this includes the eastern third of Tennessee. Tennessee has a 50% chance of observing above normal precipitation during February.

