

Tennessee's Climate

THE COCORAHS 'STATE CLIMATES' SERIES

Tennessee A Tale of Three Climates

By Joanne Logan, Tennessee CoCoRaHS State Coordinator, Univ. of Tennessee

The flag of Tennessee describes it all: the three stars represent the three grand divisions of Tennessee.

They could also indicate the three different types of climate that can be found here owing to the topography and hydrology of the state. The flattish plain of West Tennessee, an extension of the Gulf Coastal Plain, is climatically the warmest part of the state. Temperatures in this area average around 62 F, and precipitation ranges between 46" and 54" increasing as one gets closer to Memphis. The record highest temperature in the state, 113 F, was recorded in Perryville, just to the west of the Tennessee River. West Tennessee also is the most active area of the state for severe weather, and, owing to its presence north of the Gulf Coastal states, is susceptible to the remnants of tropical storms and hurricanes.

Middle Tennessee has elements of West Tennessee's general climate, but East Tennessee's temperature and precipitation have variability. Middle Tennessee contains the Cumberland Plateau that can record some of the highest precipitation totals in the state, though they are not as high as in the Smoky Mountains. In the summer, the temperatures in the southern part of the region are on par with those of West Tennessee. Nonetheless, Middle Tennessee's climate is often characterized, especially in the winter, as perhaps the most variable in the state. Snow often falls in the Cumberland Plateau while it would normally be raining in the rest of Middle Tennessee. Case in point: Nashville, in the Central Basin, averages 5.4 inches of snowfall a year; but the Crossville, at about the same latitude but on the Cumberland Plateau, experiences 14.4 inches per year. The Central Basin also is the driest part of Middle Tennessee at 47" in Nashville, while the surrounding area has values at mostly above 50 inches, with Monterey reaching over 62 inches.

East Tennessee's climate is dominated by the "rain shadow" effect, offered by the unique geography of the Cumberland Plateau and the Appalachian Mountains. Both the highest and lowest rainfall totals can be found here. Bristol has the lowest total in the state with an average annual total of 41 inches. The highest totals, also in the east, are along the Great Smoky Mountains, with averages topping out over 85 inches. Some of the highest peaks of the Appalachians are here, including Clingman's Dome and Mt. LeConte, with elevations above 6,500 feet. These peaks have an average July temperature comparable to parts of the southern Hudson Bay! The average annual temperature at these peaks is 45F. For obvious reasons, then, the lowest recorded temperature was set at -32F in Mountain City.

Overall, Tennessee's climate is relatively mild, largely controlled by the state's topography, proximity to cyclone tracks, and to a lesser extent by latitude. Its average precipitation is 53.1 inches, with late winter and early spring being the wettest seasons, with a second rainy season in midsummer. It has seen its share of extremely dry weather when, in 1941 and 2007, the average annual precipitation didn't exceed 40 inches. Yet it has also been extremely wet, as there have been multiple years in which the average annual precipitation was above 60 inches, including 2009.

For more information on Tennessee's Climate, please visit the Southern Regional Climate Center's website at: <http://www.srcc.lsu.edu/>

To learn more about the "Climates of our Fifty States" and view past state climate messages, visit our [50 States Climate Page](#).

We will be taking a short break from our state climates series. Please join us again in April when we will visit the states of the Midwest Regional Climate Center. Our annual "*CoCoRaHS March Madness*" begins on Tuesday!

