



Changes in daily rain, not flood or drought, might - Post and Courier, The (Charleston, SC) - November 21, 2017 - page 001

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Less rain is falling day to day in South Carolina. That could mean bigger trouble for water users and the environment than extreme storms or drought.

The unsettling finding comes from a recent study of more than 3,000 weather stations across the country, including several in the Palmetto State. The study also concluded that differences in the rainfall varied too much from one locality to another for any one-size-fits-all solution to compensate for it.

"South Carolina showed a decrease in the average daily precipitation. This means that over time, rainy days in South Carolina have dropped less and less rain every year - 1.25 mm decrease per year," said Praveen Kumar, a University of Illinois hydrologist, the study's lead author.

Incongruously, the state is seeing more days each year that are at least partly rainy. But the rainy periods just aren't lasting as long, Kumar said. Over time, those changes will be the big factor in deciding how we use water for homes, farms, businesses, and for how we manage woodlands and wildlife.

"Hydroelectric plants, stormwater drainage systems - any structure that relies on an assumption of expected precipitation - could be vulnerable," said study co-author Susana Roque-Malo, also a University of Illinois hydrologist.

More than 960 billion gallons of water are withdrawn in South Carolina annually, according to recent S.C. Department of Health and Environmental Control statistics - a volume that strains the supply during drought years. At the same time, the region's water supply is dropping, according to other studies.

Despite the recent stormy years, drought has plagued the area for nearly two decades, including two severe episodes, the first at the turn of the century and then again in 2007-08.

In South Carolina, less rainfall could further complicate attempts by state officials to find ways to regulate water use during droughts, as the demand on the supply continues to grow. To manage the changes, more research is needed in "microclimates," specific local areas, the study authors suggested.

“Overall trends can be less important to people than what will happen in a particular place at a particular time,” said Mike Larsen, a College of Charleston atmospheric microphysicist.

Larsen didn’t take part in the study, but his research involves small-scale variations in rainfall.

“A radar only gives you a single estimate of rain rate for an area a few square blocks every five minutes or so, but anyone who has waited to run to their car for a few minutes knows that changes can occur on time scales much shorter than five minutes,” he said. “Change can be sudden, and it can be different in my backyard than in yours.”

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