

# Mississippi's Climate

## THE COCORAHS 'STATE CLIMATES' SERIES

### Mississippi's "Feast or Famine" Climatic Characteristic

By Charles Wax, Mississippi State Climatologist

Mississippi is situated in a region where water is a bountiful natural resource, tying with Louisiana as the "wettest" state in the union considering the average amount of precipitation over the state's land area. Annual average precipitation ranges from about 65" on the coast to about 50" inland on the northern border. The statewide average of about 56" over nearly 31,000,000 acres produces a volume in excess of 142,000,000 acre-feet of water delivered to the state by the atmosphere annually, providing both surface and groundwater in abundance. If that amount of precipitation was evenly spread over the state spatially and temporally, Mississippi would be a virtual "Garden of Eden." The reality of the state's precipitation regime, however, creates a much harsher environment as the actual precipitation distribution creates a "feast or famine" situation in many years, with the "average" traits seemingly never prevailing.

The climate of Mississippi is probably more extreme than most people would think. It has been as hot as 115 degrees F and as cold as -19 degrees F in the state. A thunderstorm on a July afternoon produced 15.68" of rain. Climatic variability is also higher than might be imagined, sometimes with significant consequences. For example, in 2007 east-central Mississippi received an annual total rainfall of 33.93". Climatologically there is only a 5% chance of receiving less than 36.14". Just two years later, 2009, that same area of the state received 86.11" of rain. There is only a 1% chance of receiving more than 84.79" in a year—that was a new record! Again, the distribution of the rain through the year caused the most problems—in 2007 there was too little during planting season for crops to be planted and in 2009 there was too much during harvest season for the crops to be harvested. Both cases of extreme climatic variability, only two years apart, caused millions of dollars of loss to the state's economy. Another case of extreme rainfall in 1979 caused record flooding in Jackson, the state's capital. Over the course of about 20 hours on April 12-13, nearly 20" of rain fell over the upper basin of the Pearl River. The subsequent runoff pushed the Pearl River beyond its flood stage of 18' in Jackson to almost 43'!

In all the cases mentioned above, and others yet to come, a denser measurement of precipitation amounts in both space and time could be used to better document the events, leading to better preparation and possibly mitigation efforts. The CoCoRAHS network can help provide that better record. If the CoCoRAHS observers had been in place in Mississippi in 1968 or 1979, we might be able now to provide evidence that the recorded precipitation and flood events were even more severe than currently thought! This is the value of the CoCoRAHS observers in a state like Mississippi where climate events can be highly variable and even economically destructive, but records and observations to properly substantiate the events are limited.

For more information on Mississippi's Climate, please visit the Mississippi Climate Office website at:  
<http://geosciences.msstate.edu/stateclimatologist.htm>