



# SOUTHERN CLIMATE *MONITOR*

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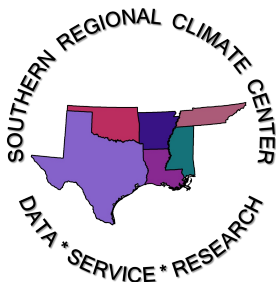
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## Weather-Ready Nation: A Vital Conversation on Tornadoes and Severe Weather

*John Ferree, National Weather Service Office of Climate Water and Weather Services*

Despite excellent warnings and longer than average lead times, more than 550 lives were lost in tornadoes in 2011 making it the third deadliest tornado year in U.S. history. On December 13-15, 175 national experts and leaders including emergency managers, academics, private sector weather forecasters, communication experts, news media and decision-makers gathered in Norman, Okla., to initiate a national conversation. Their goal was to identify, prioritize, and set in motion actions to improve the nation's resiliency against severe weather, especially tornadoes, to protect lives and property.

The national summit is the first in a series of Weather-Ready Nation conversations NOAA will participate in across the country in the coming year to learn from the experience and insights of important weather partners. A briefing on the initial priorities identified was delivered at a Weather-Ready Nation Town Hall meeting during the American Meteorology Society's Annual Meeting in New Orleans on January 23. The priorities will focus on how to improve impact-based forecasts and warnings, sharpen science-service linkages, and identify enhanced communication and service delivery innovations.

All plenary sessions from "Weather Ready Nation: A Vital Conversation" can currently be viewed on the workshop web site:

[http://www.joss.ucar.edu/events/2011/weather\\_ready](http://www.joss.ucar.edu/events/2011/weather_ready)

The conversation has just begun. Planning is well underway for the 2012 National Severe Weather Workshop on March 1-3, co-organized by the NOAA-NWS Storm Prediction Center, and held each year near Norman Oklahoma. This year's workshop will explore themes associated with developing a more Weather Ready Nation.

<http://www.norman.noaa.gov/nsww/>

The National Conversation to Build a Weather-Ready Nation will continue throughout 2012 with a number of symposia, events, town halls, workshops, and speeches. In her summary statements of the meeting, Dr. Kathryn Sullivan (Assistant Secretary of Commerce for Environmental Observation and Prediction) noted that "conversation is the seminal technology of all societal change." To join the conversation, check out the NWS Facebook page. Or find out more on the Weather-Ready Nation web page at <http://www.weather.gov/com/weatherreadynation>.

"Becoming a Weather-Ready Nation is a shared responsibility from the federal government to the individual citizen and everyone in between," said Jack Hayes, director of the National Weather Service. "NOAA's National Weather Service is committed to delivering the highest quality of forecast and warning services and fostering innovation. Building a Weather-Ready Nation will take the commitment of everyone we're engaging with through these national conversations."



## Year 2011 in Review

*Luigi Romolo, Southern Regional Climate Center*

For the southern region, 2011 will be long remembered as a year in which the weather dominated our day to day activities. Throughout the year, there were several major weather events that caught the attention of the entire nation. In fact, the South was impacted by almost every primary weather hazard that is known to occur in the southeastern United States. These hazards varied from drought and associated wildfires, to flooding, heat waves, tornadoes, and tropical cyclones.

Perhaps the biggest weather story for the Southern Region in 2011 was the drought that gripped much of the southeastern United States. Still ongoing, the drought really took hold in the Southern Region in the summer of 2010. By the start of 2011, almost 60 percent of the region was experiencing drought conditions. By early April, this number climbed to just over 80 percent. At this point, a strong majority of Texas, Oklahoma, Arkansas and Louisiana were experiencing severe drought or worse, with almost 40 percent of the region being classified as extreme drought. For Texas, this particular drought is arguably the worst drought in its history. Persistent dry patterns fed by an unrelenting La Nina led to over 5 billion dollars in agricultural impacts in Texas alone. In August, almost every county in the state was under a burn ban, as the dryness cultivated near perfect wildfires conditions. With over 22 major fires in 2011, Texas endured one of its worst wildfire seasons in recent memory and perhaps the worst on record for the state. For the year, Texas saw almost 4 million acres in burned territory, which accounts for almost half of the total burn area for the entire country. The fires claimed over 2800 homes. Perhaps the worst fire to occur in Texas was the Bastrop County Complex Fire. This fire started during Labor day weekend and lasted into early October. Ironically, this particular fire was fed by strong winds from Tropical Storm Lee (See

Below). By the time the fire was 100 percent contained, it had burned over 34 thousand acres of land and claimed over 1600 homes.

One factor that exasperated the drought and wildfires conditions mentioned above was the extremely high temperatures that led to one of the hottest summers on record for the entire country. The 2011 heat wave set countless records throughout the Southern Region. This past summer, the Dallas/Fort Worth area recorded 40 consecutive days in which temperatures exceeded 100 degrees F. This value fell two days short of the record which was set in 1980. These extremes were not confined to just the Dallas Area. Much of southwestern Oklahoma experienced 43 consecutive days with temperatures in excess of 100 degrees F. The historical perspective of this heat wave is illustrated by the fact the Oklahoma set the record for the hottest month in any state on record. This occurred in July, when Oklahoma recorded a state wide average temperature of 88.9 degrees F. The month of July was also the warmest July on record (1895-2011) for Texas, which recorded a state average temperature of 87.1 degrees F.

In the midst of drought, wildfires and heat waves came the 2011 Mississippi river flooding event. The event was catastrophic, producing flooding impacts that were comparable to that which was experienced in both 1927 and 1993. This was not too unusual in that there have been several floods along the river over the past 100 years. What made this particular event extremely odd was that the flood drove right through drought-ridden Arkansas, Mississippi and Louisiana. The flood was caused by a combination of heavy rainfall storms upstream that coincided with a heavier than normal spring melt. This produced an anomalously high spring freshet that pushed down the river causing record flood levels from



Tennessee to Louisiana. In Tennessee, the river reached a stage of 47.8 feet in Memphis on May 10th, making it the highest recorded stage since 1937. In Arkansas, a total of 14 fatalities were reported. Thousands of homes were evacuated in Tennessee alone. As the flood pushed southward into Louisiana, concerns grew for the safety of both Baton Rouge and New Orleans. Because of the imminent threat to catastrophic flooding in Louisiana's two largest cities, government officials decided to open the Morganza spillway. The spillway is a flood-control structure in Point Coupee Parish. Its primary design is to divert water from the Mississippi River into the Atchafalaya Basin. The spillway was opened for the first time in 37 years and diverted enough water to keep Baton Rouge and New Orleans from being inundated.

If all of this wasn't enough, the Southern Region also experienced one its worst tornado seasons in history. For many areas in the region, April and May were some of the busiest months in history. Perhaps the most devastating occurrences was between the dates of April 25 to 27, 2011. The tornadoes resulted in at least thirteen deaths in Arkansas, two deaths in Louisiana, thirty-four deaths in Mississippi, and thirty-four deaths in Tennessee. In Smithville, Mississippi, an EF5 tornado touched down on April 27, 2011. The twister was reported to have destroyed over 150

homes. Twenty-seven people are believed to have died as a result. Winds from that twister were estimated at 205 miles per hour.

On September 1, 2011, while Texas and much of south eastern Louisiana were plagued with drought, Tropical Storm Lee approached the Gulf coast. The tropical cyclone moved very slowly toward the coast, only to stall there for a little over two days. By the 4th of the month, Lee began to creep into landfall and slowly pushed to the north east. Because it moved slowly, rainfall totals in southern Mississippi and Louisiana were excessive. Rainfall totals varied from 10 to 15 inches in the New Orleans area and along coastal Mississippi. Jackson, Mississippi reported over 11 inches of rainfall, and values as high as ten inches were reported in south eastern Tennessee. In total, the storm resulted in 21 fatalities and is believed to have caused approximately one billion dollars in damage.

In summary, 2011 will long be remembered as a weather making year. It is extremely difficult to rank these events in terms of impacts and devastation. Clearly, the importance of these events is local to the citizens that endured them. It is fair to say, however; that if you were living in the Southern Region in 2011, you were likely impacted in some way by at least some, if not all of the above mentioned events.

## **DROUGHT CONDITIONS**

*Luigi Romolo, Southern Regional Climate Center*

Drought conditions continued to improve over the month of January in the Southern Region, with drought being removed in north central Texas and in eastern Oklahoma. Much of eastern Texas has also seen a one-category improvement in drought conditions. As of January, 31, 2012, 61.19 percent of the Southern Region remains in drought, which is approximately an 8 percent improvement from

the end of last month. Drought conditions in Louisiana, Arkansas, and Mississippi did not change much over the course of the month, and Tennessee remains the only state in the region to be completely drought free. Large areas of Texas, however, are still facing "exceptional drought," the most intense category of the Drought Monitor scale.

To the Right: Drought conditions in the Southern Region. Map is valid for January 2012. Image courtesy of the National Drought Mitigation Center.

## U.S. Drought Monitor

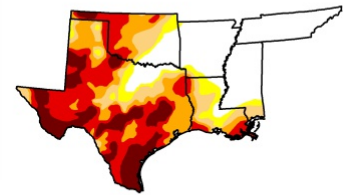
South

January 31, 2012  
Valid 7 a.m. EST

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	32.32	67.68	61.19	50.60	35.37	14.32
Last Week (01/24/2012 map)	28.47	71.53	64.62	52.75	37.37	13.27
3 Months Ago (11/01/2011 map)	11.84	88.16	79.95	69.80	62.33	41.90
Start of Calendar Year (12/27/2011 map)	26.47	73.53	69.01	54.81	39.11	17.15
Start of Water Year (09/27/2011 map)	18.34	81.66	76.26	70.61	63.67	53.77
One Year Ago (01/25/2011 map)	13.45	86.55	59.16	30.84	8.46	0.00

### Intensity

D0 Abnormally Dry  
D1 Drought - Moderate  
D2 Drought - Severe  
D3 Drought - Extreme  
D4 Drought - Exceptional



The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

<http://droughtmonitor.unl.edu>



Released Thursday, February 2, 2012  
Eric Luebbehusen, USDA

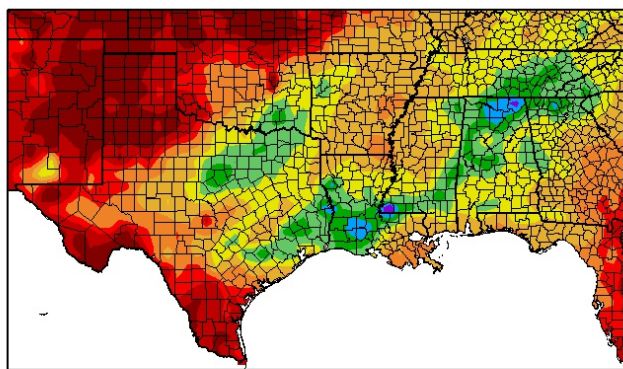
## PRECIPITATION SUMMARY

Luigi Romolo, Southern Regional Climate Center

Precipitation varied spatially during the month of January with parts of the Southern Region having a wetter than normal month, while for other areas, it was much drier than normal. Wetter than normal conditions occurred over much of eastern Oklahoma and in central and northern Texas. Stations in that part of the Southern Region averaged between 150 and 300 percent of normal. These values equate to 2 to 7 inches (50.80 to 177.80 mm) of precipitation. Similar totals were also observed in south central Louisiana, which received approximately 130 to 150 percent of its expected precipitation for the month. Elsewhere, conditions were quite dry. Most

stations in southern Texas and in western Oklahoma only received between 5 and 50 percent of normal precipitation, with several stations reporting zero precipitation for the month. State average precipitation values were as follows: 2.87 inches (72.90 mm) in Arkansas, 4.66 inches (118.36 mm) in Louisiana, 4.39 inches (111.51 mm) in Mississippi, 1.95 inches (49.53 mm) in Oklahoma, 4.78 inches (121.41 mm) in Tennessee, and 2.24 inches (56.90 mm) in Texas. For Texas, it was the twenty-eighth wettest January on record (1895-2012), and the second consecutive month with precipitation greater than two inches.

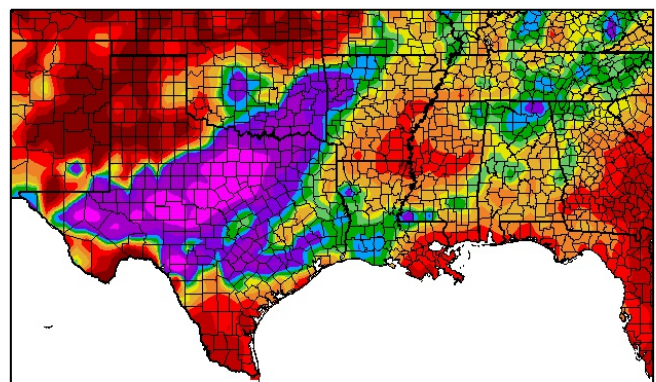
Precipitation (in)  
1/1/2012 - 1/31/2012



Generated 2/5/2012 at HPRCC using provisional data.

Regional Climate Centers

Percent of Normal Precipitation (%)  
1/1/2012 - 1/31/2012



Generated 2/5/2012 at HPRCC using provisional data.

Regional Climate Centers

Total precipitation values (left) and The percent of 1971-2000 normal precipitation totals (right) for January 2012.

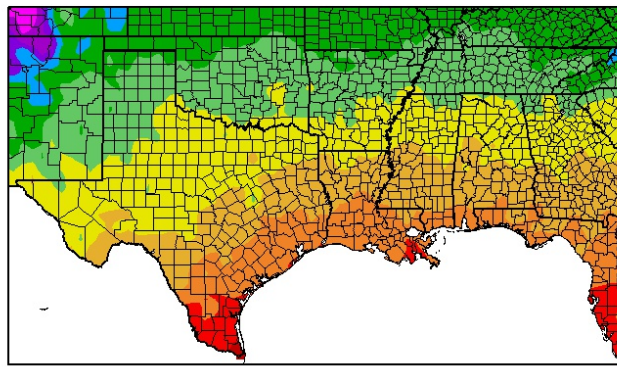
## TEMPERATURE SUMMARY

*Luigi Romolo, Southern Regional Climate Center*

The month of January proved to be a warm month for the entire Southern Region with all state temperature averages ranking in at least the top twenty on record (18-95-2012). A strong majority of the station in the Southern Region averaged between 2 to 8 degrees F (1.11 to 4.44 degrees C) above normal. Louisiana was the warmest state, reporting a state average temperature for the month of 55.40 degrees F (13.00 degrees C). For Louisiana, it was the eleventh warmest January on record (1895-2012). Mississippi reported a state average temperature of 50.70 (10.39 degrees C), while Texas was a close third with

50.30 (10.17 degrees C). For Mississippi, it was the fifteenth warmest January on record (1895-2012), while for Texas it was the seventeenth warmest. With a state average temperature of 44.30 degrees F (6.83 degrees C), Arkansas posted its eighteenth warmest January on record (1895-2012), while Oklahoma posted its tenth warmest January on record (1895-2012) with a state average temperature of 42.70 degrees F (5.94 degrees C). For Tennessee, it was the twentieth warmest January on record (1895-2012) as it reported a state average temperature of 42.50 degrees F (5.83 degrees C).

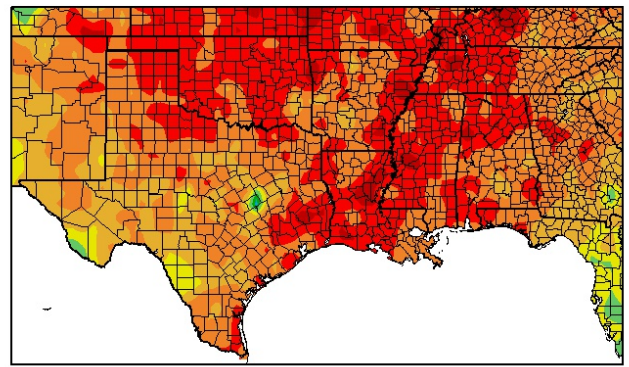
Temperature (F)  
1/1/2012 – 1/31/2012



Generated 2/5/2012 at HPRCC using provisional data.

Regional Climate Centers

Departure from Normal Temperature (F)  
1/1/2012 – 1/31/2012



Generated 2/5/2012 at HPRCC using provisional data.

Regional Climate Centers

**Average temperatures (left) and departures from 1971-2000 normal average temperatures (right) for January 2012, across the South.**



## CLIMATE PERSPECTIVE

State	Temperature	Rank	Precipitation	Rank
Arkansas	44.3	18 <sup>th</sup> Warmest	2.87	40 <sup>th</sup> Driest
Louisiana	55.4	11 <sup>th</sup> Warmest	4.66	54 <sup>th</sup> Driest
Mississippi	50.7	15 <sup>th</sup> Warmest	4.39	47 <sup>th</sup> Driest
Oklahoma	42.7	10 <sup>th</sup> Warmest	1.95	33 <sup>rd</sup> Wettest
Tennessee	42.5	20 <sup>th</sup> Warmest	4.78	49 <sup>th</sup> Wettest
Texas	50.3	17 <sup>th</sup> Warmest	2.24	28 <sup>th</sup> Wettest

State temperature and precipitation values and rankings for January 2012. Ranks are based on the National Climatic Data Center's Statewide, Regional and National Dataset over the period 1895-2011.

## STATION SUMMARIES ACROSS THE SOUTH

Station Name	Temperatures (degrees F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	%Norm
El Dorado, AR	60.8	35.3	48.0	4.5	76.0	1/20	19.0	1/3	2.88	-2.05	58
Little Rock, AR	57.7	35.2	46.5	6.4	71.0	1/17+	22.0	1/3	2.06	-1.55	57
Baton Rouge, LA	69.1	46.5	57.8	7.7	80.0	1/25+	27.0	1/14	5.75	-0.44	93
New Orleans, LA	70.4	51.3	60.8	8.2	81.0	1/22+	32.0	1/14	1.81	-4.06	31
Shreveport, LA	65.9	41.1	53.5	7.1	80.0	1/22+	24.0	1/3	3.19	-1.41	69
Greenwood, MS	62.2	37.0	49.6	5.7	75.0	1/20	20.0	1/29+	2.48	-2.77	47
Jackson, MS	64.9	40.9	52.9	7.8	78.0	1/20	25.0	1/14	4.02	-1.65	71
Tupelo, MS	59.8	36.5	48.2	7.8	70.0	1/25	22.0	1/3	4.73	-0.41	92
Oklahoma City, OK	56.3	31.0	43.7	7.0	70.0	1/22	17.0	1/18	2.23	0.95	174
Ponca City, OK	55.2	25.6	40.4	6.6	71.0	1/16	12.0	1/18	0.24	-0.94	20
Tulsa, OK	57.3	31.1	44.2	7.8	72.0	1/31+	17.0	1/18	0.61	-0.99	38
Knoxville, TN	52.7	33.8	43.2	5.6	65.0	1/26+	18.0	1/4	5.67	1.10	124
Memphis, TN	58.0	37.4	47.7	7.8	72.0	1/31+	23.0	1/3	1.73	-2.51	41
Nashville, TN	54.3	32.2	43.3	6.5	67.0	1/6	20.0	1/14+	5.13	1.16	129
Amarillo, TX	57.9	26.4	42.2	6.4	72.0	1/30	16.0	1/12	0.05	-0.58	8
El Paso, TX	61.5	35.0	48.3	3.2	71.0	1/20	24.0	1/14	0.66	0.21	147
Dallas, TX	61.9	38.9	50.4	6.3	79.0	1/22	26.0	1/13	6.18	4.28	325
Houston, TX	69.7	47.8	58.8	7.0	81.0	1/20	30.0	1/13	5.07	1.39	138
San Antonio, TX	68.3	44.1	56.2	5.9	78.0	1/19+	30.0	1/14	3.99	2.33	240

Summary of temperature and precipitation information from around the region for January 2012. Data provided by the Applied Climate Information System. On this chart, "depart" is the average's departure from the normal average, and "% norm" is the percentage of rainfall received compared with normal amounts of rainfall. Plus signs in the dates column denote that the extremes were reached on multiple days. Blue-shaded boxes represent cooler than normal temperatures; red-shaded boxes denote warmer than normal temperatures; tan shades represent drier than normal conditions; and green shades denote wetter than normal conditions.

## SOUTHERN CLIMATE 101

*Have a question about Southern U.S. climate? Let us know and we may feature the answer in a future issue of the Monitor!*

In future issues of the Monitor, we will select a user submitted climate question and provide a reply, to appear in this spot on the back page of the Monitor. Though any aspect of climate is fair game, we will give greatest consideration to questions pertaining to extreme weather & climate events, recent conditions, and climate-related issues relevant to the South Central U.S. - specifically the states of Oklahoma, Texas, Arkansas, Louisiana, Tennessee, and Mississippi. For instance, perhaps you recently experienced a significant winter storm and you were curious how rare it was from a historical perspective. Contact us at **[monitor@southernclimate.org](mailto:monitor@southernclimate.org)** and we will consider your question among all the others we receive. In the subject line of your message, please use "Southern Climate 101." We look forward to your submissions!

Have a climate question, but do not want it to be answered in a public forum? No problem! Feel free to contact us at one of the options listed below, and we will do our best to address your question.

## CONTACT US

The *Monitor* is an experimental climate outreach and engagement product of the Southern Regional Climate Center and Southern Climate Impacts Planning Program. To provide feedback or suggestions to improve the content provided in the *Monitor*, please contact us at **[monitor@southernclimate.org](mailto:monitor@southernclimate.org)**. We look forward to hearing from you and tailoring the *Monitor* to better serve you. You can also find us online at **[www.srcc.lsu.edu](http://www.srcc.lsu.edu)** and **[www.southernclimate.org](http://www.southernclimate.org)**.

For any questions pertaining to historical climate data across the states of Oklahoma, Texas, Arkansas, Louisiana, Mississippi, or Tennessee, please contact the Southern Regional Climate Center at 225-578-502. For questions or inquiries regarding research, experimental tool development, and engagement activities at the Southern Climate Impacts Planning Program, please contact us at 405-325-7809 or 225-578-8374.

## SOUTHERN CLIMATE MONITOR TEAM:

Luigi Romolo, Regional Climatologist  
Southern Regional Climate Center (LSU)

Charlotte Lunday, Student Assistant  
Southern Climate Impacts Planning Program (OU)

Lynne Carter, Program Manager  
Southern Climate Impacts Planning Program (LSU)

Margret Boone, Program Manager  
Southern Climate Impacts Planning Program (OU)

Rachel Riley, Associate Program Manager  
Southern Climate Impacts Planning Program (OU)

Hal Needham, Research Associate  
Southern Climate Impacts Planning Program (LSU)

Barry Keim, State Climatologist for Louisiana  
Co-PI, Southern Climate Impacts Planning Program (LSU)

Mark Shafer, Principal Investigator  
Southern Climate Impacts Planning Program (OU)

Gary McManus, Associate State Climatologist for  
Oklahoma  
Southern Climate Impacts Planning Program (OU)

Kevin Robbins, Director  
Southern Regional Climate Center (LSU)