



Banks of the Arkansas - Fort Smith, Arkansas

# SOUTHERN CLIMATE *MONITOR*

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**LSU**



**SCIPP**

Southern Climate Impacts Planning Program



## Winter Forecast for the SCIPP Region

Barry Keim, Southern Climate Impacts Planning Programs, Louisiana State University

Our winter forecast for most of the SCIPP region calls for warmer and drier than normal conditions, with the exception of Tennessee, where the forecast calls for wetter than normal conditions (Figure 1). Actually, what the Climate Prediction Center is really noting is that the probability of having a warmer and drier than normal season is enhanced, thereby having a higher than average chance for these conditions. This forecast is entirely consistent with what we would expect during a La Nina winter. In this instance, the jet stream and storm tracking tends to shift northward bringing rains to the Ohio River Valley, including Tennessee, and leaving the southern United States warm, and high and dry.

If you consider how poorly forecasters are at predicting weather 4 or 5 days in advance, you would think that forecasting months ahead would be nearly impossible. Well, predicting specific weather events weeks to months in advance is

impossible, indeed. Predicting climate, on the other hand, is a little different, although nonetheless daunting. There have been some recent breakthroughs in this science and it can be done with some (limited) success. Climate forecasters are becoming better skilled as result of understanding teleconnections. A teleconnection is an association of weather that takes place in differing parts of the earth. In this case, the reference is to our current La Nina. La Nina is a phenomenon that takes place in the eastern tropical Pacific Ocean, yet it has impacts on weather and climate in certain parts of the world, including the south-central United States. During past La Nina events, the south-central United States has tended to be warmer and drier than normal. Not surprisingly, this is precisely the forecast by NOAA's Climate Prediction Center for the region for this upcoming winter season. Clearly, this is not good news for those being impacted by the current drought conditions.

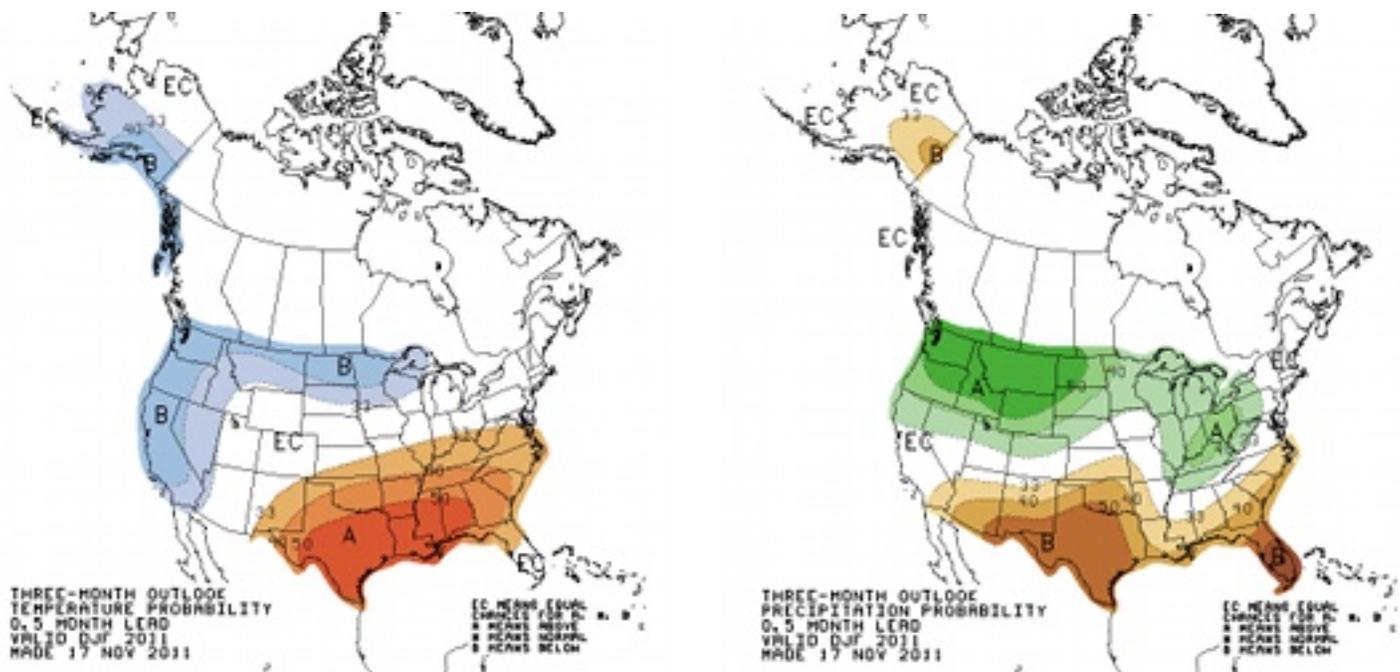


Figure 1: Winter (December through February) forecast for temperature (right) and precipitation (left) by the NOAA's Climate Prediction Center

[http://www.cpc.ncep.noaa.gov/products/predictions/long\\_range/seasonal.php?lead=1](http://www.cpc.ncep.noaa.gov/products/predictions/long_range/seasonal.php?lead=1).

## 2011 Hurricane Season Drawing to a Close

Barry Keim, Southern Climate Impacts Planning Program, Louisiana State University

The 2011 hurricane season is now in the record books, as hurricane season officially ended on November 30th. It is around this time of year when the sea surface temperatures in the Atlantic, Caribbean, and Gulf of Mexico become sufficiently cool that tropical storms and hurricanes no longer form ..generally. However, there are always exceptions. For example, in 2005, Tropical Storm Zeta formed in the Atlantic on December 30th, and remained active for 8 days - until January 6, 2006. This storm was also part of the same, extraordinary, 2005 hurricane season with Hurricanes Katrina and Rita - the most active season on record with 28 named storms. The 2011 season tallied 18 named storms (Figure 1), making it the 7th busiest season on record, with record-keeping beginning in 1851. Surely it is possible to add another storm along the way before we officially close book on 2011, but the chances are small. Fortunately for the United States and for the SCIPP region, most storm tracks remained over the Atlantic Ocean, with little activity in the northern Gulf of Mexico.

Nationally, the biggest highlight this season was Hurricane Irene which produced incredible rainfall and flooding in the northeastern United States. In the SCIPP region, our tropical highlights this season were Tropical Storms Don and Lee. TS Don made landfall just north of Brownsville, TX in late July, with hopes of bringing drought-busting rains. Unfortunately, it did not live up to its billing as a rainmaker, and it had little to no impact on the Texas drought. In contrast, TS Lee brought between 10-15 inches of rainfall to southeast Louisiana in early September, which did impact drought conditions there. Unfortunately, Louisiana has not had much rain since either.

Table 1: 2011 tropical storm and hurricane statistics

#	Name	Date	Wind	Pressure	Category
1	Tropical Storm ARLENE	Jun 29-Jul 01	55	993	-
2	Tropical Storm BRET	Jul 17-22	55	996	-
3	Tropical Storm CINDY	Jul 20-22	50	1000	-
4	Tropical Storm DON	Jul 27-30	45	998	-
5	Tropical Storm EMILY	Aug 01-07	45		-
6	Tropical Storm FRANKLIN	Aug 12-13	40	1004	-
7	Tropical Storm GERT	Aug 14-16	50	1000	-
8	Tropical Storm HARVEY	Aug 19-22	50	994	-
9	Hurricane-3 IRENE	Aug 20-29	105	942	3
10	Tropical Depression TEN	Aug 25-26	30	1007	-
11	Tropical Storm JOSE	Aug 28-29	40	1007	-
12	Hurricane-4 KATIA	Aug 29-Sep 10	115		4
13	Tropical Storm LEE	Sep 02-05	50	986	-
14	Hurricane-1 MARIA	Sep 06-16	70	979	1
15	Tropical Storm NATE	Sep 07-11	60	994	-
16	Hurricane-4 OPHELIA	Sep 21-Oct 03	120	940	4
17	Hurricane-1 PHILIPPE	Sep 24-Oct 08	80	976	1
18	Hurricane-2 RINA	Oct 23-28	95	966	2
19	Tropical Storm SEAN	Nov 08-11	55	983	-

Winds are in knots, pressure in millibars, and category is based on Saffir Simpson Scale

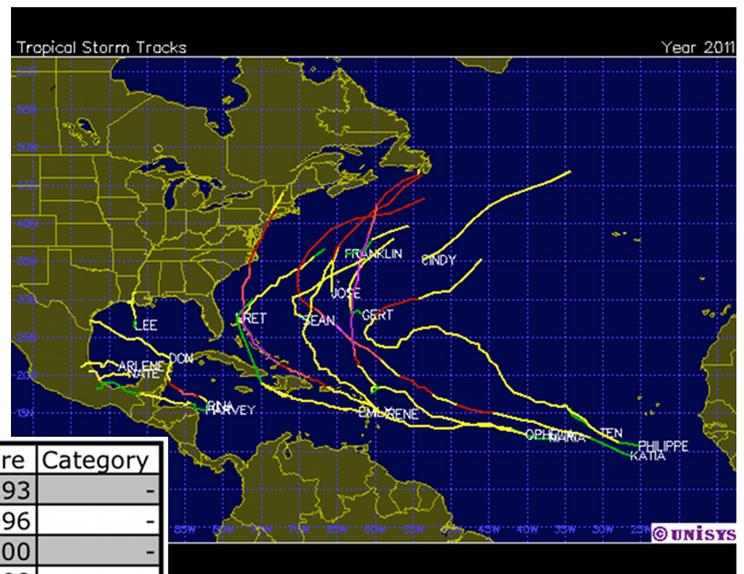


Figure 1: Tropical Storms and Hurricanes in the Atlantic Basin in 2011. From <http://weather.unisys.com/hurricane/atlantic/2011/index.html>.

## DROUGHT CONDITIONS

*Luigi Romolo, Southern Regional Climate Center*

Drought conditions in the Southern Region did not change much in terms of extent, however; there were significant improvements in terms of intensity. In total, the region saw approximately a ten percent reduction in areal extent of each drought category. This equates to a one category improvement over much of the region. Exceptional drought, which last month covered over 40 percent of the region, has now been reduced to just under 30 percent. Drought conditions have been removed in western Tennessee, and much of Arkansas is now drought free. Some new moderate drought has crept into southern Mississippi, but deterioration of drought conditions this month has fortunately been minimal.

## PRECIPITATION SUMMARY

*Luigi Romolo, Southern Regional Climate Center*

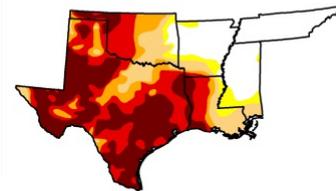
The month of November was a wet month for much of the northern part of the Southern Region. Many stations in Oklahoma averaged between 150 and 300 percent of normal. This was also the case for central and northern Arkansas, and western and eastern Tennessee. For Oklahoma, it was the ninth wettest November on record (1895-2011), with a state average precipitation total of 4.87 inches (123.67 mm). Arkansas averaged 8.66 inches (219.964 mm) of precipitation, making it the eighth wettest November on record (1895-2011) there. Tennessee averaged 7.36 inches (186.94 mm), which was the seventh wettest November on record (1895-2011). Elsewhere in the southern region, conditions were generally drier than normal. The driest areas included western and southern Texas, where the majority of stations received less than half the expected precipitation. This was also the case for the Florida parishes of Louisiana and the southern most counties of Mississippi. Texas averaged only 1.24 inches (31.49 mm) of precipitation. Though it was drier than normal, it was still much wetter than in recent months. Conditions were slightly

## U.S. Drought Monitor

November 29, 2011  
Valid 7 a.m. EST

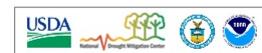
South

	Drought Conditions (Percent Area)					
	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	22.62	77.38	72.37	60.69	51.13	29.43
Last Week (11/22/2011 map)	15.07	84.93	76.43	64.48	54.43	37.62
3 Months Ago (09/30/2011 map)	2.44	97.56	85.82	75.52	66.34	53.74
Start of Calendar Year (12/28/2010 map)	8.86	91.14	67.65	35.21	10.17	0.00
Start of Water Year (09/27/2011 map)	18.34	81.66	76.26	70.61	63.67	53.77
One Year Ago (11/23/2010 map)	34.82	65.18	37.40	17.01	3.70	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.



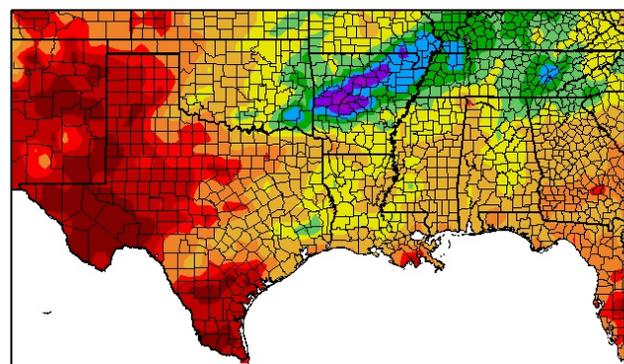
Released Thursday, December 1, 2011  
David Miskus, NOAA/NWS/NCEP/Climate Prediction Center

<http://droughtmonitor.unl.edu>

**Above: Drought conditions in the Southern Region. Map is valid for November 2011. Image courtesy of the National Drought Mitigation Center.**

wetter in Louisiana and Mississippi, though still drier than normal. Louisiana and Mississippi reported state average precipitation totals of 3.64 inches (92.46 mm) and 3.71 inches (94.23 mm), respectively.

Precipitation (in)  
11/1/2011 - 11/30/2011

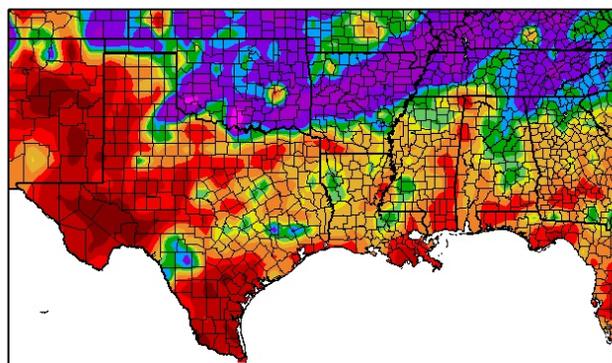


Generated 12/5/2011 at HPRCC using provisional data. Regional Climate Centers

**Total precipitation values a for November 2011.**

The percent of 1971-2000 normal precipitation totals (right) for November 2011.

Percent of Normal Precipitation (%)  
11/1/2011 - 11/30/2011



Generated 12/5/2011 at HPRCC using provisional data. Regional Climate Centers

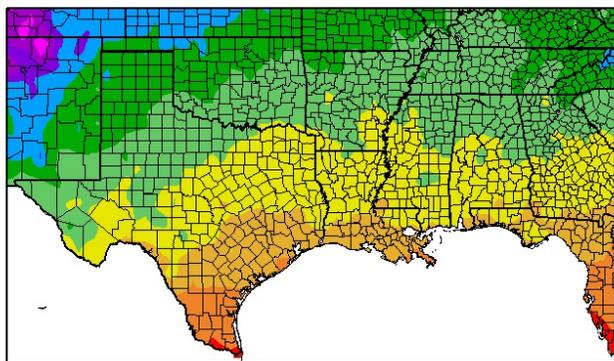
## TEMPERATURE SUMMARY

Luigi Romolo, Southern Regional Climate Center

November was generally a warmer than normal month for much of the Southern Region, with most stations averaging approximate 1-3 degrees F (0.56-1.67 degrees C) above normal. The highest departures from normal occurred in Arkansas, and north central Tennessee, where many stations reported monthly average temperatures between 3 to 5 degrees F (1.67 to 2.78 degrees C) warmer than expected. Tennessee had a state average temperature of 51.10 degrees F (10.61 degrees C), which was the nineteenth warmest November on record there (1895-2011). Arkansas experienced its twenty-fifth warmest November on record (1895-2011) with an average temperature of 53.40 degrees F (11.89 degrees C). All other

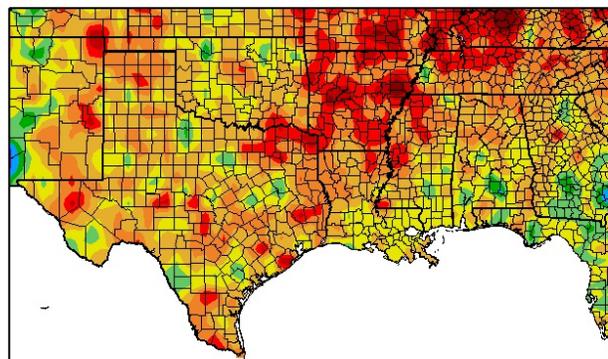
state averages fell within the middle two quartiles. Louisiana averaged 59.80 degrees F (15.44 degrees C) for the month, while Mississippi reported a state average temperature of 55.90 degrees F (13.28 degrees C). Texas averaged 56.90 degrees F (13.83 degrees C) for the month and Oklahoma averaged a temperature of 49.60 degrees F (9.78 degrees C).

Temperature (F)  
11/1/2011 - 11/30/2011



Generated 12/5/2011 at HPRCC using provisional data. Regional Climate Centers

Departure from Normal Temperature (F)  
11/1/2011 - 11/30/2011



Generated 12/5/2011 at HPRCC using provisional data. Regional Climate Centers

Average temperatures (left) and departures from 1971-2000 normal average temperatures (right) for November 2011, across the South.

## CLIMATE PERSPECTIVE

State	Temperature	Rank	Precipitation	Rank
Arkansas	53.4	25 <sup>th</sup> Warmest	8.66	8 <sup>th</sup> Wettest
Louisiana	59.8	37 <sup>th</sup> Warmest	3.64	55 <sup>th</sup> Driest
Mississippi	55.9	37 <sup>th</sup> Warmest	3.71	53 <sup>rd</sup> Wettest
Oklahoma	49.6	51 <sup>st</sup> Warmest	4.87	9 <sup>th</sup> Wettest
Tennessee	51.1	19 <sup>th</sup> Warmest	7.36	7 <sup>th</sup> Wettest
Texas	56.9	40 <sup>th</sup> Warmest	1.24	39 <sup>th</sup> Driest

State temperature and precipitation values and rankings for November 2011. 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	66.4	43.6	55.0	1.2	80.0	11/20+	25.0	11/30	3.31	-1.49	69
Little Rock, AR	64.9	46.6	55.8	4.0	82.0	11/14	30.0	11/30	14.57	8.84	254
Baton Rouge, LA	72.3	48.5	60.4	1.4	85.0	11/15	33.0	11/29+	7.44	2.68	156
New Orleans, LA	73.3	54.9	64.1	2.7	86.0	11/15	37.0	11/29+	3.18	-1.91	62
Shreveport, LA	69.9	47.7	58.8	2.7	84.0	11/20+	30.0	11/28	4.25	-0.43	91
Greenwood, MS	68.1	43.6	55.9	1.3	83.0	11/15	24.0	11/30+	3.64	-1.21	75
Jackson, MS	68.7	44.9	56.8	2.0	83.0	11/14	28.0	11/30	3.50	-1.54	69
Tupelo, MS	64.9	43.6	54.2	2.7	82.0	11/15	26.0	11/18	5.14	0.13	103
Oklahoma City, OK	61.3	39.4	50.3	1.4	80.0	11/13	24.0	11/30	2.24	0.13	106
Ponca City, OK	59.9	35.7	47.8	0.4	77.0	11/1	19.0	11/28	2.88	0.29	111
Tulsa, OK	61.1	40.6	50.9	1.1	77.0	11/13	23.0	11/28	5.37	1.90	155
Knoxville, TN	62.3	40.0	51.1	2.1	75.0	11/22	26.0	11/18	7.08	3.10	178
Memphis, TN	64.7	47.1	55.9	3.6	79.0	11/14	31.0	11/30+	7.71	1.95	134
Nashville, TN	62.4	41.6	52.0	2.7	78.0	11/14	25.0	11/18+	6.15	1.70	138
Amarillo, TX	61.9	34.4	48.2	3.1	81.0	11/1	19.0	11/17	0.62	-0.06	91
El Paso, TX	66.4	40.7	53.5	0.8	84.0	11/1	29.0	11/28+	0.23	-0.19	55
Dallas, TX	68.4	47.4	57.9	2.8	84.0	11/13	31.0	11/28	0.86	-1.71	33
Houston, TX	73.2	53.0	63.1	2.2	84.0	11/20+	34.0	11/28	4.70	0.51	112
San Antonio, TX	74.8	51.0	62.9	2.9	85.0	11/20+	31.0	11/28	1.81	-0.77	70

Summary of temperature and precipitation information from around the region for November 2011. 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.

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