SOUTHERN CLIMATE *MONITOR*

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IN THIS ISSUE:

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Managing Drought in the Southern Plains Webinar Series

Mark Shafer, Southern Climate Impacts Planning Programs, University of Oklahoma

A drought of strong intensity and vast geographical extent has gripped the South Central United States for several months. As early as November 2010, the National Oceanic and Atmospheric Administration's (NOAA) Climate Prediction Center predicted that eastern Pacific La Nina conditions would increase the potential for drought formation across the southern United States. In fact, the state of Texas set its driest water year (October-September) on record and is challenging its driest annual precipitation total as well. To respond to these severe ongoing conditions, multiple efforts were launched to engage decision-makers from regional to state to local arenas in a conversation about drought.

A four-pronged approach was used to assure that all of these arenas were addressed: regional workshops, state drought planning, a series of webinars and supporting local impact reporting. The net effect of these efforts is that interaction between these arenas and between the academic and practitioner communities increased substantially. Many decision-makers have participated in multiple activities, such as state drought planners attending the regional workshops or local Farm Service Agency offices participating in the drought webinars and impact reporting.

While in many instances the response to the drought has remained reactive, these discussions have yielded a treasure trove of information that will form subsequent development of best practices guidelines, improve drought planning, and connect state and local monitoring more closely.

Communication among agencies and affected sectors is a key to successful management. Towards this end, the Southern Climate Impacts Planning Program (SCIPP), in collaboration with the National Integrated Drought Information System (NIDIS), National Oceanic and Atmospheric Administration (NOAA), National Drought Mitigation Center (NDMC), Climate Assessment for the Southwest (CLIMAS), and the region's State Climatologists, launched a bi-weekly webinar series. The series goals include:

- To improve communication among agencies and organizations in the Southern Plains who are being affected by the historic and exceptional drought;

- To provide information on available resources and assistance to help monitor and manage drought;

- To understand the impacts of drought in this region from the perspective of those who are tasked with managing it; and

- To document impacts that will help improve the weekly U.S. Drought Monitor assessment and our understanding of how drought impacts evolve and decay.

Webinars are held on the 2nd and 4th Thursdays of each month at 11:00 a.m. Central Time. The content is geared toward a general audience – anyone who has responsibility to manage or assist others in managing drought and its related impacts. Each webinar includes an overview of the current drought assessment and outlook, summary of impacts across the region, and a topic or resource, such as La Niña or wildfire conditions. During each webinar, attendees are able to vote on the next topic they would like to see as well as suggest new topics. Topics to date have focused on the following: the historical context and evolution of the 2011 drought; La Nina and prospects for extended drought; flash drought; water resources; the cattle industry; and

seasonal forecasting.

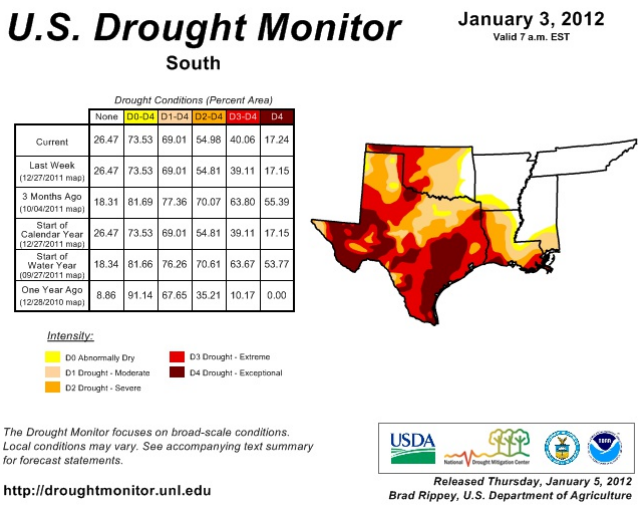
More than 250 people have signed up for the webinars, with a typical draw of 60-80 registrants on any individual topic. Several have indicated that multiple people in their organization participate in the webinar via a single sign-in, so the number directly participating is likely higher. Anyone interested in participating should register via the SCIPP website: http://www.southernclimate.org or e-mail scipp@southernclimate.org. Information from each webinar, including the presentations and a 2-page summary in pdf format, is posted on the NIDIS Drought Portal http://www.drought.gov in the South Central community section and on the SCIPP Facebook page http://www.facebook.com/SouthernClimateImpacts PlanningProgram and the videos are posted on YouTube, http://www.youtube.com/user/SCIPP01.

These webinars will continue, at least monthly, as long as extreme and exceptional drought remains mired in the region or as long as high interest levels are maintained. First and foremost, this webinar series is a useful way to convey information across a wide region, so that experts in one state can share their experiences with those in another. However, we also recognize that the region is beset by many different types of hazards beyond drought – severe storms, hurricanes, floods, winter storms and more. Just as we have learned from the experience with these drought webinars, there is likely an unmet need for conveying information surrounding these other hazards.

DROUGHT CONDITIONS

Luigi Romolo, Southern Regional Climate Center

Drought conditions in the Southern Region improved slightly from the previous month. Above normal precipitation over much of the region has led to improvements over western Louisiana, northwestern Texas, and northern Texas. As of January 3, 2012, only 17.24 percent of the Southern Region is experiencing exceptional drought, which is approximately a twelve percent improvement over the end of November. The amount of extreme drought was also reduced by approximately eleven percent. Drier than normal conditions in southeastern Louisiana, however; has led to the introduction of extreme drought over much of the Florida Parishes.

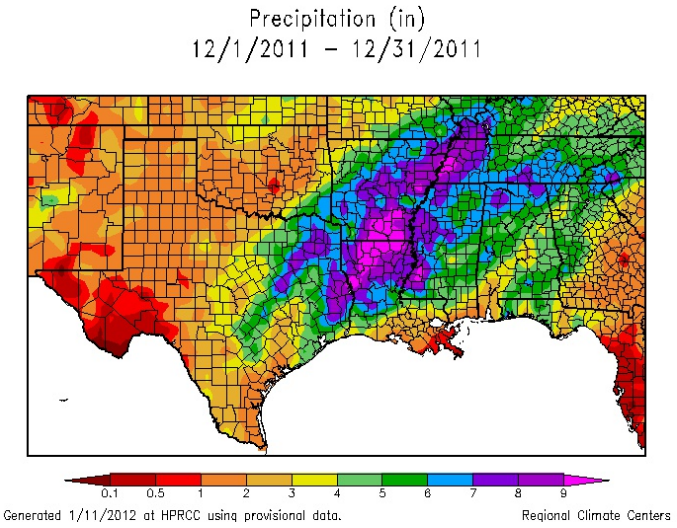


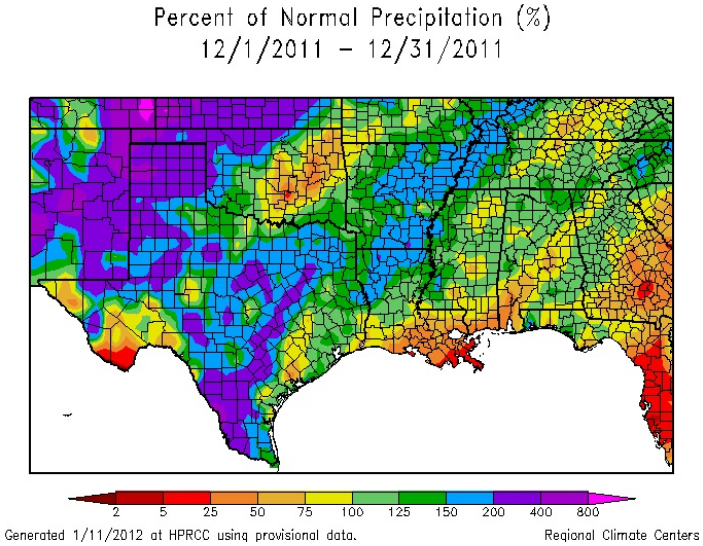
Above: Drought conditions in the Southern Region. Map is valid for December 2011. Image courtesy of the National Drought Mitigation Center.

PRECIPITATION SUMMARY

Luigi Romolo, Southern Regional Climate Center

With a few exceptions, December was generally a wet month for the Southern Region. Dry areas included southern Louisiana and southern Mississippi, eastern Oklahoma, and parts of western Texas. These areas generally averaged approximately five to twenty five percent of normal precipitation for the month. The wettest part of the region included Arkansas, parts of southern and northern Texas, and western Oklahoma. Stations in these regions averaged between 150 and 400 percent of normal precipitation. Texas averaged 2.88 inches (73.15 mm) of precipitation, making it the nineteenth wettest December on record (1895-2011). It is also the second month in the year where precipitation for the state exceeded two inches (50.80 mm). Oklahoma experienced its twenty-eighth wettest December on record (1895-2011) with a state average precipitation total of 2.35 inches (59.69 mm). For Arkansas, it was the eighth wettest December on record (1895-2011) with a state average precipitation total of 7.47 inches (189.74 mm). Stations in the northeastern and southern areas of the state averaged between 150 and 250 percent of normal. Louisiana averaged 5.49 inches (139.45 mm) of precipitation, while Mississippi, averaged 5.99 inches (152.15 mm) of precipitation. Tennessee averaged 5.91 inches (150.11 mm) of precipitation for the month. State rankings for Louisiana, Mississippi, and Tennessee were all in the middle two quartiles.



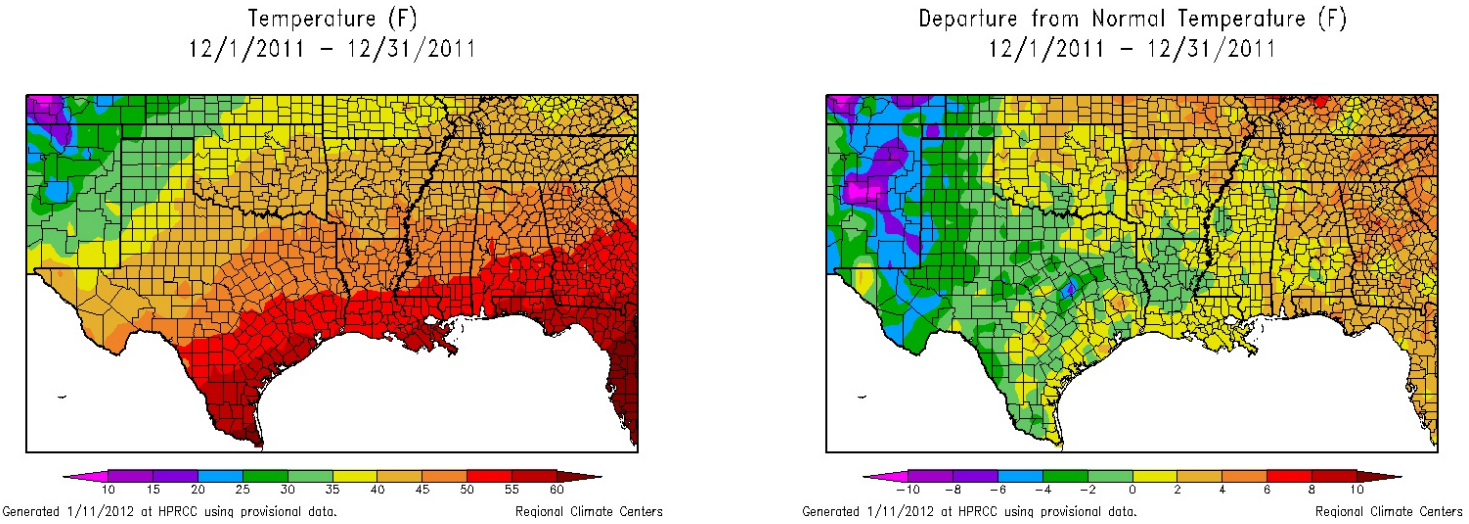


Total precipitation values (left) and The percent of 1971-2000 normal precipitation totals (right) for December 2011.

TEMPERATURE SUMMARY

Luigi Romolo, Southern Regional Climate Center

The month of December, was generally cooler than normal in Texas, northern Louisiana and in the Oklahoma panhandle. Though it was cooler than normal, temperatures averaged only 0-4 degrees F (0 to 2.22 degrees C) lower than expected. Elsewhere, conditions were generally slightly warmer than normal, with temperatures averaging between 0 to 6 degrees F (0 to 3.33 degrees C) above expected values. The highest departures were observed in Tennessee, where most stations averaged between 4 and 6 degrees F (2.22 to 3.33 degrees C) above normal. The state of Tennessee had an average temperature of 42.20 degrees F (5.67 degrees C) for the month, and it was the thirty-second warmest December on record (1895-2011). On the flip side, Texas averaged only 45.40 degrees F (7.44 degrees C), which was the twenty-sixth coolest December on record (1895-2011). Other state average temperatures include: Arkansas at 42.60 degrees F (5.89 degrees C) , Louisiana at 50.80 degrees F (10.44 degrees C), Mississippi at 47.20 degrees F (8.44 degrees C), and Oklahoma at 38.90 degrees F (3.83 degrees C). The state rankings for these states all fell well within the two middle quartiles.



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

CLIMATE PERSPECTIVE

State	Temperature	Rank	Precipitation	Rank
Arkansas	42.6	49th Warmest	7.47	8th Wettest
Louisiana	50.8	53rd Coldest	5.49	50th Wettest
Mississippi	47.2	54th Warmest	5.99	38th Wettest
Oklahoma	38.9	54th Coldest	2.35	28th Wettest
Tennessee	42.2	32nd Warmest	5.91	36th Wettest
Texas	45.4	26th Coldest	2.88	19th Wettest

State temperature and precipitation values and rankings for December 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	55.2	34.5	44.8	-1.3	68.0	12/31	22.0	12/8	9.38	4.58	195
Little Rock, AR	55.5	35.9	45.7	2.5	69.0	12/31	25.0	12/11	7.74	3.03	164
Baton Rouge, LA	65.1	43.4	54.2	1.9	80.0	12/15	27.0	12/8	2.82	-2.44	54
New Orleans, LA	66.3	49.3	57.8	2.7	80.0	12/5+	34.0	12/9	1.30	-3.77	26
Shreveport, LA	58.3	39.3	48.8	0.4	71.0	12/31	25.0	12/8	7.88	3.33	173
Greenwood, MS	57.8	35.8	46.8	0.0	75.0	12/15	19.0	12/11	6.64	1.23	123
Jackson, MS	60.4	39.1	49.7	2.1	75.0	12/15+	24.0	12/8	6.67	1.33	125
Tupelo, MS	56.4	35.8	46.1	2.7	73.0	12/15	22.0	12/11	5.76	-0.36	94
Oklahoma City, OK	51.1	31.1	41.1	1.6	71.0	12/31	15.0	12/7	1.86	-0.03	98
Ponca City, OK	49.3	28.8	39.0	2.0	68.0	12/31	16.0	12/7	2.19	0.52	131
Tulsa, OK	52.5	32.4	42.4	2.7	70.0	12/31	18.0	12/7	1.45	-0.98	60
Knoxville, TN	54.8	35.2	45.0	4.1	72.0	12/5	25.0	12/11	4.91	0.42	109
Memphis, TN	55.3	37.7	46.5	3.2	70.0	12/14	27.0	12/11+	8.55	2.87	151
Nashville, TN	53.2	34.5	43.8	3.3	71.0	12/14	19.0	12/11	4.25	-0.29	94
Amarillo, TX	43.7	24.7	34.2	-2.8	73.0	12/31	4.0	12/6	1.54	0.93	252
El Paso, TX	52.3	31.1	41.7	-3.7	70.0	12/31	18.0	12/6	0.74	-0.03	96
Dallas, TX	56.3	38.8	47.6	0.9	74.0	12/31	22.0	12/7	4.35	1.78	169
Houston, TX	63.2	46.0	54.6	0.9	77.0	12/15+	29.0	12/8+	4.28	0.59	116
San Antonio, TX	63.1	44.6	53.8	1.5	79.0	12/1	27.0	12/7	2.84	0.88	145

Summary of temperature and precipitation information from around the region for December 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** 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.

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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.** 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** and **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.