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The Importance of Trusted Advisors in Building Resilience

Missy Stults, Research Fellow and Doctoral Student, University of Michigan

In 2013 Time Magazine named "resilience" as the environmental buzzword of the year[1]. Given this or perhaps as justification for this, there has been a recent surge in the concept of building more resilient societies, places, and people[2]. Part of the growth in the concept of resilience has been the positive connotation associated with the term. In a recent survey conducted by researchers at the University of Michigan in tandem with the National League of Cities, ICLEI-Local Governments for Sustainability – USA, the Urban Sustainability Directors Network, and The Kresge Foundation, 200 local government liaisons were asked to share what they thought it would mean for their local community to be resilient to the impacts of climate change. Common responses included "ensuring a livable and economically strong community for years in the future," "a community with the capacity to meet the climate change challenge in a manner that preserves and preferably improves the community's health and socio-economic status in the future," and "a community that has the ability to recover from the current and future impacts of the climate, including the ability to maintain operations through natural disasters.[3]"

What these responses indicate is that stakeholders see resilience as a positive vision of a better future. Often, these visions include an array of co-benefits such as becoming more economically robust, ensuring the vitality of natural systems, and creating stronger, more livable local communities. Many of these responses resonate with the concept of sustainability – or the ability to meet the needs of present generations without compromising the ability of future generations to meet their needs[4].

In the academic literature, resilience is broadly defined as the ability of a system to withstand any kind of disturbance and bounce back; or, put another way, it is the ability of a system to return, after a disturbance, to the same basic function and structure it had pre-disturbance. While this definition of resilience has historically been used in academic discourse, scholars and practitioners are beginning to challenge this definition, arguing that true resilience is not about "bouncing back" to a pre-disturbance state. Instead, they argue that resilience should be about "bouncing forward", about creating something that is better, stronger, and more just than what we have today. Inherent in this concept is the idea that disturbances, whether they be natural disasters, acts of terrorism, economic disruptions, or others, present an opportunity for society to rethink how and why we operate and to make changes that may not be possible during normal operating conditions.

As we look across the country, we can find numerous examples of individuals, neighborhoods, communities, economic systems, or regional collaboratives working

[1]Time Magazine: http://science.time.com/2013/01/08/adapt-or-die-why-the-environmental-buzzword-of-2013-will-be-resilience/

[2]Meerow et al., forthcoming

[3]Results from research conducted by the University of Michigan through generous support from The Kresge Foundation. Results to be published in 2015.

[4]United Nations. 1987. Report of the World Commission on Environment and Development, General Assembly Resolution 42/187, 11 December 1987. Retrieved: 2007-11-14

to build the resilience of their systems by embracing the concept of "bouncing forward"[5]. This work is laudable but in analyzing these efforts, one realizes that much work still remains to be done. Given the need to rapidly scale up and out resilience efforts, it is not surprising to find that more and more organizations are creating tools, services, resources, and general information to support resilience-building initiatives.

In 2014, myself and a group of researchers at the University of Michigan, in tandem with The Kresge Foundation, undertook an effort to analyze the resilience building services and resources being provided by 85 different organizations – mostly nonprofits and quasi-governmental agencies such as the Regional Integrated Sciences and Assessments (RISAs), for which the Southern Climate Impacts and Planning Program (SCIPP) is one. One goal of this research was to understand how much growth had taken place in the resilience service provider landscape from the more formal onset of the movement in the early-to-mid 2000s up until today. The research was not comprehensive, nor was it meant to be. But what it did provide was a relatively thorough snapshot of the types of resilience-related services and resources currently available to support local resilience efforts as well as insights into where key gaps in services exist.

The results from this analysis found that the 85 organizations analyzed, collectively, provide more than 3,500 distinct climate resilience-related resources (Table 1 presents results based on the "type" of resilience resource or service analyzed)[6]. The majority of the resources analyzed focused on supporting early phases of the resilience-building process: acquiring information, conducting vulnerability assessments, building community and political support, and creating resiliency-focused plans. Resources for the later phases of resilience building, such as implementation, financing, monitoring and evaluation, however, were scarce[7]. These results also indicate that the resilience-service provider landscape is growing rapidly but growing in an uncoordinated fashion.

Table 1: Total Number and Percentage of Resources By Type

Type of Resource	Total Number	Percentage
Best Practice/Case Study	605	16.61%
Blog	39	1.07%
Clearinghouse	8	0.22%
Consulting	15	0.41%
Curriculum	20	0.55%
Fact Sheet	639	17.55%
Grants	17	0.47%
Library	333	9.14%
Monitoring and Evaluation	6	0.16%
Network	45	1.24%
Newsletter	51	1.40%
Planning Guide	172	4.72%
Pledge/Political Activism	18	0.49%
Project in the Field	232	6.37%
Scientific Report/Data Source	579	15.90%
Talking Points	216	5.93%
Tools	169	4.64%
Trainings/Workshops	121	3.32%
Webinar	357	9.80%

As the resilience landscape continues to grow, it will become even more critical for stakeholders to be able to rapidly and efficiently find the tools,

[5]For example, see the Adaptation Chapter of the 2014 U.S. National Climate Assessment: http://nca2014.globalchange.gov/report/response-strategies/adaptation

[6]Stults et al., forthcoming. Assessing the Climate Adaptation Resource and Service Landscape.

[7]ibid

services, information, and resources they need to move their resilience initiatives forward. What practitioners, like yourselves, have told us, is that having access to trusted advisors that can help you navigate the ballooning resilience landscape is imperative. In particular, practitioners indicate they are looking for trusted partners that can help them find the information they need in a format that is usable, useful, and understandable. This information also needs to be time and context specific in order to help stakeholders make appropriate, place-based decisions.

Finding these trusted advisors can be a challenge. But the good news is that organizations such as the Southern Climate Impacts and Planning Program (SCIPP) are here to help. Serving as a boundary organization, SCIPP and the other NOAA Regional Integrated Science and Assessments (RISAs) were created specifically to help stakeholders of all types find the information they need, or to help create new information that is needed to make informed decisions. If you have not already, I strongly encourage you to contact your SCIPP liaisons to learn more about the work they are doing and how they might be able to help you in your efforts. If you have already been engaging with SCIPP, consider sharing your story with colleagues, friends, or others you think could value from SCIPPs resources and expertise. As the resilience field continues to grow, having trusted advisors you can turn to with questions or concerns will only grow in importance. As such, we strongly encourage you to leverage the resources and expertise that exist within SCIPP to help you in your quest to build the resilience of your business, community, neighborhood, or family.

FOOTNOTE

Other resources you may want to consider include:

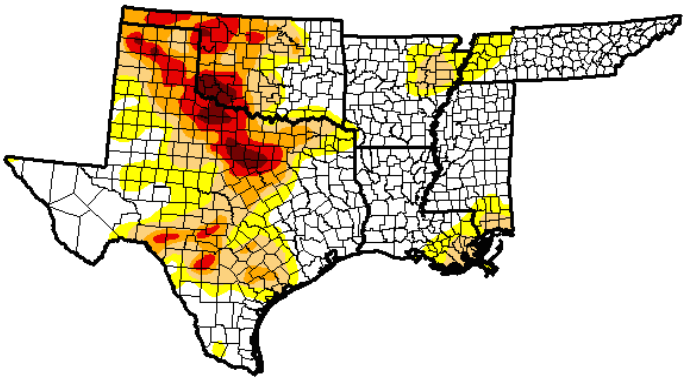
- American Society of Adaptation Professionals: https://adaptationprofessionals.org/
- Georgetown Climate Center: http://www.georgetownclimate.org/
- Climate Adaptation Knowledge Exchange: www.cakex.org
- National Adaptation Forum: http://nationaladaptationforum.org/

Drought Update

Luigi Romolo,
Southern Regional Climate Center

Due to dry conditions in the north western corner of the Southern Region, drought conditions over northern Texas and Oklahoma remained relatively unchanged. Conversely, wetter than normal conditions in east central Mississippi has helped replenish soils and subsequently alleviate drought conditions there.

In Texas, the drought has caused many rice farmers to lose their jobs. In order to fix this problem, an additional reservoir is going to be made in Lake City. The new reservoir will be the size of the Marble Falls and Lady Bird area lakes combined. Some ranchers still have to look to other sources of income, due to their cattle struggling in the prolonged drought. Some have even had to move their cattle northward, starting back in 2011. There are currently only 3.91 million cows in Texas as of 2014 compared to the 5.35 million cows in 2005. Drought conditions tended to worsen over the course of the month, though changes from last month were not large. Dallas area reservoirs were at 62.3% of capacity, compared to 61.6% at the beginning of the month. The Mineral Wells area is making plans to install a reverse osmosis well in order to have enough water, costing $6 million. If they did not do this, the county might run out of water by spring. Population growth is still a concern for reservoir use moving forward, and there are concerns about the $2 billion SWIFT initiative's ability to combat this (Information provided by the Texas Office of State Climatology).



Released Thursday, January 8, 2015
Brad Rippey, U.S. Department of Agriculture

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	52.92	47.08	31.22	17.83	8.39	1.99
Last Week 12/30/2014	41.57	58.43	33.88	18.43	8.80	2.36
3 Months Ago 10/7/2014	43.23	56.77	35.69	22.64	8.75	2.10
Start of Calendar Year 12/30/2014	41.57	58.43	33.88	18.43	8.80	2.36
Start of Water Year 9/30/2014	41.74	58.26	35.49	22.66	8.47	1.98
One Year Ago 1/7/2014	55.41	44.59	27.25	13.05	3.58	0.72

Intensity:

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

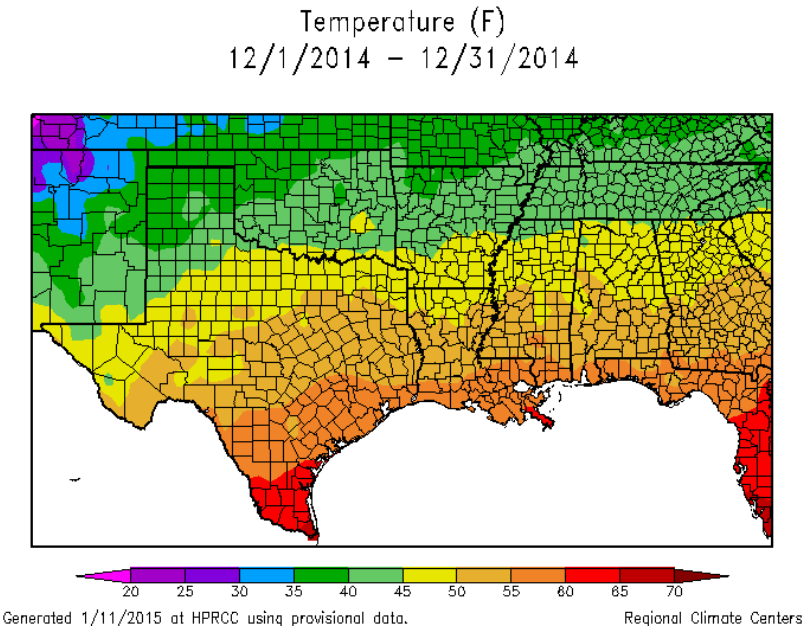
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Above: Drought conditions in the Southern Region. Map is valid for January 6, 2015. Image is courtesy of National Drought Mitigation Center.

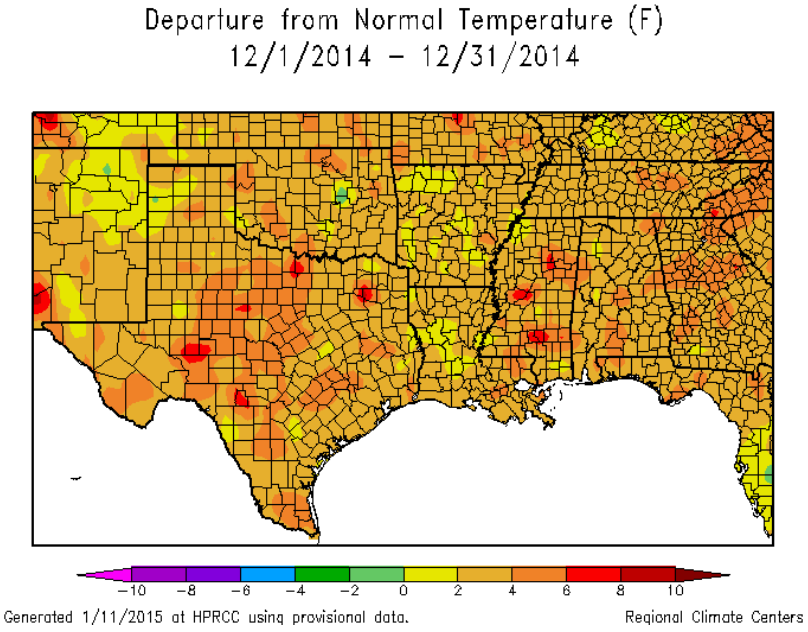
Temperature Summary

Luigi Romolo,
Southern Regional Climate Center

December was a warmer than normal month for the Southern Region. All six states in the region reported an above average state-wide temperature. The majority of stations reported average temperature anomalies of 2 to 4 degrees F (1.11 to 2.22 degrees C) above normal. In central Texas, it was slightly warmer, with most stations reporting 4 to 6 degrees F (2.22 to 3.33 degrees C) above average. The state-wide average temperatures for the month are as follows: Arkansas reported 43.80 degrees F (6.56 degrees C), Louisiana reported 53.90 degrees F (12.17 degrees C), Mississippi reported 50.40 degrees F (10.22 degrees C), Oklahoma reported 42.20 degrees F (5.67 degrees C), Tennessee reported 42.90 degrees F (6.05 degrees C), and Texas reported 50.90 degrees F (10.50 degrees C). For Texas, it was the eighth warmest December on record (1895-2014), while for Mississippi, it was the nineteenth warmest December on record (1895-2014). Oklahoma and Tennessee experienced their twenty-first and twenty-second warmest December (1895-2014), respectively. It was also the twenty-fifth warmest December on record (1895-2014) for Louisiana and the thirty-second warmest December on record (1895-2014) for Arkansas.



Average December 2014 Temperature across the South

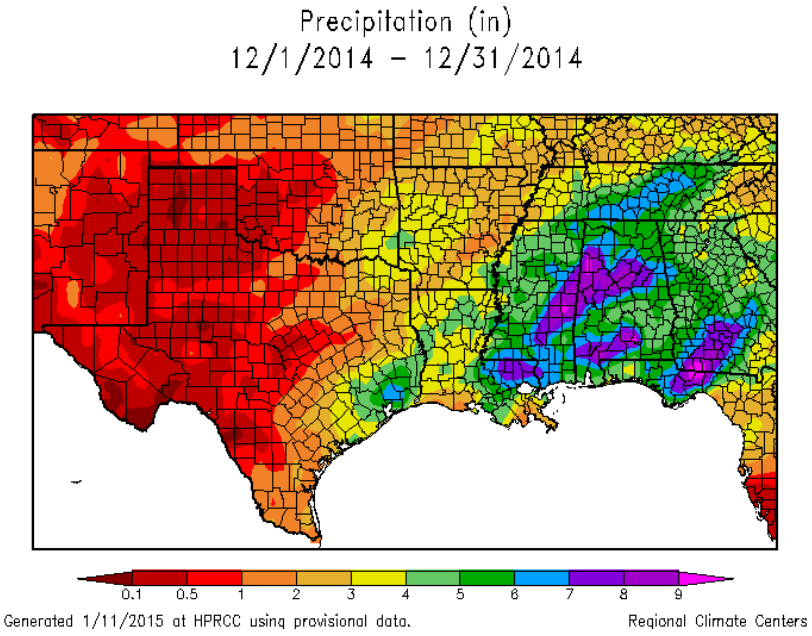


Average Temperature Departures from 1971-2000 for December 2014 across the South

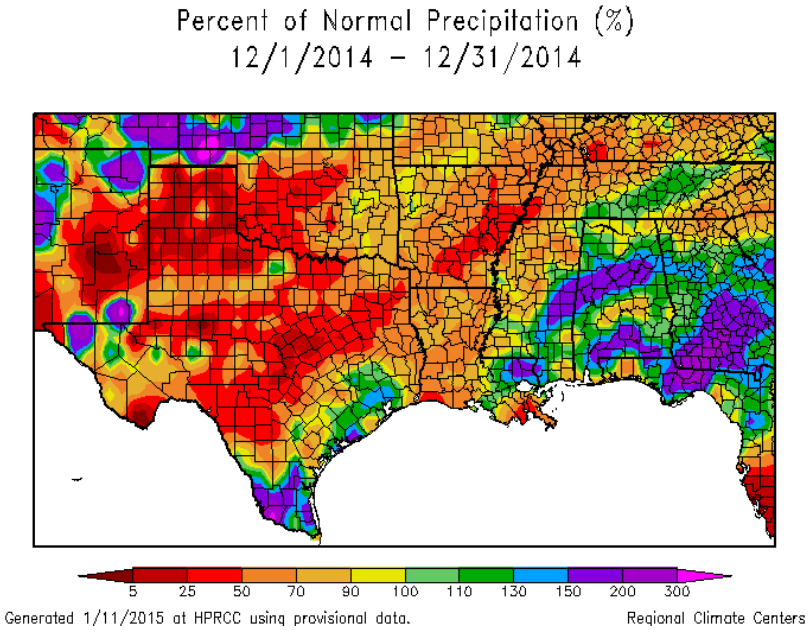
Precipitation Summary

Luigi Romolo,
Southern Regional Climate Center

With the exception of a few spots, December was a drier than normal month across the Southern Region. Precipitation totals were well above average in the South Texas and Lower Valley climate divisions. Precipitation totals there varied between 130-200 percent of normal. Positive anomalies also occurred in east-central Mississippi with stations averaging between one and a half and two times that of normal. Similar values were also observed in Parishes just north of Lake Ponchartrain in Louisiana. Conversely, conditions were quite dry in northern Texas, central Texas, and south western Oklahoma. A bulk of the stations in these areas averaged only between 5 to 50 percent of normal. It was also a very dry month for Arkansas and western Tennessee, where most stations only received between 50 and 75 percent of their normal monthly precipitation. This was also the case through most of Louisiana and north western Mississippi. The state-wide average precipitation totals are as follows: Arkansas recorded 2.91 inches (73.91 mm), Louisiana recorded 3.99 inches (101.35 mm), Mississippi recorded 5.51 inches (139.95 mm), Oklahoma recorded 1.38 inches (35.05 mm), Tennessee recorded 4.53 inches (115.06 mm), and Texas recorded 1.16 inches (29.46 mm). Louisiana experienced their twenty-seventh driest December on record (1895-2014), while for Arkansas, it was the twenty-eighth driest on record (1895-2014.) All other states fell within the two middle quartiles.

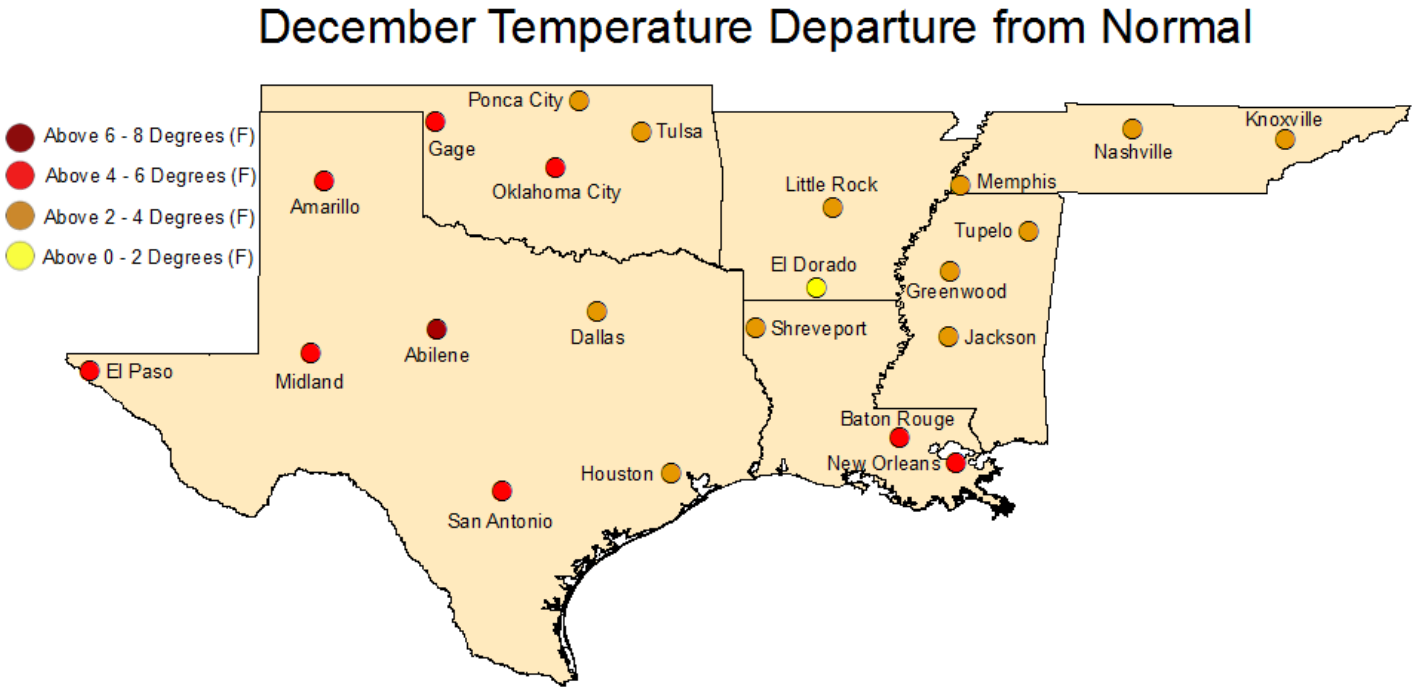


December 2014 Total Precipitation across the South

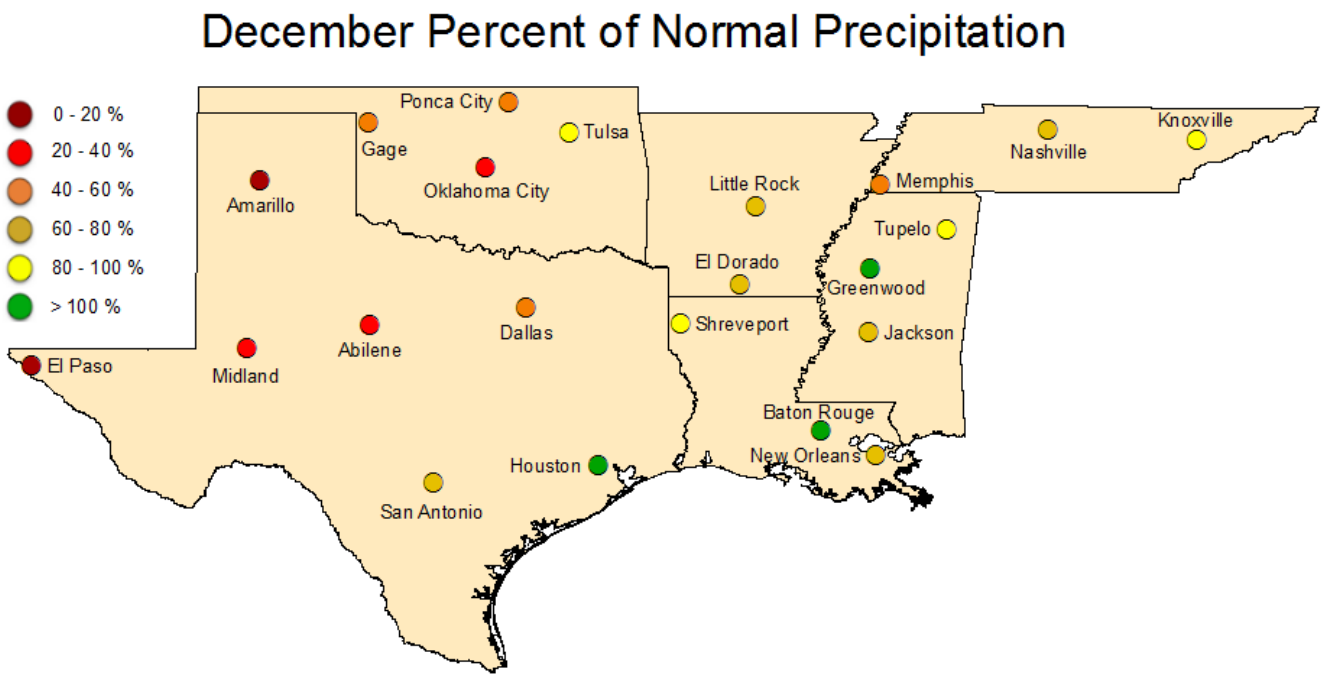


Percent of 1971-2000 normal precipitation totals for December 2014 across the South

Regional Climate Perspective in Pictures



December 2014 Temperature Departure from Normal from 1971-2000 for SCIPP Regional Cities



December 2014 Percent of 1971-2000 Normal Precipitation Totals for SCIPP Regional Cities

Climate Perspective

State	Temperature	Rank (1895-2011)	Precipitation	Rank (1895-2011)
Arkansas	43.80	32nd Warmest	2.91	28th Driest
Louisiana	53.90	25th Warmest	3.99	27th Driest
Mississippi	50.40	19th Warmest	5.51	52nd Wettest
Oklahoma	42.20	21st Warmest	1.38	53rd Driest
Tennessee	42.90	22nd Warmest	4.53	59th Driest
Texas	50.90	8th Warmest	1.16	37th Driest

State temperature and precipitation values and rankings for December 201 4. Ranks are based on the National Climatic Data Center's Statewide, Regional, and National Dataset over the period 1 895-201 1 .

Station Summaries Across the South

Station Summaries Across the South

Station Name	Temperatures								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	%Norm
El Dorado, AR	56.3	39.6	47.9	1.9	71	12/15+	28	12/25	3.33	-1.47	69
Little Rock, AR	52.8	38.7	45.7	2.5	71	12/15	30	12/29+	3.17	-1.54	67
Baton Rouge, LA	67.5	46.1	56.8	4.4	82	12/5	32	12/25	5.68	0.42	108
New Orleans, LA	67.8	51.2	59.5	4.4	81	12/5	38	12/25	3.96	-1.11	78
Shreveport, LA	58.5	42.7	50.6	2.2	74	12/15+	30	12/25	3.75	-0.80	82
Greenwood, MS	58.1	39.8	48.9	2.1	75	12/1	27	12/11+	5.52	0.11	102
Jackson, MS	61.7	41.6	51.6	4.0	78	12/1	30	12/25+	3.94	-1.40	74
Tupelo, MS	54.7	38.7	46.7	3.3	73	12/4	28	12/31+	5.08	-1.04	83
Gage, OK	50.1	30.9	40.5	5.4	65	12/8	10	12/2	0.52	-0.36	59
Oklahoma City, OK	51.2	36.9	44.1	4.6	67	12/13	18	12/28	0.70	-1.19	37
Ponca City, OK	48.3	33.5	40.9	3.8	62	12/14+	12	12/31	0.68	-0.99	41
Tulsa, OK	48.8	36.1	42.5	2.7	65	12/8	18	12/31	1.98	-0.45	81
Knoxville, TN	50.9	36.7	43.8	2.9	64	12/1	22	12/12	4.23	-0.26	94
Memphis, TN	53.1	39.9	46.5	3.2	67	12/6+	27	12/31	2.60	-3.08	46
Nashville, TN	51.0	36.9	43.9	3.4	68	12/5	22	12/12	3.22	-1.32	71
Abilene, TX	60.9	42.8	51.9	6.5	78	12/5	26	12/1	0.43	-0.84	33
Amarillo, TX	52.8	30.4	41.6	4.6	70	12/13	13	12/1	0.12	-0.49	20
El Paso, TX	62.0	37.9	49.9	4.5	72	12/13+	23	12/24	0.12	-0.65	16
Dallas, TX	57.7	43.2	50.4	3.7	77	12/5	29	12/29	1.13	-1.44	44
Houston, TX	66.6	51.6	59.1	3.0	79	12/15	36	12/25	4.61	0.83	122
Midland, TX	61.5	40.2	50.8	6.0	73	12/5+	26	12/1	0.20	-0.45	31
San Antonio, TX	65.1	49.2	57.1	4.7	76	12/15	31	12/25	1.23	-0.73	63

Summary of temperature and precipitation information from around the region for December 201 4. 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 wdays. Blueshaded boxes represent cooler than normal temperatures; redshaded boxes denote warmer than normal temperatures; tan shades represent drier than normal conditions; and green shades denote wetter than normal conditions.

New Orleans 2014 Weather Summary

Barry Keim, Louisiana State Climatologist, Louisiana State University

As we move through the coldest week of the winter season, climatically, I will provide a brief summary of 2014's weather data collected at New Orleans International Airport. This report is chock-full of statistics, so prepare to have your head spin.....but just a little! Figure 1 below shows a time series of the daily minimum and maximum temperatures for every day across the entire year of 2014. As shown, our temperature regime was quite stable from mid-May through September, centered on our summer. During the other months of the year, we experience frontal passages that cause the wild swings from warm to cold temperatures. As shown, the coldest temperature over the entire year at the Airport was 24 degrees measured on the morning of January 7th. In contrast, the hottest temperature during the year was 96 degrees, measured on August 23rd. Airport temperatures dropped to freezing or below 10 times in 2014 – 9 times in January and once in November. On warm side of the equation, we equaled or exceeded 90 degrees on 78 days of 2014, and we equaled or exceeded 95 degrees only 6 times - obviously mostly in summer. AND, we exceeded 95 degrees only once, for the record temperature of the year at 96! For the year overall, New Orleans averaged 68.9 degrees, which was 0.8 degrees below normal. Rainfall for the year mostly remained below normal, but not by much, but rain really fell off the mark in October, November, and December to end the year. By year's end, the Airport accumulated 54.76 inches of rain. Normal rainfall for a year is 62.45 inches, hence we were 7.69 inches below normal for the year. We had at least some recorded rain on 110 days of the 365 that make up the year – whereby we average about 115 "rain days" a year. We also had 18 separate days where we recorded at least an inch of rain, with the wettest single day rainfall total coming in at 3.54 inches on May 9th. As noted in earlier posts, the year was mostly uneventful weatherwise, which is actually a very good thing. Please contact me at keim@lsu.edu with any comments.

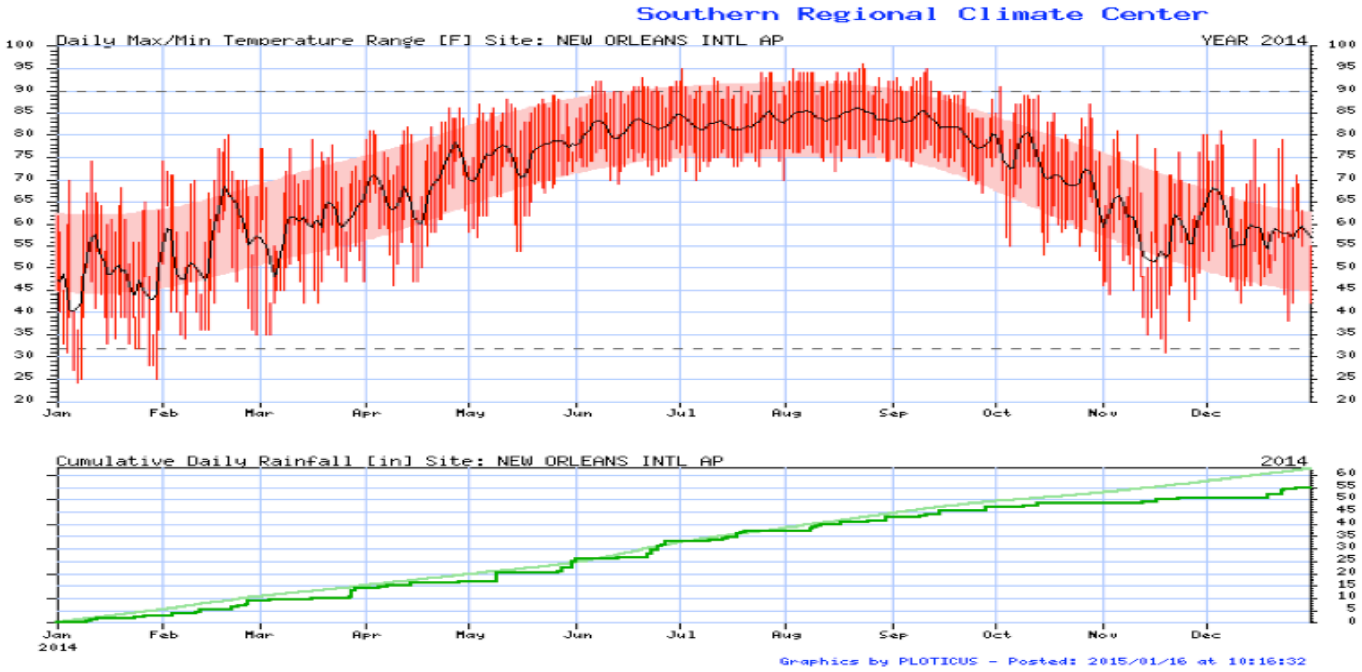


Figure 1. Daily temperature and precipitation relative to "normal" for 2014. Data and graphic are from the Southern Regional Climate Center, LSU.

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Contact Us

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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 225-578-5021.

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.

Monthly Comic Relief

SCIPP
A NOAA RISA TEAM