SCIPP
A NOAA RISA TEAM

Southern Climate Monitor

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In This Issue:

The Southern Climate Monitor is available at
www.srcc.lsu.edu & www.southernclimate.org

Planning is telling a story…

Paula J. Dennison, AICP - Development Services Director
City of Stillwater, Oklahoma

A professional acquaintance once wrote an article entitled, "PLAN is a 4-letter word". For a time, that was an on-going joke at all conferences and pretty much any time that author was seen in public. However, there is some validity.

First, let's start with other 4-letter words: HELP, LIVE, STOP, FACT, TREE, LOVE, THEY, WORK, FOOD, JOKE, LAMB, FUZE, JEEP, LAZY, JURY, CUFF, EXPO, AQUA, TZAR…and on and on. Each of these words means different things to every individual person. Each of these words tells a story. Stories recall and relate our history, individually or collectively; stories tell of our futures. So, with all of the 4-letter words in the world, PLAN is story-telling.

To begin, let's define "story". According to Merriam-Webster, story is "history"; "an account of incidents or events"; "a statement regarding the facts pertinent to a situation"; "a fictional narrative shorter than a novel"; "the intrigue or plot of a narrative or dramatic work"; "lie, falsehood"; "legend, romance"; "a news article or broadcast"; "to narrate or describe in story"; "to adorn with a story or a scene from history"; "the space in a building between two adjacent floor levels or between a floor and the roof"; and more.

For any story to be effective, a few things are necessary:

- Relations and partnerships with others. Stories are to be told; stories are to be made. Building relationships and partnerships makes stories and tells stories. Think of a most prized relationship or partnership. Reflect on the stories made – now go tell them. But don't stop there. Think of a relationship or partnership that is negative or harmful. Reflect on that story and realize its importance in the path of your life.
- Every opportunity, good or bad, builds a story. Opportunities are placed before us as choices; opportunities are not to be overlooked. Many people control their lives in such a manner as to also control the opportunities that present themselves. Others "live by the seat of their pants" and face the surprise opportunities when they come along. Whether of our own doing or of another force/power, each of us are responsible for the choices we make when opportunities arise. Again, our lives are told by these stories.
- New ideas and revelations allow additional and fresh stories to be made. A great example of the Simple Planning Tool created by SCIPP. The idea for this Tool came from discussions among professional groups that are typically not associated with each other. The Tool will aid every community, region and state in telling their story. Without the new partnership, the new opportunity and the new idea, this Simple Planning Tool would not be in existence today.

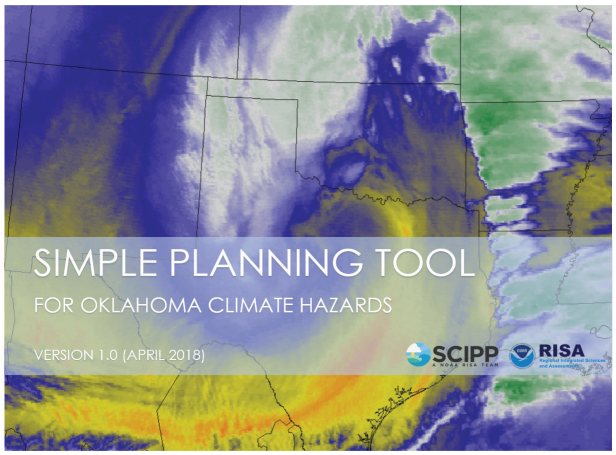
Now, what is "plan" and how is it applicable here? Merriam-Webster defines plan as "a drawing or diagram drawn on a plane"; "a method for achieving an end"; "an orderly arrangement of parts of an overall design or objective"; "a detailed program" (pension plan); "to arrange the parts of"; "to have in mind"; "to make plans" and more. On a related form of the word plan, Merriam-Webster defines planning as "the act or process of making or carrying out plans"; "the establishment of goals, policies and procedures for a social or economic unit".

Why should any of this concern us? Ask yourself these questions:

- How can extreme weather patterns or events be planned for?
- What can individuals do to plan for extreme weather events and climate change?

- Why should anyone plan for extreme weather events and climate change?
- How can we learn from the past to ensure resiliency and sustainability of our future?

In the Southern Climate Monitor, April 2018, Volume 8, Issue 4 edition, the Simple Planning Tool for Oklahoma Climate Hazards was introduced. This Tool is the perfect example of seeing our past and using the data therefrom to analyze, predict and prepare for our future. The Tool itself has a story to tell and it tells the story for Oklahoma.



Simple Planning Tool for Oklahoma Climate Hazards

Using the Simple Planning Tool as an example, our 4-letter word "PLAN" has two stories. The first story is our history, of which the 4-letter word is "past"; the second story is our future, of which the 4-letter word is "hope".

The PLAN story: Our History.

As the Simple Planning Tool demonstrates, climate hazards in Oklahoma are historic. Historic not simply from the intensity and impact of the events on our communities and our land but from the aspect of data that is recorded and used to predict such climate hazards in our future. The past recordings of climate hazards demonstrates fully the purpose and reliance of history:

- Climatic events
- Climate changes
- Records of extremes
- Records of actions taken to mitigate
- Foundation for the future
- Lessons learned
- Change/evolution/adaptation
- Reality
- Factual
- Fades with time

The PLAN story: Our Future.

Again, the Simple Planning Tool provides the historic information, data, and trends so that our future can be written in a way that recognized the past, yet utilizes and learns from it. Our hope is the desire we have to move each of us forward in a manner better than that utilized in the past. Instrumental in writing our future, the following must be included and considered:

- Partnerships
- Dreams
- Visions
- Building on the platform of our history
- Things new: techniques, methods, materials, ideal
- Uncertainty
- Guess-work
- No guarantee
- Less secure

Each of us "plan" every day: what to wear, to eat, to purchase; where to go on vacation; to go out or stay home; over and over. No matter what the plan is, it is not set in stone; it is not static; it is flexible; it is uncertain. The great reward is that we have the chance to correct the bad decisions and actions of those that preceded us. The same applies to all aspects of our lives. For our communities, regions, states, and nation to survive and be ready for whatever comes along, we must build on our history story and visualize our future story. As Eleanor Roosevelt said, "The future belongs to those who believe in the beauty of their dreams." Dreams are formed from our experiences and from influences...histories.

Daniel Burnham, architect and city planner, is one of the most fascinating and significant people in the history of urban planning. He was the head architect of the World's Fair and a visionary in city architecture. Seeing the history, he determined to change cities from being crowded and dirty to places beautiful and efficient.

In the midst of urban disorder, Burnham offered a powerful vision of what a civilized American city could look like. His Plan of Chicago of 1909, familiarly known as the Burnham Plan, has guided the planning and story-telling of our communities at an unprecedented level. Although the Plan of Chicago is highly illustrated and conceptual, the applicable path to story-telling is the history that caused the Plan to be developed in the first place, the continuing evolution of the city by following some and not following other recommendations of the Plan, and the continuing [future] influence the Plan has to this very day in how others view and understand Chicago – as well as how they plan and story-tell their communities.

Daniel Burnham

https://the1893worldsfair.weebly.com

One of the greatest quotes of all time, for us planners anyway, from Daniel Burnham is, "Make no little plans; they have no magic to stir men's blood and probably themselves will not be realized. Make big plans; aim high in hope and work, remembering that a noble, logical diagram once recorded will never die, but long after we are gone be a living thing, asserting itself with ever-growing insistency. Remember that our sons and our grandsons are going to do things that would stagger us. ..."

Daniel Burnham realized the importance of history and its impact on future. As each of us are representatives of our past, we are responsible for our future. Each story has value. Therefore, make no little PLANs nor keep your STORY to yourself.

For guidance on plans, the American Planning Association is found at www.planning.org

APA American Planning Association

Making Great Communities Happen

Drought Update

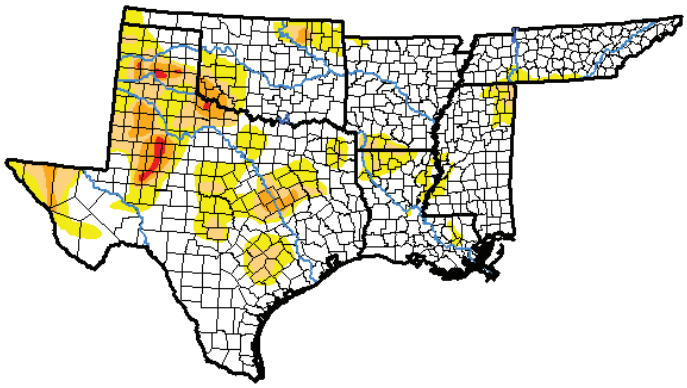
Kyle Brehe and Derek Thompson,
Southern Regional Climate Center

At the end of September, exceptional drought conditions were no longer present across the Southern Region. Extreme drought classifications were present in northern and northwestern Texas. Severe drought classifications were present throughout northern, northwestern, extreme western, and east-central Texas as well as southwestern and northeastern Oklahoma. Moderate drought classification was present throughout extreme western, northern, central, southeastern, and eastern Texas, southwestern and northeastern Oklahoma, northwestern, southwestern, and southern Arkansas, northwestern and northern Louisiana, and northeastern Mississippi. There were no drought conditions in Tennessee.

In September, there were a total of 27 storm reports across Texas, Oklahoma, Arkansas, Louisiana, Tennessee, and Mississippi. There were 5 tornado reports, 2 hail reports, and 20 wind reports. Tennessee tallied the most wind reports (8) and both Tennessee and Mississippi tallied the most tornado reports (2). Both Texas and Louisiana tallied 1 hail report. Tennessee tallied the most reports total (10) while Louisiana and Oklahoma tallied the least (1).

On September 5, 2018, a tornado was reported near Kilmichael, Mississippi.

On September 25, 2018, a small, short-lived EF-1 tornado was reported near Clarkrange, Tennessee, hitting a residence and nearby areas. No injuries were reported.



Released Thursday, September 27, 2018
Jessica Blunden, NCEI/NOAA

Above: Drought Conditions in the Southern Region. Map is valid for September 25, 2018. Image is courtesy of the National Drought Mitigation Center.

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	70.82	29.18	12.09	4.10	0.48	0.00
Last Week *09-18-2018*	56.31	43.69	18.80	5.69	1.30	0.05
3 Months Ago *06-26-2018*	33.02	66.98	36.32	13.14	4.13	0.05
Start of Calendar Year *01-02-2018*	31.09	68.91	42.64	15.33	0.30	0.00
Start of Water Year *09-26-2017*	72.17	27.83	2.38	0.02	0.00	0.00
One Year Ago *09-26-2017*	72.17	27.83	2.38	0.02	0.00	0.00

Intensity:

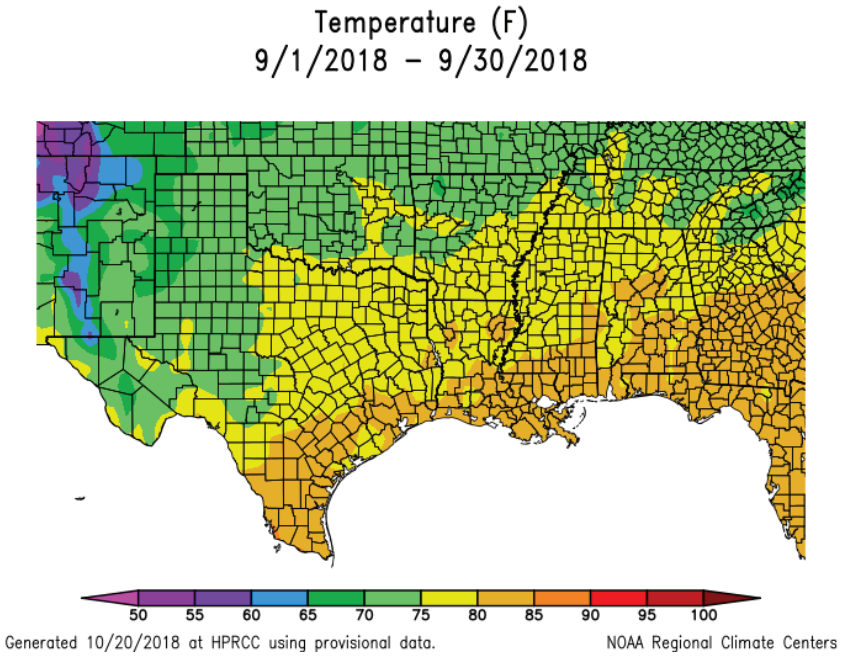
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

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

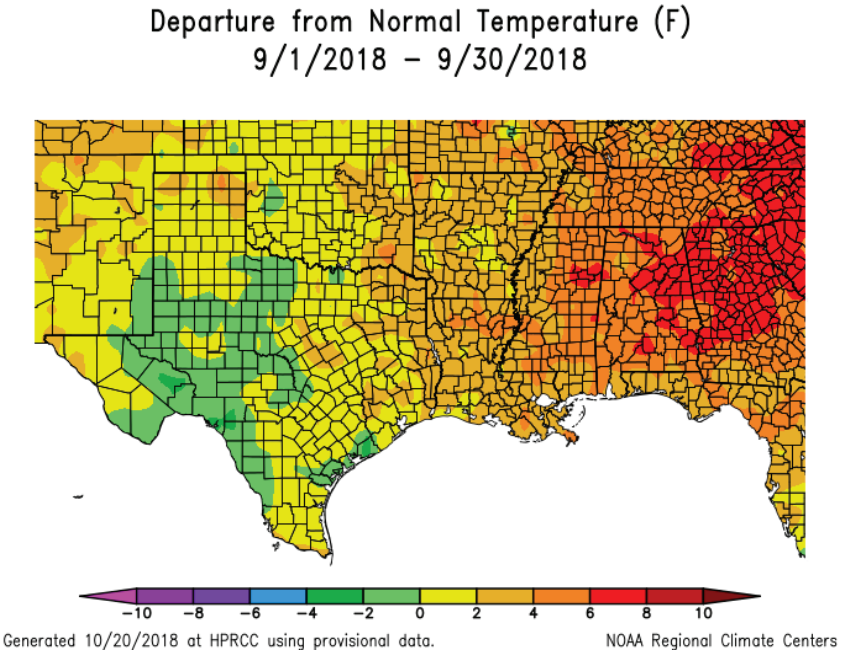
Temperature Summary

Kyle Brehe and Derek Thompson,
Southern Regional Climate Center

Temperatures for the month of September varied spatially throughout the Southern Region. Parts of southwestern and western Texas experienced temperatures 2 to 4 degrees F (1.11 to 2.22 degrees C) below normal. Most of Louisiana and Arkansas, eastern and northwestern Oklahoma, northern, extreme western, extreme southern, eastern, and parts of central Texas, southern, southwestern, central, and northwestern Mississippi, and western Tennessee experienced temperatures 2 to 4 degrees F (1.11 to 2.22 degrees C) above normal. Parts of northern and northeastern Texas, northwestern, northeastern, and southeastern Oklahoma, northern, northeastern, and southeastern Louisiana, northwestern, northeastern, and southwestern Arkansas, southern, northern, and eastern Mississippi, and central, southern, and northern Tennessee experienced temperatures 4 to 6 degrees F (2.22 to 3.33 degrees C) above normal. Parts of eastern Mississippi as well as southern, northern, and eastern Tennessee experienced temperatures 6 to 8 degrees F (3.33 to 4.44 degrees C) above normal. The statewide monthly average temperatures were as follows: Arkansas – 75.10 degrees F (23.94 degrees C), Louisiana – 80.30 degrees F (26.83 degrees C), Mississippi – 79.10 degrees F (26.17 degrees C), Oklahoma – 73.90 degrees F (23.28 degrees C), Tennessee – 75.10 degrees F (23.94 degrees C), and Texas – 76.30 degrees F (24.61 degrees C). The statewide temperature rankings for September were as follows: Arkansas (twenty-eighth warmest), Louisiana (tenth warmest), Mississippi (seventh warmest), Oklahoma (forty-eighth warmest), Tennessee (sixth warmest), and Texas (fifty-third warmest). All state rankings are based on the period spanning 1895-2018.



Average September 2018 Temperature across the South

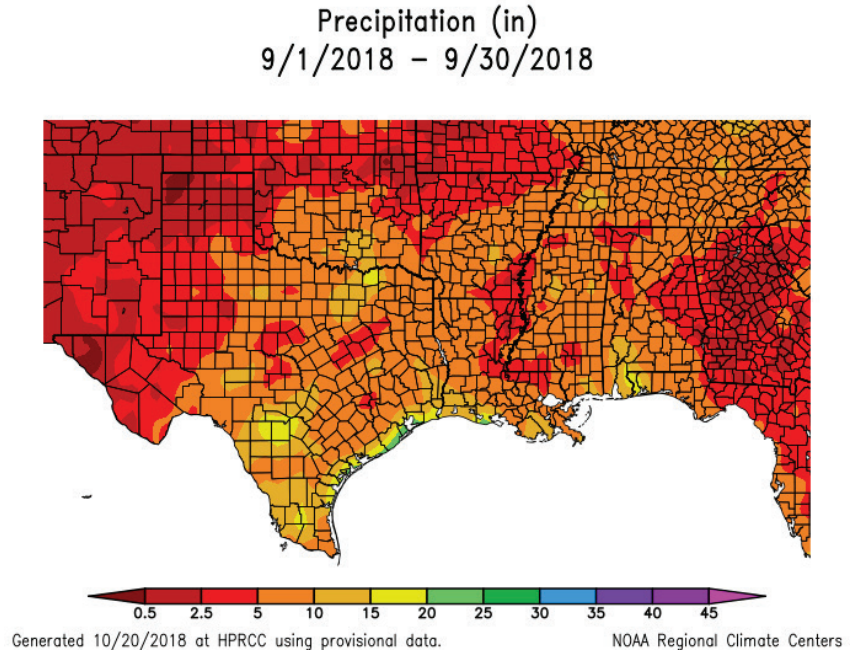


Average Temperature Departures from 1981-2010 for September 2018 across the South

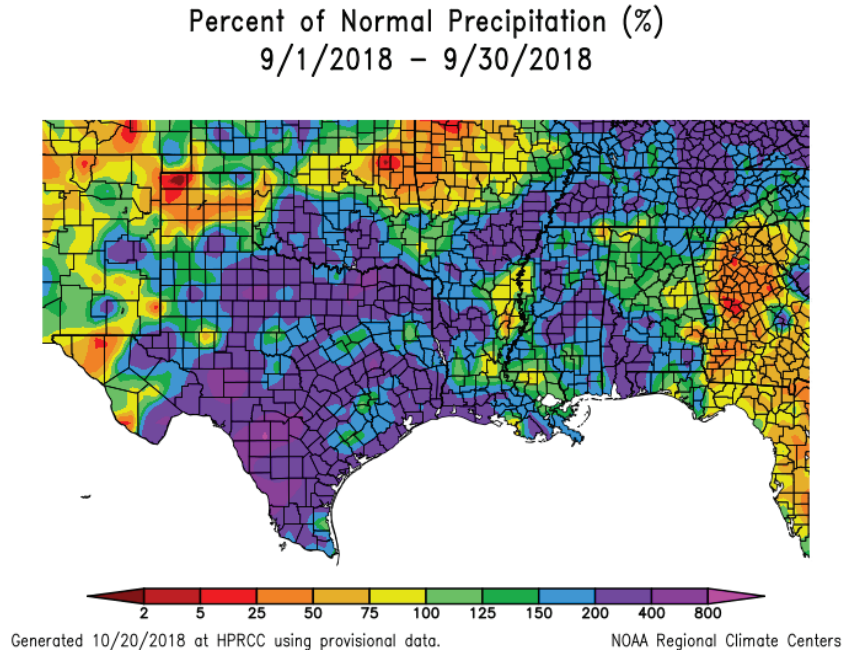
Precipitation Summary

Kyle Brehe and Derek Thompson,
Southern Regional Climate Center

Precipitation values for the month of August were above normal across much of the Southern Region. Parts of northern and extreme western Texas as well as northeastern Oklahoma received 25 percent or less of normal precipitation. Parts of northern, western, and extreme western Texas, northeastern and northwestern Oklahoma, northwestern and southeastern Arkansas, and part of western Mississippi received 50 percent or less of normal precipitation. In contrast, parts of western, southern, central, northern, eastern, and northeastern Texas; western, central, southern, southeastern, and eastern Oklahoma; southern and northern Louisiana, central, southwestern, and northeastern Arkansas, most of Mississippi, and most of Tennessee received 150 percent or more of normal precipitation. Parts of north-central, western, southern, and eastern Texas; northwestern, central, and southern Oklahoma; central and eastern Arkansas; northwestern, northeastern, southwestern, and southeastern Louisiana, central, northwestern, eastern, and parts of northern and southern Mississippi, and western and eastern Tennessee received 200 percent or more of normal precipitation. Parts of northeastern and southern Texas, southern Oklahoma, and east-central Arkansas received 400 percent or more of normal precipitation. An area in southern Texas received 800 percent or more of normal precipitation. The state-wide precipitation totals for the month were as follows: Arkansas – 5.21 inches (132.33 mm), Louisiana – 7.05 inches (179.07 mm), Mississippi – 6.59 inches (167.39 mm), Oklahoma – 5.38 inches (136.65 mm), Tennessee – 7.20 inches (182.88 mm), and Texas – 6.77 inches (171.96 mm). The state precipitation rankings for September were as follows: Arkansas (twenty-third wettest), Louisiana (tenth wettest), Mississippi (tenth wettest), Oklahoma (eighteenth wettest), Tennessee (third wettest), and Texas (first wettest). All state rankings are based on the period spanning 1895-2018.

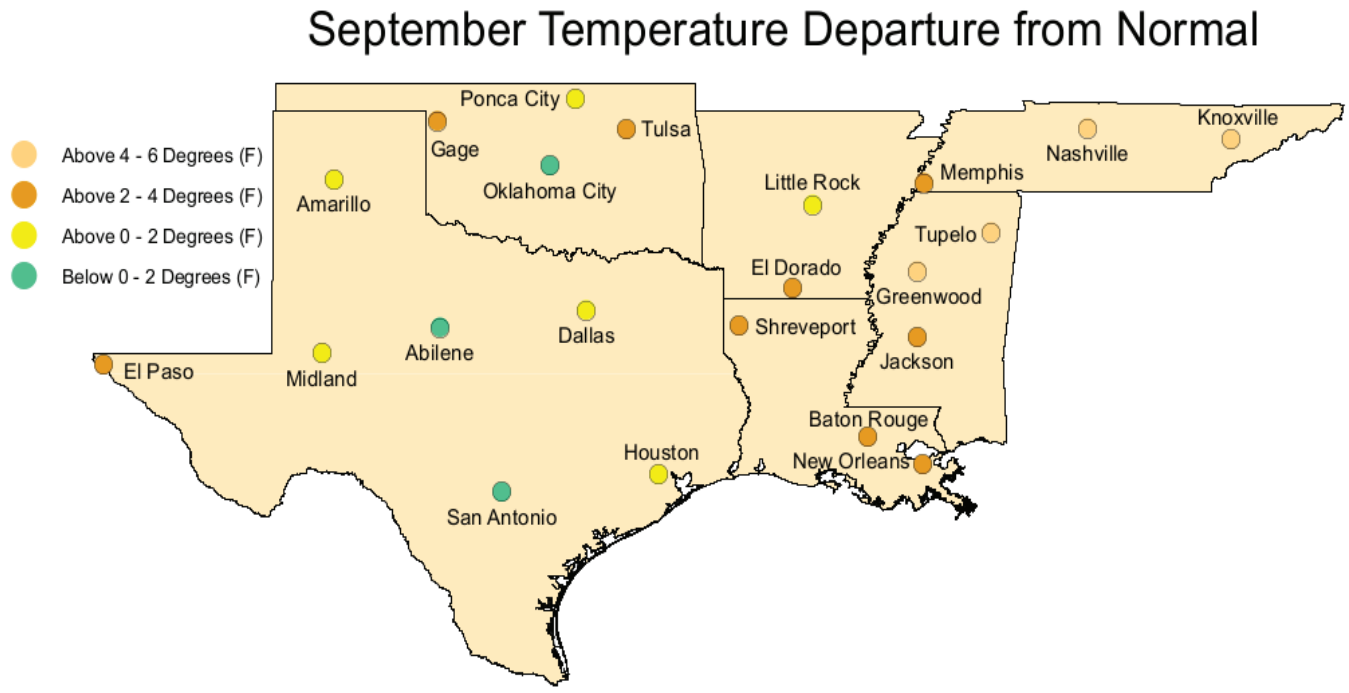


September 2018 Total Precipitation across the South

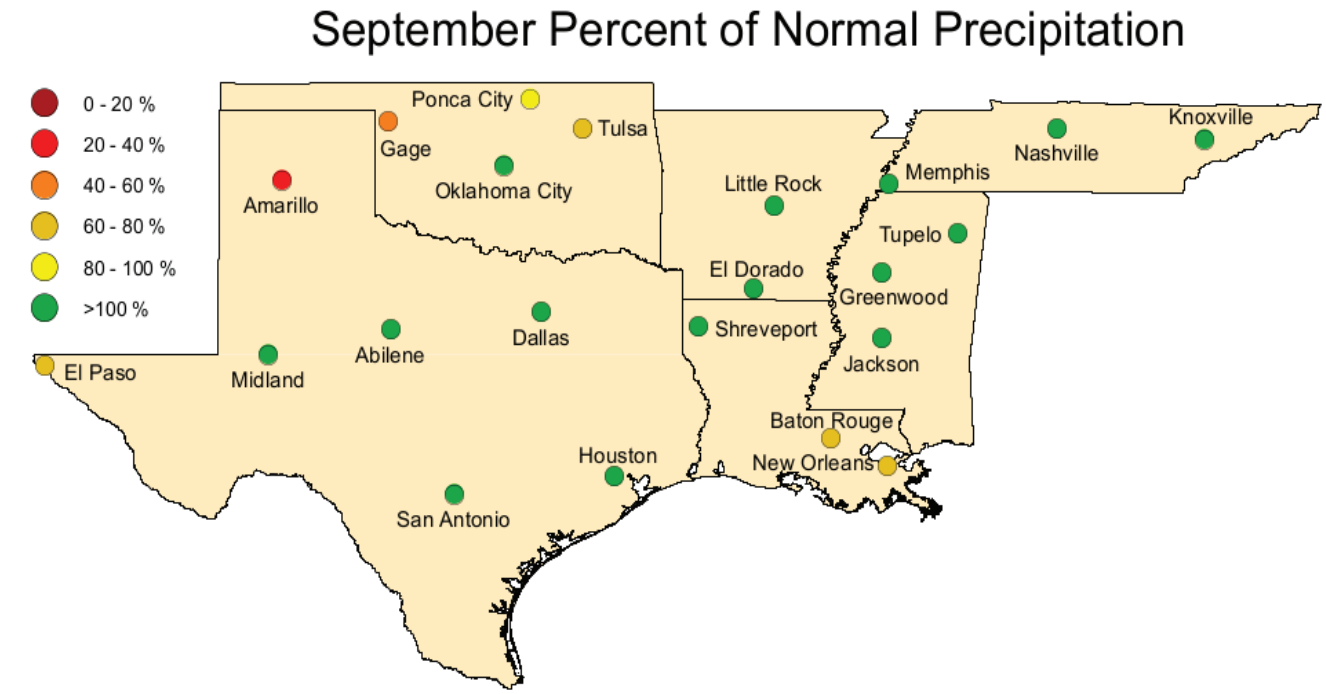


Percent of 1981-2010 normal precipitation totals for September 2018 across the South

Regional Climate Perspective in Pictures



September 2018 Temperature Departure from Normal from 1981-2010 for SCIPP Regional Cities



September 2018 Percent of 1981-2010 Normal Precipitation Totals for SCIPP Regional Cities

Climate Perspective

State	Temperature	Rank (1895-2018)	Precipitation	Rank (1895-2018)
Arkansas	75.10	28th Warmest	5.21	23rd Wettest
Louisiana	80.30	10th Warmest	7.05	10th Wettest
Mississippi	79.10	7th Warmest	6.59	10th Wettest
Oklahoma	73.90	48th Warmest	5.38	18th Wettest
Tennessee	75.10	6th Warmest	7.20	3rd Wettest
Texas	76.30	53rd Warmest	6.77	1st Wettest
Regional	**76.63**	**17th Warmest**	**6.37**	**3rd Wettest**

State temperature and precipitation values and rankings for September 2018. Ranks are based on the National Climatic Data Center's Statewide, Regional, and National Dataset over the period 1895-2018.

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
Little Rock, AR	83.9	67.4	75.7	0.7	95	09/18	54	09/28	7.02	3.84	220
Baton Rouge, LA	89.6	73.0	81.3	2.7	98	09/18	69	09/28	3.38	-1.16	74
New Orleans, LA	90.4	76.3	83.3	3.6	98	09/17+	73	09/05	3.54	-1.43	71
Shreveport, LA	87.8	71.8	79.8	2.9	97	09/18+	63	09/27	9.10	5.94	287
Greenwood, MS	87.6	70.0	78.8	4.1	96	09/19	60	09/29	12.33	8.67	336
Jackson, MS	88.0	70.5	79.2	3.6	95	09/19+	63	09/29+	9.49	6.46	313
Tupelo, MS	87.9	69.7	78.8	4.7	98	09/19	59	09/29	6.92	3.48	201
Gage, OK	84.4	61.0	72.7	2.1	94	09/20+	38	09/27	1.00	-0.94	51
Oklahoma City, OK	81.1	65.1	73.1	-0.8	92	09/01	46	09/27	8.42	4.36	207
Ponca City, OK	83.4	64.8	74.1	2.0	94	09/19+	40	09/27	2.78	-0.51	84
Tulsa, OK	84.6	67.2	75.9	2.9	97	09/19	46	09/27	3.06	-1.20	71
Knoxville, TN	85.1	67.6	76.4	5.3	92	09/03	60	09/30	7.40	4.16	228
Memphis, TN	85.5	70.1	77.8	2.6	95	09/20+	58	09/29	5.27	2.18	170
Nashville, TN	86.3	68.3	77.3	5.8	97	09/20	55	09/28	6.90	3.49	202
Abilene, TX	82.8	65.5	74.1	-1.4	96	09/01	50	09/27	5.75	3.51	256
Amarillo, TX	84.3	58.2	71.2	1.7	93	09/01	45	09/29	0.76	-1.16	39
El Paso, TX	90.1	67.1	78.6	3.2	98	09/13	59	09/23	1.21	-0.30	80
Dallas, TX	85.4	70.7	78.1	0.1	95	09/01	59	09/26	12.69	10.14	497
Houston, TX	87.4	74.0	80.7	0.9	96	09/18+	69	09/28	8.60	4.48	208
Midland, TX	85.2	65.2	75.2	0.7	98	09/01	52	09/23	2.69	0.83	144
San Antonio, TX	86.7	71.9	79.3	-0.4	99	09/02	64	09/28	16.86	13.83	556

Summary of temperature and precipitation information from around the region for September 2018. 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. 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 Research: Spatial Trends in United States tornado frequency

Margret Boone, SCIPP Program Manager

Researchers from Northern Illinois University and the National Severe Storms Laboratory in Norman, OK, published a new study analyzing the spatial trends in tornado frequent across the United States. The article, "Spatial trends in United States tornado frequency", which appeared in the October 2018 Climate and Atmospheric Science Nature partner journal, discusses increasing and decreasing trends in the spatial frequency of annual tornado reports.

Previous analysis showed the significant tornado parameter (STP) could be used as a climatological proxy for annual tornado reports. By using STP as a proxy, Dr. Harold Brooks and Dr. Vittorio Gensini used a Theil-Sen slope analysis and a Kendall's test to analyze the data. Results show a downward trend in annual accumulation of STP over the central and southern Great Plains, and an upward trend in portions of the Southeast, Midwest, and Northeast (See Figure 1). Likewise, both tornado reports and environments (STP) indicate significant decreasing trends in tornado frequency over parts of Texas, Oklahoma and northeast Colorado. Also noted is a significant increasing trend in tornado reports in parts of Mississippi, Alabama, Arkansas, Missouri, Illinois, Indiana Tennessee and Kentucky. The analysis period for this research was 1979-2017.

This work is important to help understand tornadoes as hazards. Severe thunderstorms that contain damaging wind, hail, and potentially tornadoes cause on average 5.4 billion dollars of damage each year in the US. Therefore, it is beneficial to understand both the climatological probability of a tornado report and the societal vulnerability of a given region. Furthermore, climate downscaling and societal vulnerability studies indicate a potential for increased tornado disasters in the Mid-South as we move further into the 21st century.

It is uncertain whether natural variability or anthropogenic forcing are causing the trends in the tornado environment and report frequency. However, climate models do indicate the potential increase in conditions that are favorable for severe weather development, including conditions favorable for tornadic development.

If you are interested in reading this publication, the manuscript can be found online at the following link: https://www.nature.com/articles/s41612-018-0048-2

For more information about this research, contact Vittorio Gensini, vgensini@niu.edu

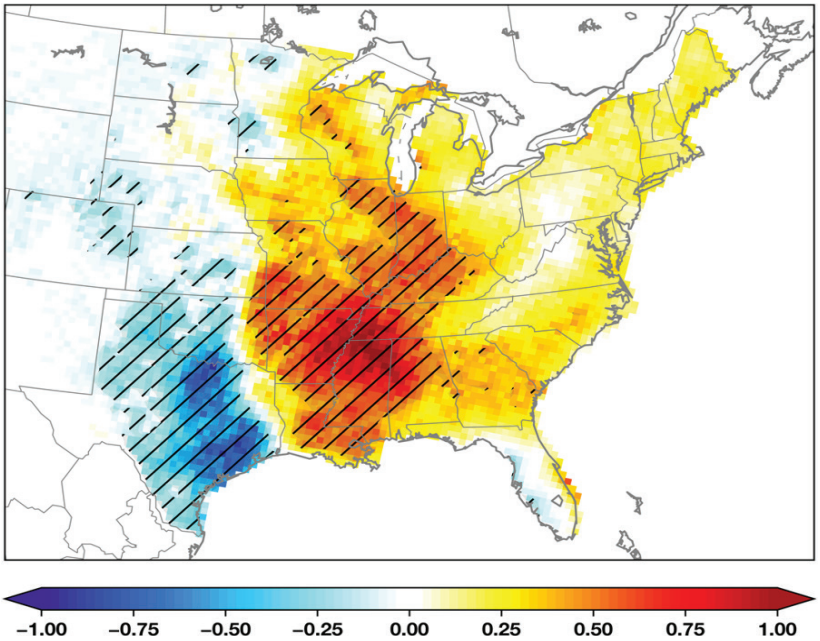


Figure 1: Change in Significant Tornado Parameter, 1979-2017, showing increasingly favorable conditions in the Midwest and South and less favorable.

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From Our Partners

South Central Climate Science Center

New Website Coming Soon: Thank You for Your Patience

We are currently in the process of developing a new website to better suit the needs of our partners. We anticipate rolling out this new site in late 2018. In the meantime, please be aware that this website will be updated less often than usual and some information may not be current. However, there are many ways of staying updated with the latest South Central CASC news during this transition:

-Visit our USGS-hosted website for detailed information about our projects and programs

-Sign up for our newsletter

-Follow us on Facebook and Twitter

-We look forward to sharing our new website with you!

Contact Us

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 & 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)578-5021.

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