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A Personal Viewpoint of SCIPP and Its Success

David Schlotzhuaer, CEM, NWS Lower Mississippi River Forecast Center
Hydrologist, SCIPP Advisory Committee Member

Introduction

Call this a reflection or introspection or contemplation (perhaps I'm reflecting on my association with SCIPP)...it could be an OpEd piece...or maybe just call it an essay. Regardless, I'd like to diverge from the hard science usually found in this column and provide some ideas I have about SCIPP, review what it is, and why I see it as a success. These thoughts come from a synthesis of work in emergency management and hydrologic forecasting as well as experience as both a consumer and provider of information related to climate and weather. (Disclaimer - as a member of the SCIPP Advisory Board, I suppose I'm expected to speak well of the program...but a lot of great things really have been accomplished!)

By education, I am a scientist and engineer with two of my three degrees being in Earth/Atmospheric sciences. This ties me in closely with the climate side of things. By profession, I have many years of experience in the emergency management field; this included everything from being a HazMat Tech to doing the planning and operations for a state emergency management agency. Now I am a hydrologist with the National Weather Service. My initial interaction with SCIPP was as a customer and consumer of products; now I can support the research that is done.

My positions as a consumer and provider of scientific information have led to an interest in how technical information is communicated to the lay audience. Following are some experiences with science, with SCIPP, and how the program succeeds in providing useful,

needed information to its lay customers. I'll discuss some strengths I think SCIPP has with which science, in general, has problems.

SCIPP Background

In order to understand why SCIPP is successful, it is important to understand both why SCIPP exists and its mission. The National Oceanic and Atmospheric Administration recognized a need to explicitly connect climate sciences and societal impacts; this connection was formalized through the Regional Integrated Science Assessments (RISA) Program. RISA advocates stakeholder-focused research to bring together scientists and decision makers "to openly discuss climate issues, share knowledge, and identify areas requiring more research and attention in the future" [<http://www.southernclimate.org/pages/about#risa-program>].

SCIPP is one of ten RISA teams in the United States. "Its mission is to increase the region's resiliency and level of preparedness for weather extremes now and in the future across the south central United States." Specific mission tasks reference "engaging stakeholder groups" and providing "decision makers with climate hazard data that are comprehensive, accurate, and easily accessible" [<http://www.southernclimate.org/pages/about#mission-statement>].

General Problems with Science and Scientists

Professionals in the sciences have their own languages, and there is a reason for the technical terms. But how do we communicate information to someone outside our profession, e.g. the

layperson? I think we've all experienced (the medical profession comes to mind) that scientists can be a bit arrogant about their language!

So let me pose a question here -- What is science? Just a quick look at the internet -- gives me one definition that lets me make my point -- "science is discourse" [<https://www.quora.com/What-is-the-main-purpose-of-science>]. Note that this brief definition doesn't say between whom the discourse occurs, though, and I'll point out that this definition implies maybe we should be talking to anyone and everyone, not just our colleagues in our own scientific field.

Scientists focus on explaining the world, testing hypotheses, and developing theories. Einstein was right at the top, he has a theory that contains his name; Newton did one better and made it to the pinnacle of theoretical work, he has physical Laws named after him! But what do these hypotheses, theories, and laws mean to the lay person who doesn't care about the "why" and "how", but just wants to know the impacts?! And, when scientists do discuss impacts they tend to fall back onto the arrogant attitude of "here's what I think you need to know" and may not really answer the customer's need.

Scientists generally write for their peers. The peer-review process (to "get published") is well known to scientists as the way to get their work recognized and accepted. But, in writing for peers, the lay audience loses out.

So What Makes SCIPP a Success?

The Mission -- RISA and SCIPP have done an excellent job of identifying a need to provide climate science research results and information to a lay audience; indeed, recognizing that the "lay audience" is actually made up of many different groups with as many different needs. The mission statements of both programs provide a strong basis and guidelines from which and within which to operate.

The Science -- Of course, scientific research must be sound and defensible. "Physical science research is conducted to better understand the physical surroundings and the climate hazards that impact the southern U.S." and "research allows us to contribute to the advancement of science" [<http://www.southernclimate.org/pages/past-research>]. All of the work done by SCIPP is scientifically based and therefore provides results that are reliable and defensible.

The Audiences -- SCIPP finds and reaches out to the correct customers; "Social science methods are employed to understand needs and the contexts in which decisions are made so that our research, products and services are relevant to decision makers" [<http://www.southernclimate.org/pages/past-research>]. Customers include emergency managers, tribal nations, the agriculture community, etc.

The Data -- SCIPP provides the right data in useful formats. Many of the research projects that are based on understanding the real world, how it behaves, and how it is changing have generated datasets useable by the customers. These data sets are presented in web-enabled tools that allow easy access and understanding. [<http://www.southernclimate.org/pages/data-tools>]

The Communication -- Based on my earlier premise of "science is discourse," SCIPP is customer-focused. The information it communicates is understandable, and the data is useable and actionable by the customer. To make the data accessible and easy to use, many of the research results have been turned into data tools that are easily used via the SCIPP website [<http://www.southernclimate.org/pages/data-tools>].

The Next Generation -- This should be a given in science and is in academia. The SCIPP staff and researchers do a fantastic job of providing both research and operations/outreach opportunities

researchers do a fantastic job of providing both research and operations/outreach opportunities to students and teaching them to be the scientists of the future.

Summary

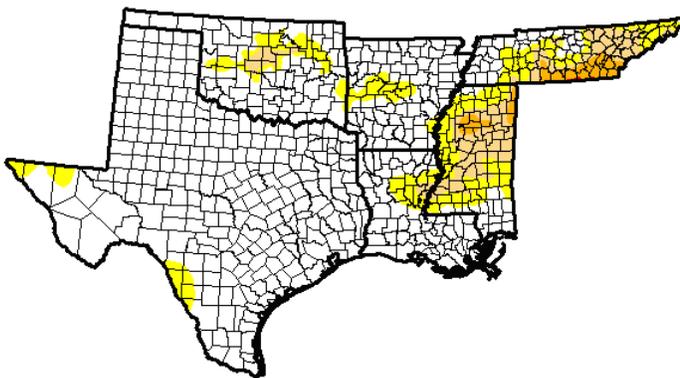
Climate issues are important to everyone, but because they are very strongly science based they can be difficult to set forth to a lay audience. SCIPP has done an excellent job of meeting the requirements of the RISA program through its definition of mission, audiences, and outputs. There is no scientific “snootiness.” The research is based on the needs of formally defined customers, and the information/data is presented in readily useable formats. From a personal standpoint, I find myself very happy with and proud of my involvement with SCIPP, both as a customer and consumer of information and as a member of the Advisory Board. As I said in my introductory disclaimer -- SCIPP has done and continues to do great things!

Drought Update

Luigi Romolo,
Southern Regional Climate Center

Drought conditions across the Southern Region did not change much in the Southern Region from the month of May. As of July 5, 2016, Arkansas and Texas remain drought-free. There is some new moderate (D1) drought in central Oklahoma, and conditions have deteriorated in Mississippi, which is now showing a fair amount of moderate and some severe (D2) drought in the central counties. In Tennessee, drought conditions have improved in the north-central counties, however, conditions have gotten a bit worse in the southern counties of middle Tennessee. An area of severe (D2) drought now covers the south central counties of the state.

Texas farms ranged from the over watering issues from floods to over heating throughout the month bringing them hardships with their crops. During the flooding many farmers could no longer reach their crops with their equipment due to it being too dangerous, limiting harvesting, spraying pesticides, and performing other maintenance, resulting in an overall harvest delay; harvesting was already six percent behind schedule at the beginning of the month. Some areas in East Texas received a break and had a dry spell where they were able to make hay bails before the next round of storms could roll into their area. (Information provided by the Texas Office of State Climatology).



Released Thursday, July 7, 2016
David Miskus, NOAA/NWS/NCEP/CPC

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	80.65	19.35	7.86	1.82	0.05	0.00
Last Week <i>6/28/2016</i>	82.82	17.18	6.23	0.45	0.01	0.00
3 Months Ago <i>4/5/2016</i>	76.06	23.94	6.16	0.00	0.00	0.00
Start of Calendar Year <i>12/29/2015</i>	97.72	2.28	0.00	0.00	0.00	0.00
Start of Water Year <i>9/29/2015</i>	36.88	63.12	37.43	18.31	5.72	0.00
One Year Ago <i>7/7/2015</i>	95.83	4.17	0.13	0.00	0.00	0.00



Intensity:

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

Above: Drought conditions in the Southern Region. Map is valid for July 5, 2016. Image is courtesy of National Drought Mitigation Center.

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

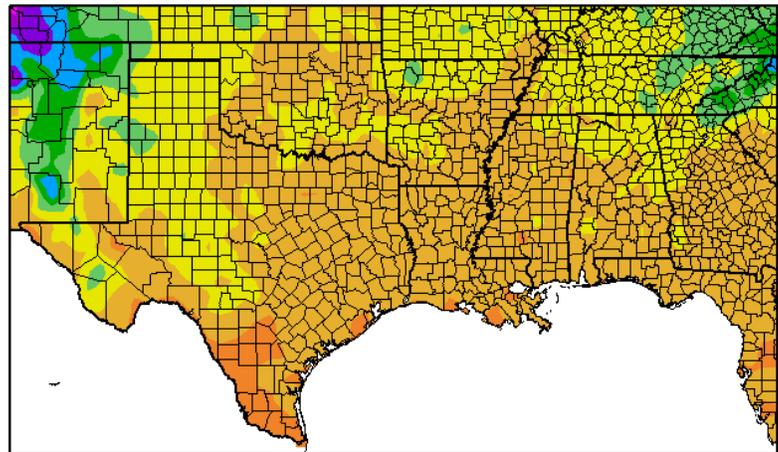
Southern Climate Monitor

Temperature Summary

Luigi Romolo,
Southern Regional Climate Center

With the exception of southwestern Texas, the Southern Region experienced a warmer than normal June. Temperature anomalies were quite consistent throughout the region, with most stations averaging 2-4 degrees F (1.11-2.22 degrees C) above their monthly expected values. The statewide monthly average temperatures were as follows: Arkansas reporting 78.90 degrees F (26.06 degrees C), Louisiana reporting 80.70 degrees F (27.06 degrees C), Mississippi reporting 80.40 degrees F (26.89 degrees C), Oklahoma reporting 79.20 degrees F (26.22 degrees C), Tennessee reporting 76.50 degrees F (24.72 degrees C), and Texas reporting 80.10 degrees F (26.72 degrees C). The state-wide temperature rankings for May are as follows: Arkansas (fifteenth warmest), Louisiana (thirty-first warmest), Mississippi (eighteenth warmest), Oklahoma (twenty-first warmest), Tennessee (eleventh warmest), and Texas (fifty-first warmest). All state rankings are based on the period spanning 1895-2016.

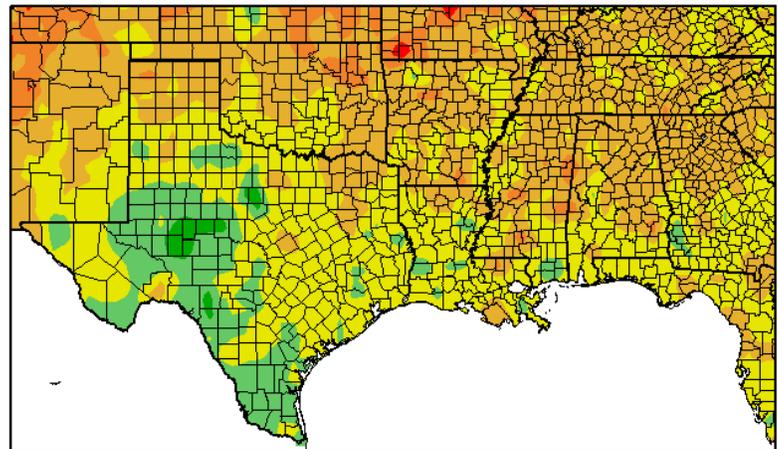
Temperature (F)
6/1/2016 - 6/30/2016



Generated 7/5/2016 at HPRCC using provisional data. Regional Climate Centers

Average June 2016 Temperature across the South

Departure from Normal Temperature (F)
6/1/2016 - 6/30/2016



Generated 7/5/2016 at HPRCC using provisional data. Regional Climate Centers

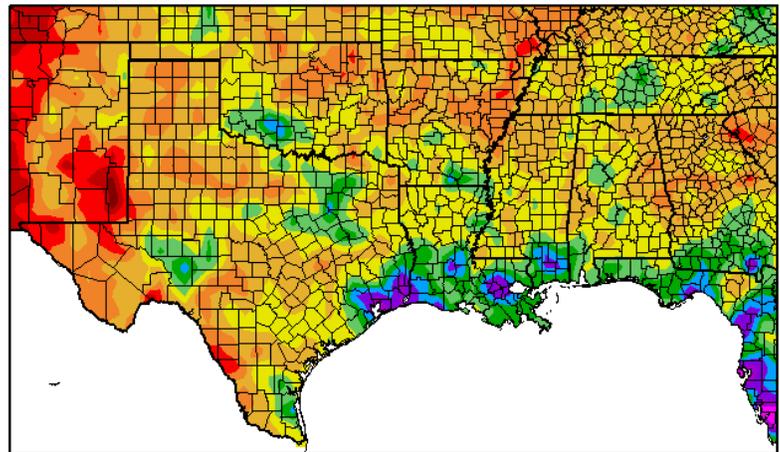
Average Temperature Departures from 1971-2000 for June 2016 across the South

Precipitation Summary

Luigi Romolo,
Southern Regional Climate Center

As expected during the month of June, precipitation in the Southern Region was predominantly controlled by convective activity. This ultimately resulted in a very scattered pattern of precipitation, with islands of both negative and positive precipitation anomalies. In general, precipitation in the Southern Region averaged below normal. Conditions were quite dry in western Arkansas and eastern Oklahoma, with stations reporting less than twenty-five percent of normal. Conversely, conditions were quite wet in west central Texas, with stations reporting over one hundred and fifty percent of the monthly normal. The state-wide precipitation totals for the month are as follows: Arkansas reporting 2.99 inches (75.95 mm), Louisiana reporting 6.33 inches (160.78 mm), Mississippi reporting 4.16 inches (105.66 mm), Oklahoma reporting 3.14 inches (79.76 mm), Tennessee reporting 3.75 inches (95.25 mm), and Texas reporting 3.42 inches (86.87 mm). The state precipitation rankings for the month are as follows: Arkansas (thirty-eighth driest), Louisiana (thirtieth wettest), Mississippi (fifty-sixth wettest), Oklahoma (forty-seventh driest), Tennessee (fifty-third driest), and Texas (thirty-eighth wettest). All state rankings are based on the period spanning 1895-2016.

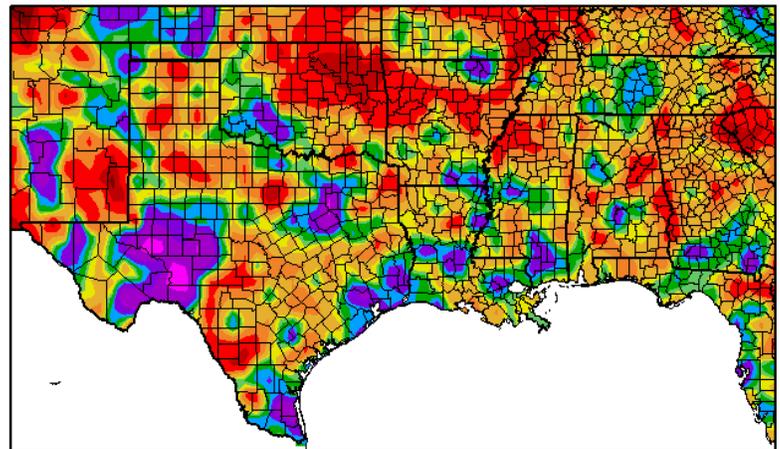
Precipitation (in)
6/1/2016 - 6/30/2016



Generated 7/5/2016 at HPRCC using provisional data. Regional Climate Centers

June 2016 Total Precipitation across the South

Percent of Normal Precipitation (%)
6/1/2016 - 6/30/2016

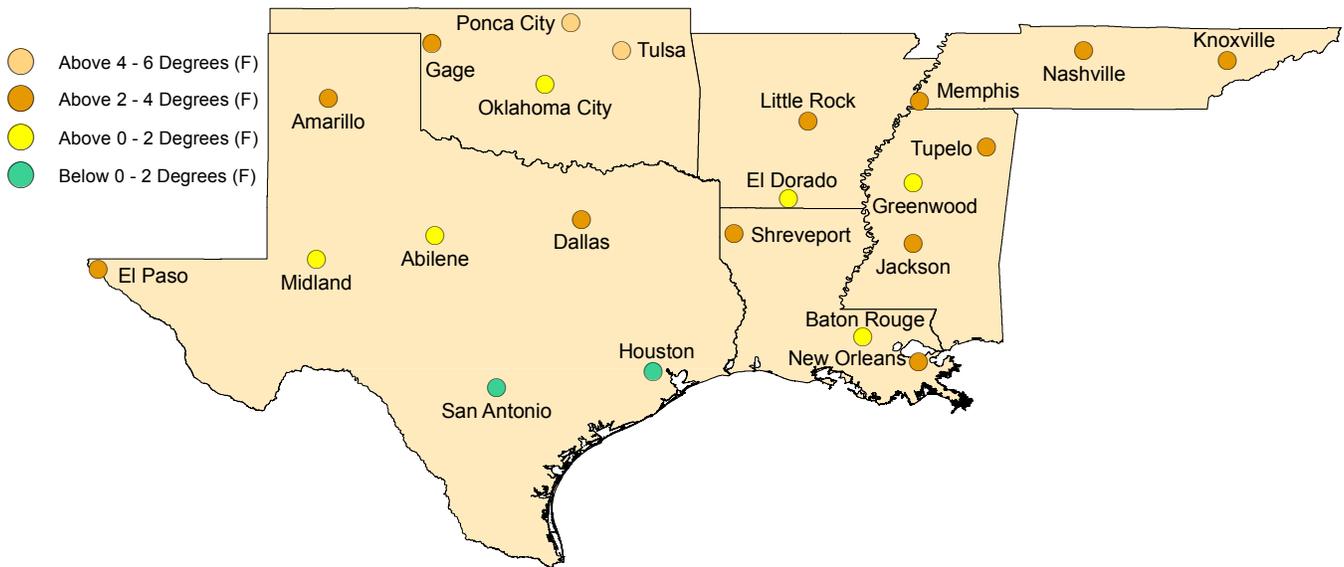


Generated 7/5/2016 at HPRCC using provisional data. Regional Climate Centers

Percent of 1971-2000 normal precipitation totals for June 2016 across the South

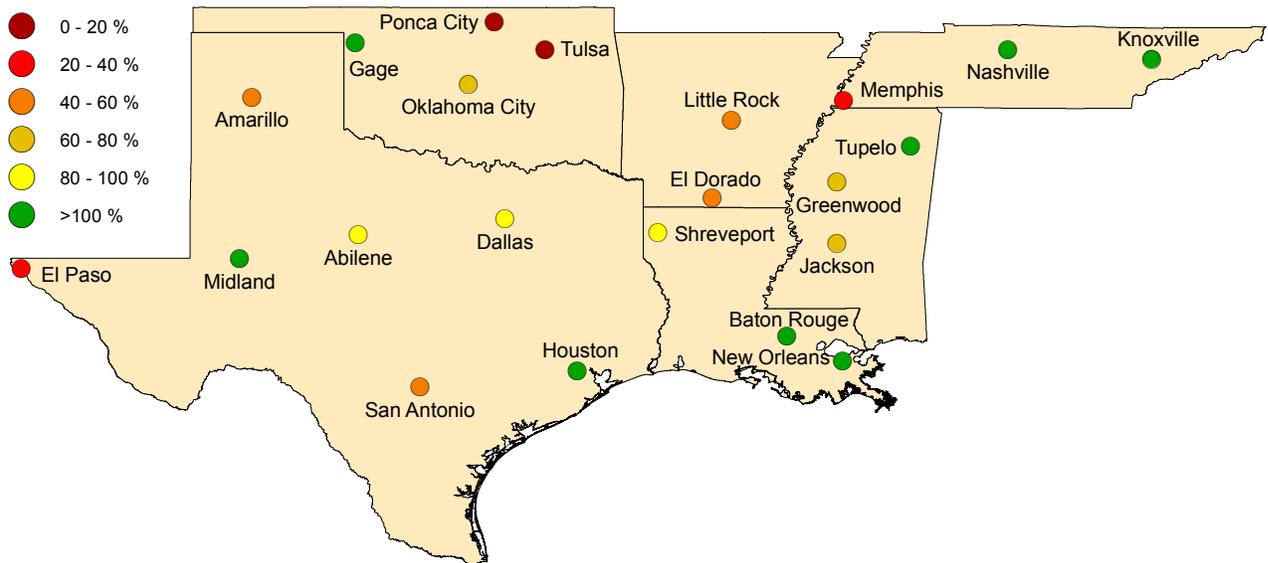
Regional Climate Perspective in Pictures

June Temperature Departure from Normal



June 2016 Temperature Departure from Normal from 1971-2000 for SCIPP Regional Cities

June Percent of Normal Precipitation



June 2016 Percent of 1971-2000 Normal Precipitation Totals for SCIPP Regional Cities

Climate Perspective

State	Temperature	Rank (1895-2011)	Precipitation	Rank (1895-2011)
Arkansas	78.90	15 th Warmest	2.99	38 th Driest
Louisiana	80.70	31 st Warmest	6.33	30 th Wettest
Mississippi	80.40	18 th Warmest	4.16	56 th Wettest
Oklahoma	79.20	21 st Warmest	3.14	47 th Driest
Tennessee	76.50	11 th Warmest	3.75	53 rd Driest
Texas	80.10	51 st Warmest	3.42	38 th Wettest

State temperature and precipitation values and rankings for June 2016. 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 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	90.3	69.9	80.1	1.9	95	06/26	60	06/07	2.92	-1.98	60
Little Rock, AR	91.9	73.4	82.7	3.6	98	06/26+	65	06/06	1.83	-1.82	50
Baton Rouge, LA	91.1	73.0	82.0	0.9	98	06/26	69	06/08+	7.34	0.93	115
New Orleans, LA	92.0	76.4	84.2	2.7	100	06/26	72	06/18	9.78	1.72	121
Shreveport, LA	91.4	73.4	82.4	2.6	97	06/27	67	06/08+	4.44	-0.96	82
Greenwood, MS	91.0	70.0	80.5	1.8	96	06/26	61	06/07	3.37	-0.94	78
Jackson, MS	92.2	71.6	81.9	2.9	99	06/27	64	06/10+	3.03	-1.09	74
Tupelo, MS	91.7	69.9	80.8	2.7	98	06/26+	60	06/08	6.06	1.54	134
Gage, OK	90.9	65.7	78.3	3.2	98	06/22	50	06/05	4.09	0.59	117
Oklahoma City, OK	90.2	68.2	79.2	1.2	97	06/17	57	06/06	3.30	-1.63	67
Ponca City, OK	92.5	69.9	81.2	4.6	101	06/22	55	06/06+	0.77	-4.29	15
Tulsa, OK	92.5	72.6	82.5	4.9	99	06/15	59	06/06	0.77	-3.95	16
Knoxville, TN	88.8	67.2	78.0	3.0	95	06/23	56	06/09	4.43	0.62	116
Memphis, TN	92.8	73.6	83.2	3.6	98	06/26+	66	06/06	1.17	-2.46	32
Nashville, TN	90.8	67.9	79.3	3.6	98	06/16	56	06/09+	4.45	0.31	107
Abilene, TX	90.1	69.6	79.9	0.4	97	06/18+	59	06/06	3.13	-0.43	88
Amarillo, TX	91.3	63.3	77.3	2.9	103	06/17	51	06/05	1.38	-1.78	44
El Paso, TX	97.9	71.1	84.5	2.8	108	06/18	55	06/02	0.33	-0.61	35
Dallas, TX	93.4	74.5	84.0	2.6	99	06/27	66	06/06	3.60	-0.25	94
Houston, TX	90.9	73.4	82.1	-0.3	97	06/28+	67	06/02	13.12	7.19	221
Midland, TX	93.4	68.7	81.0	0.7	103	06/18	61	06/01	3.16	1.36	176
San Antonio, TX	91.1	72.9	82.0	-0.4	96	06/28	64	06/06	2.39	-1.75	58

Summary of temperature and precipitation information from around the region for June 2016. 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.

2016 Hurricane Season Begins on a Tear

Barry Keim, Louisiana State Climatologist, Louisiana State University

Forecasts for the 2016 hurricane season are mostly calling for a near-normal season. However, the season is “out of the gates” with a vengeance. So far, we’ve already had 4 named storms in the Atlantic Basin (including the Gulf) this season, and this has happened with record-breaking expediency. Examining storms and their time of occurrence back to 1851, I assessed just how early our storms in sequence have been this year (Table 1). Our first storm this season was Hurricane Alex, which formed all the way back on January 13th (Figure 1). This was the earliest first storm of any hurricane season in our database. Our second named storm was Tropical Storm Bonnie, which formed May 27th. This was the third earliest second storm of any season. Tropical Storm Colin formed on June 5th – the earliest on record for any third storm of any season. Our fourth named storm was Tropical Storm Danielle which formed on June 19th, which was also the earliest fourth named storm in our database. The bottom line is that the 2016 hurricane season is off to an early start, but I certainly don’t see it continuing down this insanely unusual path that it’s currently on. Remember that our hurricane season forecasters from Colorado State University (CSU) and NOAA have both predicted near normal seasons, though CSU just upped its total number of predicted storms for this season from 14 to 15 in their most recent update in early July. Note that 12 named storms makes an average season.

This uptick by CSU is most assuredly related to the early start we’ve seen so far. As long as the storms remain far from Louisiana, it’s all alright with me! If you have any questions, feel free to contact me at keim@lsu.edu.

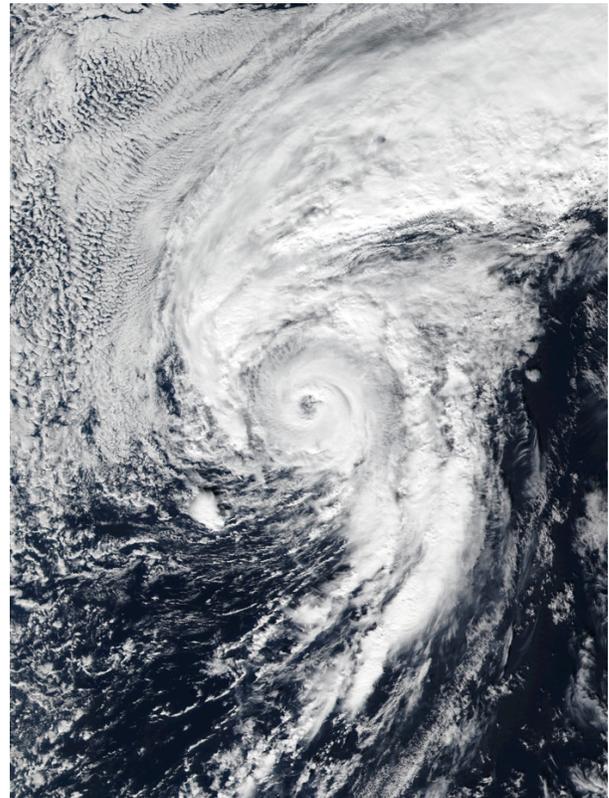


Figure 1. Hurricane Alek at Category 1 strength in the Atlantic Ocean on January 14, 2016. This image is from the NOAA satellite Suomi NPP and is in the public domain. It can be accessed at https://commons.wikimedia.org/wiki/File:Alex_2016-01-14_1435Z.jpg.

Table 1. Dates for the earliest occurrences of named storms in the Atlantic Basin from 1951-2015, along with the median date (from 1851-2005), as well as for the 2016 season.

Storm Order in Season	Earliest Storm Date 1851-2015	Median Date	This Season
1	Feb 2 (1952)	3-Jul	January 13 (H Alek)
2	May 17 (1887)	11-Aug	May 27 (TS Bonnie)
3	June 12 (1887)	25-Aug	June 5 (TS Colin)
4	June 23 (2012)	3-Sep	June 19 (TS Danielle)
5	July 23 (2005)	9-Sep	We'll see

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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](tel: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](tel:405-325-7809) or [225-578-8374](tel:225-578-8374).

Monthly Comic Relief



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