The Bayou Observer

September 18 2011

FALL 2011 EDITION

The NWS's Weather-Ready Nation Initiative

The NWS recently introduced the "Weather -Ready Nation" initiative. This initiative expands on the NWS mission (providing weather, water and climate data, forecasts and warnings for the protection of life and property and enhancement of the national economy) with the goal of creating a society that is prepared for and can respond to weather-dependent events.

For the last 140 years, the National Weather Service has played a key roll in protecting American lives through the timely provision of reliable weather, water, climate, and environmental information. Society's needs evolve over time and so do the NWS and its provided services. In a world where up-to-the-minute weather forecasts and information are available on countless websites and through various other service providers, the NWS is placing an increased emphasis on weather-dependent events that significantly affect people, their livelihoods, and the economy. This means going beyond the production of accurate forecasts and timely warnings— it means focusing on improved understanding and anticipation of the human and economic impacts of such events.

Such decision support services can vary in scope from providing short-term warnings for localized severe weather events to providing weather support before, during, and after events with longer-term responses and impacts such as hurricanes, large scale flooding, or hazardous material responses.

The overall paradigm of impact-based decision support services is not new to the NWS. During the Deepwater Horizon Oil Spill response, NWS forecasters were inserted directly into the incident command center in Houma, LA. Those forecasters briefed the unified command and made sure that responders had the

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New Climate Normals Unveiled

On July first, the NOAA's National Climatic Data Center released the new climatic normals for the 1981 through 2010 period. The climate normals are updated every 10 years and are 30-year averages of data from thousands of weather stations nationwide. Every ten years when the normals are updated, the oldest decade is removed from the averages and the newest decade is added—meaning this year's update drops the 1970s and adds the 2000s.

Since the 1970s were an abnormally cool decade and the 2001-2010 period was abnormally warm, the net result is an upward adjustment to the 30-year average temperatures.

The adjustment is much more noticeable during the winter months than during the summer months. Normal January minimum temperatures were adjusted upward by as much as three to three and a half degrees, while normal

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Fall Climatology and Outlook

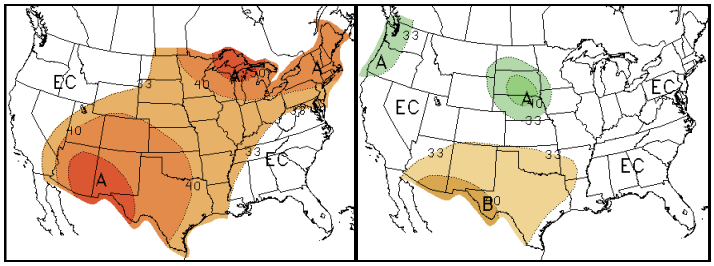
Across the northern Gulf Coast region, fall weather can vary widely with late season warm spells or early season cold fronts. While fall is typically the most pleasant time of year along the northern Gulf Coast, active weather is also possible as cold fronts (sometimes accompoanied by squall lines and severe weather) become more frequent. As fall progresses, shower and thunderstorm activity becomes more limited to frontal passages and less associated with summer-like sea breeze convection.

September			
	High	Low	Precip
Norm	86-88	66-71	4.8-6.2
Record	90-93	60-65	20-25

October			
	High	Low	Precip
Norm	77-80	55-60	2.9-3.8
Record	82-86	45-52	9-14

November			
	High	Low	Precip
Norm	69-72	48-52	4.8-5.1
Record	75-77	35-40	13-18

Average temperatures and precipitation for the fall months can be found in the tables at left. Temperatures are given in the four to five degree range that best captures the values for the entire area (using New Orleans, Baton Rouge, McComb, and Gulfport as the basis). Similarly, the record rainfall is represented as the 5 inch range that best captures the record values. The actual normal and record values may be slightly outside of these ranges.



Left: Temperature Probabilities for September, October, and November
Right: Precipitation probabilities for September, October, and November

The Climate Prediction Center is expecting weak La Niña conditions to persist or strengthen through the fall months.

Locally, the Climate Prediction Center is forecasting equal chances of both above normal or below normal temperatures and precipitation. However, just to the west of the local area, they are forecasting above normal temperatures and below normal precipitation. (See the graphics above for a graphical representation of the CPC forecast.)

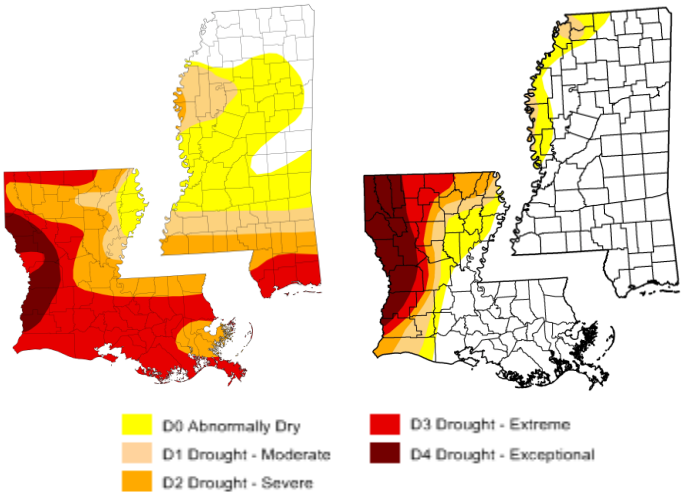
Drought Conditions and Forecast

Over the past three months, drought conditions have disappeared across the local forecast area. Relief began with several weeks of wet conditions from the end of July through early August. During this time, several areas recorded 8 to 10 inches of soaking rains. Drought relief was also aided by soaking rains from Tropical Storm Lee during the first week of September. Rain bands from Tropical Storm Lee dumped heavy rain across the entire area—with average storm total rainfall in the 9 to 12 inch range. A few areas saw as much as 15 inches of rain over the 4 day period.

During the fall of 2011, the Climate Prediction Center does not expect drought conditions to redevelop across the area.

Drought Monitor Graphics

Issued 6/2/11 Issued 9/8/11



The NWS's Weather-Ready Nation Initiative, cont.

most up to date weather information. NWS forecasts served as the go-no-go decision making tool for much of the response. Marine forecasts such as wave heights determined whether or not dispersants could be used. Information in our heat advisories and heat warnings determined when and how often responders were required to take breaks. Severe thunderstorm warnings were communicated directly to the forward operating branches to ensure that responders could seek safe shelter ahead of approaching storms. Following the peak of the response efforts, the U.S. Coast Guard Incident Commander said, "It is an absolute honor to have the National Weather Service in this situation. Everyone on the command staff has been blown away by [their] attention to detail, accuracy, and briefing abilities." For more information about the local NWS response to the Deepwater Horizon oil spill, please read last year's Special Deepwater Horizon Oil Spill Edition of the Bayou Observer.

NWS forecaster Tim Erickson works on a briefing presentation at the incident command center in Houma, LA during the Deepwater horizon oil spill response.

NWS meteorologist Shawn O'Neil looks at satellite and radar data for tropical depression six as it nears the Deepwater Horizon oil spill area. The response was halted due to NWS forecasts indicating strong winds and rough seas as the depression moved through the area.

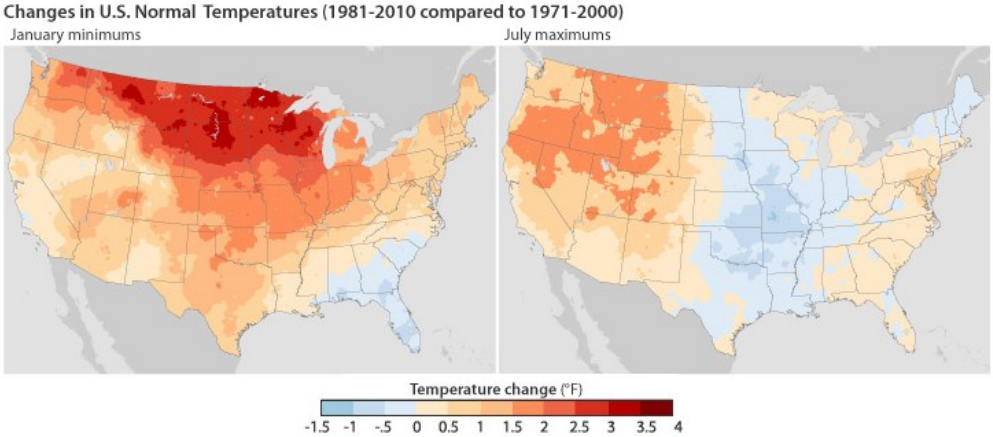
The Weather-Ready Nation initiative seeks to build upon our established decision support services in order to better understand societal impacts, make our information more relevant to decision makers, and participate directly in decision making for those decisions fundamental to the role of government.

The Weather-Ready Nation initiative sets out to accomplish the following goals:

- Improve weather decision services for events that threaten lives and livelihoods
- Deliver a broad suite of improved water forecasting services to support management of the nation's water supply
- Enhance climate services to help communities, businesses, and governments understand and adapt to climate-related risks
- Improve sector-relevant information in support of economic productivity
- Enable integrated environmental forecast services supporting healthy communities and ecosystems
- Sustain a highly-skilled, professional workforce equipped with the training, tools, and infrastructure to meet our mission

The complexity of our society and the increasing scientific and environmental sophistication of our users will require the NWS to become one of the most adept institutions in the world at working with others in order to accomplish these goals. We recognize that our expertise lies in weather, water, and climate, and we do not seek to become experts in other sectors or disciplines. Rather, we aim to help other sectors prepare for and adapt to weather and climate so that they may be more effective in the administration and delivery of their own services. In that regard, this initiative will require that the NWS seek to improve and build upon partnerships with other organizations, with other sectors, and with other disciplines. For more information about the Weather-Ready Nation initiative, visit the NWS strategic plan website.

New Climate Normals Unveiled, cont.



July maximum temperatures were adjusted upward by only one and a half to two degrees across the western half of the country. Across the Mississippi River valley, normal July temperatures were actually adjusted downward by up to one degree. (See graphic above for nation-wide depiction.)

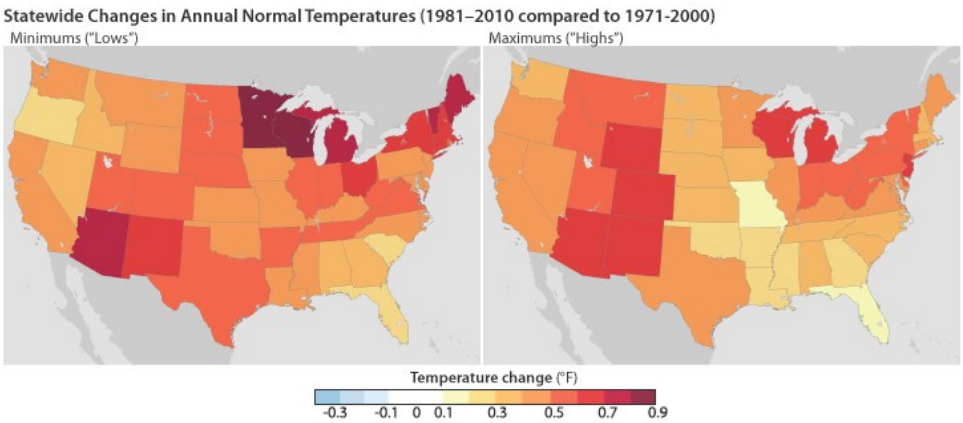
Part of the reason the winter temperature adjustments in the graphics above are more noticeable than the summer temperature adjustments is that as a whole, average daily minimum temperatures were impacted more so than average daily maximum temperatures. When maximum and minimum temperatures were averaged across the entire year, every state saw warmer temperatures overall, with the daily minimums increasing more than the daily maximums. (See graphic at right for nation-wide depiction.)

The climate normals are calculated for several variables that are listed in the table above. The observations used to calculate the normals are taken from the National Weather Service's extensive network (numbering in the thousands) of cooperative observations. Also included are a smaller number (in the hundreds) of stations that are maintained by the NWS or the Federal Aviation Administration.

What variables are included in the new normals?	
Daily Maximum Temperature	Monthly Maximum Temperature
Daily Minimum Temperature	Monthly Minimum Temperature
Daily Precipitation	Monthly Precipitation
Year-to-Date Precipitation	Heating Degree Days
Growing Degree Days	Cooling Degree Days
Wind Speed	Freeze Date Probabilities
Snowfall	Snow Depth
Dew Point	Sea Level Air Pressure

Every station does not collect the same combination of data. About 8,000 stations collect rainfall data, but only around 6,000 stations collect temperature data. The methods by which the data are collected also vary by station—some are automated, while others are collected manually by volunteers each day. As each decade comes to a close, all of the data is assembled and the new normals are calculated by NOAA's National Climatic Data Center.

The methods used to calculate the climate normals were established in the 1930s by the World Meteorological Organization. These same methods are still used today. Due to the consistency used in the calculation of the climate normals, this data set provides a long-term data record that can be used for studying natural climate patterns and climate change. For more information concerning the climate normals, visit the NCDC website.



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Tropical Storm Lee Summary and Impacts

The disturbance that eventually became Tropical Storm Lee developed over the northern Gulf of Mexico during the last week of August. It was first classified as a tropical depression the evening of September first. when it was about 225 miles southwest of the mouth of the Mississippi River. By the early afternoon on September second, the depression had strengthened and was named Lee.

Lee moved very slowly, meandering near the coast until it finally made landfall during the early morning hours of September 4. Due to its slow movement, rain bands from Tropical Storm Lee drenched portions of southeast Louisiana and southern Mississippi for several days. Storm total rainfall of 8 to 12 inches was common across much of the area, with isolated locations receiving up to 15 inches of rain. The heaviest rain fell on September third and fourth as heavy rain bands resulted in "training" over some areas.

Satellite imagery of Tropical Storm Lee on the morning of September 3. The clearing on the southwest side of the storm is a result of dry air intrusion which prevented thunderstorms from forming.

The heavy rainfall associated with Tropical Storm Lee resulted in river rises across much of the Gulf south and many rivers rose to near or above their flood stages. Locally, minor to moderate flooding occurred at nearly two dozen river forecast points. Most of the forecast points that experienced flooding were located across the north shore area of southeast Louisiana along with some of the rivers in coastal Mississippi that drain into the Gulf of Mexico.

Composite radar imagery from Saturday September 3 depicting heavy rainfall moving across southeast Louisiana and southern Mississippi.

In addition to the heavy rain, rivers near the Mississippi Gulf coast and near the shores of Lake Pontchartrain were impacted by the effects of storm surge as well. For example, storm surge from Lee moved up the Amite River at least as far inland as Port Vincent.

Flooding in Myrtle Grove due to Tropical Storm Lee.

In many areas, storm tides were higher than would typically be expected from a tropical storm. Storm tide associated with Tropical Storm Lee generally ranged from 3 to 5 feet. A few higher observations were recorded, with the highest measurement occurring at Seabrook Bridge in Orleans Parish. The maximum storm tide there was measured at 6.25 ft.

It should be noted that storm tide is the total tide height and is a combination of the astronomical tide and the storm surge. Thus, the maximum storm surge is lower than the maximum storm tide. During Tropical Storm Lee, the storm surge contribution to the storm tide reached 4 ft or slightly higher in many locations.

The abnormally high storm tides associated with Tropical Storm Lee were attributable to:

- A long duration (several days) of tropical storm force winds over the coastal waters resulting in a build up of water in coastal areas
- The large area over which the tropical storm force winds extended (up to 250 miles away from the center)
- A high astronomical tide range (spring tide)

For more information about Tropical Storm Lee and its impacts on Southeast Louisiana and Southern and Coastal Mississippi, please see the WFO LIX post storm report.

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National Weather Service New Orleans/Baton Rouge…
Where Science Impacts Decisions and Decisions Save Lives

LIX in the Community

During the last week of June, WFO New Orleans/Baton Rouge hosted two different groups of 30 campers for an office tour and presentation. The campers were brought to the office by Louisiana State Police Troop L (which serves areas north of Lake Pontchartrain) and Troop B (which serves areas south of Lake Pontchartrain including New Orleans) as part of their annual day camp program for at-risk children. Ranging in age from 8 to 14 years old, the children toured both the New Orleans/Baton Rouge weather forecast office as well as the Lower Mississippi River Forecast Center. During the tour, the children learned about the tools meteorologists use to observe and forecast the weather, and also sat in on a presentation about weather safety.

Both groups ended their visit with special weather balloon launches – with one child from each group being chosen to help launch the balloon. The balloon launch was especially touching for one young girl who was part of the Troop L group. She and her father had been camping in the Jeff Busby Campground in Mississippi during the April 26/27 severe weather outbreak. Tragically, her father was killed while shielding her from a falling tree. Following the balloon launch, camp counselors told NWS employees that the smile on her face was one of the first they had seen since camp started. The pictures at right are from the Troop L campers visit.

Contact Information

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A Note From the Editor...

The fall months can be characterized by some of the most tranquil and pleasant weather, but as cold fronts become more frequent, severe weather will also become a threat. In order to help ensure your family's safety, have a severe weather plan and know when to use it. Consider buying and using a NOAA weather radio so that you will be alerted when severe weather warnings are issued for your area—even if you are sleeping. Severe weather is not a common phenomenon across the northern Gulf Coast region, but it does happen, and it does pose a threat to life and property. Plan ahead now so that you and your family will be prepared if and when severe weather strikes!

Danielle Manning
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