



THE MID-SOUTH CHRONICLE

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DROUGHT and HEAT:

The Weather Story of the Summer of 2007

By: Kevin Terry and Krissy Scotten

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The drought of 2007 was one of the most devastating in recent memory in the Mid-South. Following a record late spring freeze, farmers were already facing severe crop stress and loss of yields. Though the worst of the drought affected Alabama and Georgia, the Mid-South was still significantly impacted by the lack of rainfall during the summer. Some locations across West Tennessee and Northeast Mississippi saw rainfall deficits reach as high as 15 to 20 inches during the period, already adding to the rainfall deficits the Mid-South has been facing since late 2005.

In addition to farming impacts, many lakes, rivers, and streams saw their levels fall to near historic lows, and several towns and cities placed water use restrictions on residents. Due to the historic drought, the state of Tennessee was declared a disaster area.

The other major story of the summer, which also helped exacerbate the drought conditions, was a major and deadly heat wave during the month of August. During that time, temperatures at all major observing stations in the Mid-South exceeded the century mark for several days. The result was the warmest August on record at all of these sites, and among the warmest of any month ever recorded previously.

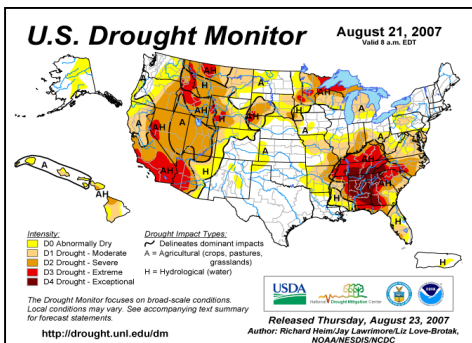
HIGHEST TEMPERATURES THIS SUMMER

Memphis:	AUGUST 15th	106
Jonesboro:	AUGUST 16th	105
Jackson:	AUGUST 15th, 16th	106*
Tupelo:	AUGUST 15TH	107

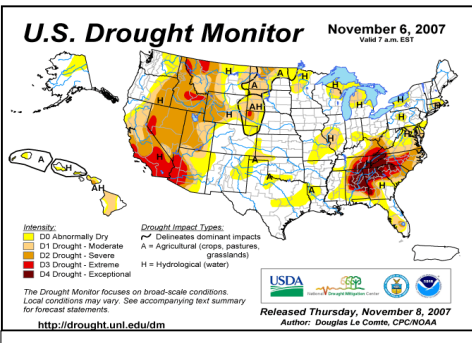
*All time record high temperature for August

The main factor in the excessive heat was a persistent and extremely strong ridge of high pressure which was centered over the region for most of the month. This High Pressure suppressed the formation of clouds and precipitation, allowing for ample sunshine during the daylight hours. The drought and the resulting parched soil conditions also allowed the ground to heat up more effectively and at a faster rate, helping to contribute to the numerous 100-degree days.

Fortunately, during the last two months, the high pressure ridge has broken down, allowing several storm systems to bring much needed rainfall and cooler temperatures to the region, and ending most of the serious drought conditions. Nevertheless, this drought and heat wave have already made their place in the record books, and will be long remembered by residents of the region.



Drought at its peak across the Mid-South.



Latest Drought Monitor issued in November.

We're on the web!
www.srh.noaa.gov/meg

Special Point of Interest:

* Winter Solstice is December 22nd at 1208 CST.

A Few Changes in Staff at NWS Memphis

By: Krissy Scotten



Dan Valle (right) was promoted to a Lead Forecaster position in Pocatello, Idaho this past summer. Valle is pictured above with Meteorologist-in-Charge, Jim Belles.



Thomas Salem Jr. was selected as NWS Memphis's new Science and Operations Officer (SOO) in June. He comes to us from NWS Glasgow where he was also the SOO.



Todd Beal was selected as the new Intern at NWS Memphis this Spring. After defending his thesis for his Master's Degree, he completed his SCEP and was placed in the Intern slot.

NWS Winter Products

Winter Storm Watch and Winter Storm Warning

- **Blizzard**
 1. Sustained wind or frequent gusts to 35 mph or greater; and
 2. Considerable falling and/or blowing snow (i.e. reducing visibility frequently to less than 1/4 mile for 3 or more hours).
- **Heavy snow ONLY**
 1. For Randolph, Lawrence, Greene, Clay counties in Arkansas; the Missouri Bootheel; and Lake, Dyer, Obion, Gibson, Weakley, Henry and Carroll counties in Tennessee:
 - a. Accumulations of 4 inches or more in 12 hours; or
 - b. Accumulations of 6 inches or more in 24 hours.
 2. For elsewhere:
 - a. Accumulations of 3 inches or more in 12 hours; or
 - b. Accumulations of 4 inches or more in 24 hours.
 3. Criteria for northern counties may be lowered to that of southern counties if equal amounts are forecast in both groups and warning criteria is expected to be met.
- **Ice ONLY**
Accumulations of one-quarter of an inch or greater.
- **Sleet ONLY:**
Accumulations of one-half of an inch or greater.
- **Combination of Snow, Sleet, or Ice**
Two inches of snow with any accumulations of sleet and/or ice.

Winter Weather Advisory

- **Snow**
Accumulations of more than 1 inch, but less than warning criteria.
- **Ice/Sleet**
Any accumulations that are less than warning criteria.

Are You Ready For An Ice Storm?

By: Jim Belles

Snap! Crackle! Pop! No, I'm not talking about the sounds of a popular breakfast cereal; rather, it's the eerie sound of the outdoors after a major ice storm.

An ice storm is a potentially crippling weather event that can leave people without power or communications for up to two weeks. The weight of ice that accumulates on trees, power lines, and other objects can cause them to snap and fall. That's why after a significant ice accumulation, get ready for the loud noises as tree limbs crash to the ground.

Thankfully, major ice storms are rare. One significant event that affected large portions of the Mid-South was in February 1994, when several inches of ice accumulated. Major power and communication disruption occurred and many trees were destroyed. Another major ice storm occurred over much of Arkansas during Christmas

2000.

The reason significant ice accumulation is so rare is that very special conditions need to be in place. Freezing temperatures need to occur on the ground, while precipitation falls through a substantial layer of air that is above freezing. As the rain falls and hits objects on the ground, it freezes on contact. Heavy rainfall results in significant ice accumulation.

How do you prepare for an ice storm? Well, your primary concerns are loss of heat, power and communication service, and a shortage of supplies if the storm conditions continue for more than a day. To mitigate those concerns, have available: flashlights and extra batteries, extra food and

water, extra medicine, baby items, and first aid supplies. Remember, fuel carriers may not reach you for days, so if you use heating fuel make sure you are not close to empty. Also, if power goes out make sure alternate heating sources like fireplaces, wood stoves, and space heaters are used properly to prevent fire and make sure they are properly ventilated.



Picture of the National Weather Service Office in Memphis during a winter weather event.

National Weather Service Honors Madison County as StormReady

By: Jim Belles

The Memphis National Weather Service Office honored Madison County, Tennessee as StormReady in a June 1, 2007 ceremony. The county mayor, state and county emergency management officials, local media, and a Salvation Army official attended the ceremony.

Madison County has been hit by two F4 damage tornadoes during the past eight years. On January 17, 1999, an F3 damage tornado caused severe damage to the regional airport. An F4 damage tornado moved through southern portions of the city of Jackson (county seat and population of 110,000) and the town of Bennis. This tornado killed 6 people, injured 106 other people, and damaged 238 homes.

On May 4, 2003, an F4 damage tornado moved into downtown Jackson. This tornado killed 11 people, injured 66 other people, and destroyed hundreds of buildings and homes. NWS Memphis lost contact for hours with emergency management officials in Jackson.

The county mayor recalled the grim time in the days after the May 4, 2003 tornado. He spoke about the removal of two children's bodies from a local lake. He

thanked the National Weather Service for the StormReady recognition and praised his local emergency managers for their hard work in earning this distinction.



NWS Memphis MIC Jim Belles (left) presents StormReady recognition letter to Madison County Mayor Jerry Gist.

Hot Topic – Fire Weather in the Mid-South



Fire! Fire! Ranging from a single match to a massive inferno encompassing thousands of acres of forest, fire is definitely a phenomenon to be reckoned with. Weather plays a huge role on how that scorching, intense ball of flames ignites, spreads, and behaves. Humidity, wind, and precipitation are the main weather factors that affect fires. The most active fire weather seasons across the Mid-South occur during the late winter/early spring between mid February and early April, and also during the fall months of October and November. During these times of year, controlled burning by state and federal agencies are at a maximum as vegetation gets cleared before the spring “green-up” and before the dead of winter.

The National Weather Service has an obligation to state and federal agencies to provide warnings and detailed weather forecasts for fire fighting, control, and prevention. The following fire weather products are issued by the National Weather Service in Memphis.

- **Red Flag Warnings (RFW)**
- **Fire Weather Planning Forecasts (FWF)**
- **Point Fire Weather Matrices (PFW)**
- **Spot Weather Forecasts (FWS)**
- **Fire Weather Notification Messages (FWN)**

Red Flag Warnings (RFW) are issued when weather conditions (relative humidity values around or below 25% and winds above 15 mph) and dry vegetation are ideal for fire ignition and propagation. When these warnings are issued, any outdoor burning is highly discouraged and not allowed in some areas.

“The most active fire weather seasons across the Mid-South occur during the late winter/early spring between mid February and early April and during the fall months of October and November.”

Fire Weather Planning Forecasts (FWF) are issued twice daily, at 6 AM and 330 PM, for a given area and contain critical fire weather information such as cloud cover, precipitation type/chance/duration, temperatures, relative humidity values, winds, mixing heights (heights above the ground where vertical mixing ends), ventilation indices (measures smoke dispersion), lower atmospheric severity indices (same as Haines index which measures fire growth potential), and atmospheric sta-

bility. These forecasts allow agencies to plan controlled burns, fight fires, and help counties decide whether or not to issue burn permits.

Point Fire Weather Matrices (PFW), like the fire weather planning forecasts, are issued twice daily and contain the elements listed above, but for a specific location such as the St. Francis National Forest in Marianna, Arkansas where controlled burns of forests are routinely done by federal officials during the most active fire weather season.

Spot Weather Forecasts (FWS) are issued by the request of a federal or state agency that is performing controlled burning of land or forests or fighting wildfires. These weather forecasts are specifically tailored to where the fire is located to ensure the most accurate weather forecast possible.

Fire Weather Notification Messages (FWN) are issued when high fire danger is anticipated because of low humidity and/or high winds, but not expected to reach Red Flag Warning criteria. These messages are also issued when critical fire information such as county burning bans and state burn restrictions are in effect.

For more information regarding fire weather, visit

www.srh.noaa.gov/meg/firewx.php

or email

Michael.Scotten@noaa.gov



NWS Memphis Participates in a Major Federal and State Disaster Exercise By: Rich Okulski

The National Weather Service provides time critical, life saving weather information to key decision makers during weather and non-weather related disasters. This June, the National Weather Service office in Memphis had the opportunity to support federal, state, and local emergency management and response agencies as they participated in a once in four year hazardous material spill and earthquake disaster exercise.

The United States Coast Guard and Environmental Protection Agency simulated several hazardous material (HAZMAT) spills in the Mississippi River related to a series of major

earthquakes along the New Madrid seismic zone. WCM Richard Okulski worked side by side with National Ocean Service employee Charlie Henry in support of these federal agencies. Charlie serves as a Regional Science Support Coordinator which is the equivalent of the National Weather Service's Incident Meteorologist.

Forecasters Andrew Sniezak and Jonathan Howell worked side by side with state and local emergency managers in Memphis and Jackson, Tennessee as these responders worked through earthquake rescue, response and relief activities. These activities

included simulated collapsed bridges, chemical fires, and escaped zoo animals.

These exercises allowed the Memphis office to test amateur radio and satellite phone communications with emergency responders as well as portable laptop software needed for "on site" weather support. We and our emergency management partners will integrate the lessons learned from this exercise into our office's emergency response plan should an actual major earthquake occur in the Mississippi River Valley in our lifetime.

Mid South Television Station Receives a Prestigious 2007 Mark Trail Award By: Rich Okulski



From Left to Right: VADM Lautenbacher (NOAA Administrator), Jack Dunningan (NOAA Chief Information Officer), Jack Elrod (creator of Mark Trail comic strip), Dave Brown (Chief Meteorologist, WMC-TV), Ramona Jackson (Kroger Inc., Memphis Area), Mary Glackin (Acting NWS Director).

The National Weather Service depends on key partners to disseminate and amplify time critical and life saving weather information. One of our primary means to disseminate this information is NOAA Weather Radio All Hazards. On June 21, 2007, NOAA recognized WMC-TV Channel 5 and the Kroger grocery store chain for the energetic and active campaign which sold around 12,500 NOAA Weather Radios in March 2007. Kroger and Channel 5 co-hosted "Programming Days" at several locations in the Mid-South, including the city of Dyersburg, TN. A long lived and strong (F3) tornado tracked through numerous towns within range of the Dyersburg NOAA Weather Radio transmitter on April 2, 2006. Twenty-four people died due to tornadoes in northwest Tennessee that evening. Additional NOAA Weather Radios in the Dyersburg area and elsewhere in the Mid-South will raise awareness and save lives during future severe weather outbreaks.



When you hear what the rainfall amount is from the official gage, have you ever said,

“That’s not what I got!”

Now, you can let the National Weather Service know how much rain, hail, or snow you measured in your backyard by joining the Community Collaborative Rain, Hail, and Snow Network - **CoCoRaHS**. This new program will help meteorologists and researchers study the variability of precipitation across the Volunteer State. The accumulated data will be available to anyone with a use or interest in precipitation data. Also, the USDA Farm Service Agency is partnering with **CoCoRaHS** to collect data from and for agricultural producers in Tennessee.

CoCoRaHS started in Ft. Collins, Colorado in 1998 after a devastating flood. Researchers went back to look at the precipitation data that led to the flood and found that the rainfall had missed all the official gages! The Colorado state climatologist, Nolan Doeskin, developed a new volunteer observing network to fill the gaps between official gages called **CoCoRaHS**. The network has spread across the country and was introduced into Tennessee April 1st of this year. Already, Tennesseans have stepped up and shown their volunteer spirit with over 225 registered observers in less than a month. That’s only a start; observers are needed in every county and every square mile.

Here in Tennessee we’ve been watching a significant drought. **CoCoRaHS** observations are helping to track the severity of the situation and could be used to justify relief for producers. The National Weather Service is also using the observations to verify severe weather warnings and to better track flood possibilities.

If you want to be a **CoCoRaHS** observer, all you need is a desire to participate. An official rain gage can be ordered through the website where you will enter you precipitation readings. The website also has information on how to set up your gage, measure the precipitation, and make your reports.

What's the Weather in Your Backyard?

By: Zwemer Ingram

Please visit the **CoCoRaHS** website at: www.cocorahs.org to learn more about the program and register your backyard as an official reporting site. Once you register and begin to report, your rainfall observations will become part of the record as well as being plotted on maps of your county and the state. You can view the maps and see how your observation fits in with your neighbors involved in **CoCoRaHS** across the country.

If you have any questions, you can get in touch with the **CoCoRaHS** coordinators through the website by clicking on Tennessee on the U.S. map and scrolling down past training opportunities to the state coordinators. Contact information is available for the coordinator for your area (find your county and click on the coordinator listed below it.) State and local coordinators are also listed under the State Coordinators link on the Tennessee homepage.



“CoCoRaHS – Because Every Drop Counts!”