

The Mesonet News

Volume 1, Issue 1

May 2007

Highlights:

- Calhoun City records highest air temperature so far in the Mesonet
- Data from Agricola and Union available
- Mesonet doubles in size by within one year
- Data management at JSU becomes reality
- Renewed basic funding at JSU through NCAS

Did you know?

- The hardware to build a mesonet station costs about \$17,000
- All public schools in the state of Mississippi have high-speed internet access
- The first observation logged by the Mississippi Mesonet was at Newton on April 1, 2004
- Startup funding for the Mesonet came through the NOAA Center for Atmospheric Science (NCAS)

Data Availability from New Stations

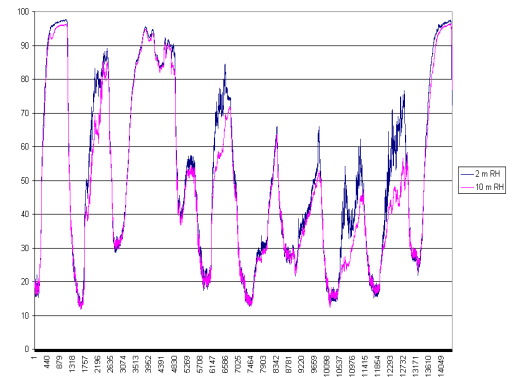
Data from the Agricola mesonet site in southern George County are now available, from both the LSU and JSU websites. However some unresolved problems have been noted in data from the soil sensors.

This was the first site to provide data independently of the "lsuagcenter" server at LSU, bringing us much closer to having a completely independent observing network that is maintained, managed, and held accountable in Mississippi. The station was purchased through a National Science Foundation (NSF) grant to Dr. Sytske Kimball at the University of South Alabama. It is operated with the cooperation of the George County School District.

Other new sites that have been installed include Union (in northern Newton County) and Lyman (just north of Gulfport). See page 3 for details.

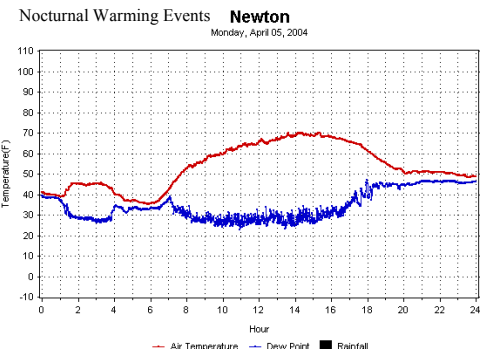
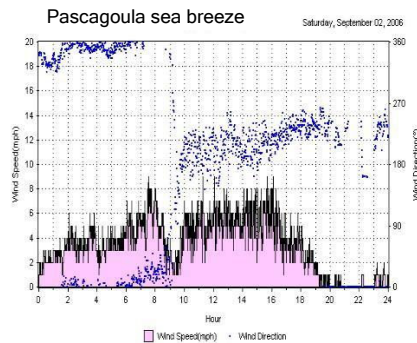
The LSU website may be accessed from

<http://www.lsuagcenter.com/weather>. The main page for the JSU mesonet website is at <http://jsumesonet.jsu.edu>.



Time series of relative humidity from Agricola at 2 m and 10 m from February 25 to March 8, 2007.

Data Samples



Development of New Sites

Back up in Newton County, Gary Galloway worked with us to put in a new site near Union (near the Newton-Neshoba County line). Most of the station was built out of components from his portable station, with the additional components being provided primarily by JSU. Partial installation using the portable mast system was made on August 3, and then the permanent mesonet station was put installed in November. After a long time of troubleshooting the communications and resolving some differences in use of a CR5000 datalogger, data finally became routinely available in March 2007.

Dr. Grady Dixon, at Mississippi

State University, used his grant money to purchase a new station recently. A site has been selected in Sturgis, and installation will take place in May.

On the Coast, at least two new stations have been funded under a grant from the NOAA Air Resources Lab to JSU that Dr. Yerramilli Anjaneyulu administers. We have worked with local partners in the Gulfport-Biloxi area to coordinate the siting of these stations. They will complement a study of atmospheric dispersion processes along the Mississippi Coast. Initial installation of the first station was done at Harrison Central High School in Lyman in December. Al-

though some data have been manually collected from the station, communications are not yet operational. The second station is planned for Ship Island, pending approval by the National Park Service.

A grant to East Mississippi Community College will be used to install two station in Kemper County. Recently, the University of South Alabama has finalized plans to install a new station near Leakesville. Local partners in Simpson, Rankin, and Hinds counties are also working with JSU to put in new mesonet stations. Finally there are NRCS partners who are interested in developing new sites in Webster and Yalobusha Counties.

Website Development at JSU

Although most data observed by the Newton, Calhoun City, and Pascagoula mesonet stations can be accessed through the LAIS website, it was recognized early on that our dependence on LSU could only be temporary if the Mississippi Mesonet were to grow. So JSU now has a server computer running Loggernet which has started archiving data from the five currently operating stations.

Initially the website was built around improving the availability of station metadata, including some for other networks within the state. Besides a wealth of metadata on each of the mesonet sites, there is also now a "Data" section that provides access to raw data files in Excel format and hourly synoptic contour/streamline maps in GIF format. Currently users have a choice of downloading raw data in Micro-

soft Excel format or viewing hourly contour and station model maps of Mississippi. JSU has purchased software to do user-requested time series plots similar to LAIS and will be installing this capability in the near future.

Parsing and conversion of the data files is not yet automated. The "most recent" file however should be automatically updated hourly.

Spotlight: Working with mesonet data files

The data files produced by Campbell's Loggernet software are comma-delimited ".dat" files. These can be manipulated within Excel if care is taken to specify that the data are comma-delimited. For most users it will be easier to use the daily and monthly files that are provided on the jsunesonet website in Excel ".csv" format.

In any case, it is important to be aware of exactly what quantity is in each column of the data file. There are some significant differences depending whether the one-minute, hourly, or daily data output are being used. Each of these corresponds to a different array of "Final Storage Locations" in Loggernet.

Files describing the columns for each array will be available within the station's Data page on the website. It is generally wise to check the maintenance notes as well to see if any datalogger program changes may have affected the arrangement of the data columns during the period of interest. Please ask if you have any questions.

Climatological Highlights from Summer 2006

On July 19, 2006, Calhoun City recorded the highest 2 m air temperature seen so far by the Mesonet: 104 F. The day before was 103 F. Some other very high temperatures at Newton a couple weeks before are unfortunately of questionable reliability due to an apparently too close encounter with a tractor, which tilted the 1.5 m and 2 m temperature sensors to horizontal.

Most of the state saw relatively hot and dry conditions during the last half of June and first half of July, with only 1.09 inches of rainfall during June and July combined at Calhoun City. Finally more moderate temperatures and much-needed moisture reached most of the state

in the last part of July. In contrast to the drought conditions at Calhoun City, Agricola received over 9 inches of rain in July.

Strong thunderstorm winds were seen at Newton during two events in May and June, with the peak wind reaching 55 miles per hour. Although some of the July storms brought severe winds over Jackson, conditions at the Mesonet sites were not so extreme.

Recently a JSU undergraduate student, Erica Richards, compiled several tables of monthly statistics for the Newton, Calhoun City, and Pascagoula stations. We will be completing these tables and putting the results on the website.



Presentations and Meetings

The Mesonet was highlighted in presentations and field trips during JSU's High School Weather Camp and the NCAS Numerical Modeling Workshop. A presentation was also made to researchers at the National Center for Atmospheric Research (NCAR) in Boulder, CO. Jason Holmes of the Univ. of South Alabama presented some mesonet data at the AMS Conference on Hurricanes in April 2006.

As in past years, JSU gave presentations at the annual meetings of the National Weather Association and American Meteorological Society. The Mesonet was a prominent ingredient in at least three of these presentations.

Although it has been a while since the Mesonet Steering Committee has met, some of us were able to see each other and meet with emer-

gency managers while at the MCDEMA meeting in Gulfport last summer.

Dr. White has also had meetings with Paul Rodrigue (director of the NRCS Plant Materials Lab), Maurice Nelson (East Mississippi Community College), and Santanu Banerjee (Tougaloo College) about planning future Mesonet sites.

Other News

In Kentucky, the state legislature passed a resolution that their state mesonet (recently funded by Congress) would be the official source of climatological data, even though they had not even installed their first station yet. Their congressional delegation has secured \$1.5 million per year for the effort.

A study by the people coordinating

NERON activities in Georgia found that only 17% of COOP sites meet the NERON standards.

Gov. Haley Barbour appointed Mike Womack as director of MEMA, upon the retirement of Robert Latham.

The Jackson NWS Weather Forecast Office lost their Science and Operations Officer (SOO), Jeffrey

Craven, who took a position in Milwaukee. The position has been filled by Greg Garrett. Greg has worked for several years at Jackson, except for a short stint in Memphis.

In one of the high-profile cases involving insurance of wind and water damage during Hurricane Katrina,

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About the Mississippi Mesonet: The Mississippi Mesonet is envisioned to be a statewide network of research grade automated weather stations providing real-time data at no cost for public information and various applications. Stations are planned to be spaced about 20 miles apart and to archive several meteorological data fields in increments of one minute. The effort is being led by a multi-institution steering agency and is working closely with National Weather Service initiatives.

<http://jsumesonet.jsums.edu>

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the Scruggs law firm chose to reference data from the Pascagoula Mesonet station.

JSU started another five-year grant for the NOAA Center for Atmospheric Studies (NCAS), ensuring resources for maintenance of the existing Mesonet stations. The grant is a subcontract from Howard University.

During their visit to JSU for the NCAS Numerical Modeling Workshop last summer, Drs. Syed Rezvi of NCAR and Sundararaman Gopalakrishnan of NCEP expressed their interest in developing a collaboration to use Mississippi Mesonet in the testing and development of the WRF mesoscale model. NCAR is the National Center for Atmospheric Research at Boulder, CO (funded by NSF) and NCEP is the National Center for Environmental Prediction (associated with the National Weather Service). WRF is the Weather Research and Forecasting model, which is the new standard for NOAA and NCAR research and forecasting.

About this newsletter

The plan is to prepare this newsletter on a quarterly basis. The next issue should be available by mid-November. For now, distribution will be mostly electronic, but we would like your feedback on what works best for you.

Please let us know what you think about this first issue. We want (*need!*) your input regarding format, story ideas, interesting weather cases, trivia, or anything relating to the Mesonet or weather/climate. Also if you know of someone else that we should add to our distribution list, would like to specially request hardcopies, or even if you want removed from the distribution list, please drop us a line.