

# the CHANNEL

Summer 2006

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Peachtree City, Georgia

## 2006 Hurricane Season Not Quite as Busy

by Christine McGehee

The first two months of the 2006 Atlantic hurricane season have been much quieter than the first two months of the 2005 season, despite initial similarities. Alberto, the first tropical system of the 2006 season, formed on June 10th. In 2005, Arlene developed on June 8th. Arlene was quickly followed by five more storms, giving an unprecedented total of three hurricanes and three tropical storms for June and July 2005. In contrast, 2006's second system, Tropical Storm Beryl, didn't appear until mid-July. Tropical Depression Three developed on the evening of July 31st and was named Tropical Storm Chris early the next morning.

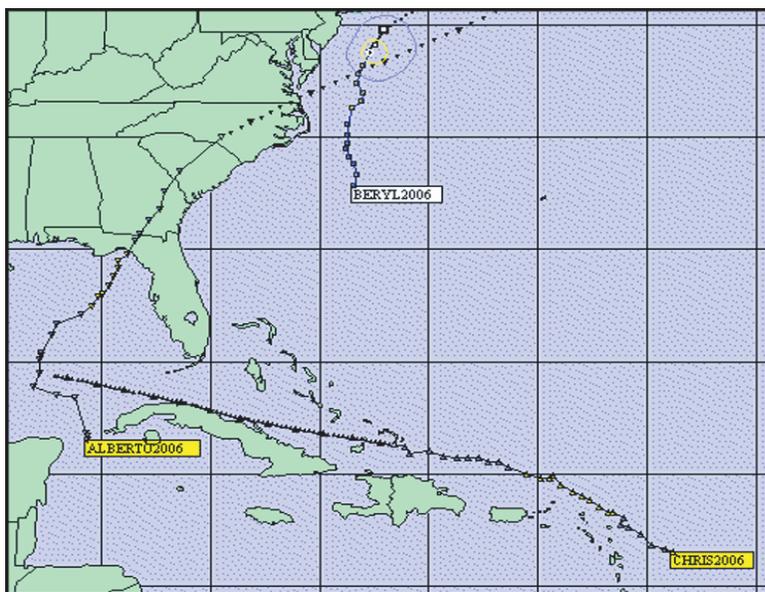
This year's Tropical Storm Alberto came close to hurricane force, with peak winds of 70 mph. The storm made landfall along the Florida Big Bend coast on Tuesday, June 13th. While rainfall of as much as 3 to 5

inches was reported on the Florida Panhandle, the local flooding was mainly due to storm surge. As Alberto moved northeast, it dropped as much as 4 to 6 inches of rain along the Georgia and South Carolina coasts. The dry spring had left plenty of room in the soils for the rainfall, and no significant flooding was reported in these areas.

As the storm continued moving northeast, Alberto was surprisingly troublesome for portions of eastern North Carolina. While most of the Southeast had been fairly dry, previous weeks had brought enough rain from scattered storms to leave soil moisture levels closer to normal in the eastern Carolinas. As the remnants of Alberto moved over eastern North Carolina on Wednesday, June 14th, the system became extratropical and interacted with a stalled frontal boundary. A persistent band of heavy

rain set up along and west of the I-95 corridor, bringing widespread amounts of 2 to 5 inches in 24 hours, and local totals between 6 and 8 inches. Severe flash flooding occurred on Crabtree Creek in the Raleigh metro area, and moderate to major flooding was reported on the Neuse and Tar Rivers.

As we approach the peak months of the hurricane season, we aren't expecting things to stay quiet for much longer. Drs. Klotzbach and Gray of Colorado State have recently revised their seasonal forecast slightly downward, citing above-normal sea level pressure and wind shear over the Atlantic, as well as a slight cooling trend in sea-surface temperatures. However, they still expect an active season, with 13 more named storms forecast for the remainder of 2006.



Hurricane graphic showing the storm tracks of the first three tropical storms of 2006.

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# Development of a Situational Awareness Display

by John Feldt

The office has focused on forecast improvement for our faster-responding basins over much of the past year. An integral part of this initiative has been a greater awareness of “what is going on,” or situational awareness (SA), across our area. As our area encompasses 270,000 square miles, portions of seven states, and over 200 forecast points, it is a real challenge to keep track of what is really happening!

SERFC staff must also keep track of hundreds of river gages and rainfall data points and monitor up to several dozen Doppler radars, often on a nearly constant basis. Just one “bad” rainfall report can contaminate the computation of mean aerial precipitation that, in turn, could produce an error in the forecast hydrograph. Furthermore, many of our forecast points respond quickly to heavy rainfall, even rising from base (low) flow to flood stage within hours.

Several significant accomplishments have been made over the past few months to enhance our overall SA. A team consisting of Mark Love, Jeff Dobur, Steve Scott, and Jack Bushong helped with the development of the first phase of our Situational Awareness Display (SAD). The SERFC SAD consists of two 42-inch LCD monitors. Both monitors have the flexibility to ingest multiple data sources, including PC and cable TV inputs.

Two staff members have developed SAD-specific display programs. Hydrologist Mark Love has developed a complex GIS-based SA program that ingests vast amounts of data and displays output clearly showing the status (flood category) of our forecast points. This program allows staff to quickly recognize minute-by-minute changes for all of our forecast locations. In addition, it allows us to easily identify any erroneous river gage data that has

entered the database. Jack Bushong (HAS Meteorologist) developed a PC-based program called the Situational Awareness Web Refresher (SAWR) which allows us to choose a wide variety of web- or PC-based graphics for display.

This first phase of our SAD has already helped improve overall office SA. As the tropical season is upon us, we hope to thoroughly test our SAD. This may lead to further enhancements.



Phase 1 SAD monitors at the SERFC

## New Faces at the SERFC

by Mark Fuchs



**Joshua Palmer** transferred from the Lower Mississippi RFC to become the newest Hydrometeorological Analysis and Support (HAS) forecaster at the SERFC. He occupies the position vacated by Jeff Dobur, who was recently promoted to senior hydrologist. Josh is no stranger to this RFC, having worked at the SERFC for a couple of months in 2005 as LMRFC recovered from the devastating effects of Hurricane Katrina. Prior to joining the NWS, Josh worked as a student volunteer for the WFO in Raleigh, N.C. while performing postgraduate work for North Carolina State University. Josh received his undergraduate degree in meteorology from the University of Oklahoma in 2002.



**Ana Maria Hagan** recently joined the SERFC as a Student Career Experience Program (SCEP) participant from the Georgia Institute of Technology. Ana Maria, a native of Puerto Rico, graduated in May, 2005, from the University of Rhode Island with a B.S. in Civil and Environmental Engineering and a B.A. in Spanish along with French studies. She began at Georgia Tech in the Environmental Engineering Masters Program in 2005 and will receive her M.S. in the spring of 2007. Ana Maria found Water Resources Engineering to be her *métier*, and in the spring of 2006, she enrolled in Georgia Tech’s Civil Engineering doctorate program while minoring in meteorological studies. Ana Maria will be a part of the newly formed SERFC Science Team and will help further the SERFC’s NWSRFS hydrologic development component.

# The Water Resources Outlook Goes Multimedia

by Todd Hamill

The Water Resources Outlook (WRO) has evolved since it began about 10 years ago. It has gone from a strictly text product to a graphical depiction with a text description into what it has become today, a multimedia briefing that includes slides and a voice-over that can be downloaded and viewed. Todd Hamill and John Feldt lead the program and can be heard in the presentation regularly. However, others from the SERFC are invited to participate based on their expertise and how it relates to what is happening in the southeast.

The WRO usually begins by looking into the past to understand current soil moisture conditions. This portion of the slide show uses past precipitation images, both short and long term, and current U.S. Geological Survey streamflow data. A snapshot of current weather conditions follows. An analysis of

fronts, tropical activity, and reservoir releases highlight this portion to provide the “big picture” to the customer. A short-term and long-term look into the future is next. One of the SERFC hydrometeorologists reviews model information to determine projected impact across the southeast. For the long-term temperature and precipitation outlook, the hydrometeorologist uses monthly and seasonal forecasts from the Climate Prediction Center (CPC) along with El Niño and La Niña conditions and predictions. To conclude the WRO, John usually gives a “bottom line”, summarizing all of the information previously presented.

A list server is now available for anyone interested in receiving the WRO. Interested parties can add their names to the list to be notified when a new WRO is issued.

Typically, the product is issued every 1 to 2 weeks. However, if conditions are not changing significantly, it could be a little longer between updates. If a big event, like a tropical storm, affects the area, the WRO can be put updated sooner. To subscribe for automatic notification of updates or to download the latest WRO, go to <http://www.srh.noaa.gov/serfc/wro/default.html>. Any questions or comments about this product can be sent to [sr-alr.rivers@noaa.gov](mailto:sr-alr.rivers@noaa.gov).



WRO introduction slide

## Hittin' the Road This Summer

Before the hurricane season gets “roaring”, the staff from SERFC is getting out and visiting some of our partners and customers.

### June:

- Brad to Tallahassee, Fla.: Coordination meeting with WFO-TAE, USGS, and Corps.
- Tom and Mark F. to northern Atlanta: Coordination meeting with WFO-FFC, Georgia USGS, and north Georgia EMs.
- Mark F. and Chris to northern Atlanta headwaters: Office field trip with folks from WFO-FFC.
- Tom to Wadley, Ala.: FloodReady exercise.
- Jeff to south Florida: Familiarization visit to the National Hurricane Center, WFO-MFla., South Florida Water Management District and Lake Okeechobee.
- Jeff and Jack to Forsyth, Ga.: GEMA Flood Fight Course (invited instructors).
- Todd to Savannah, Ga.: NWS/USGS/Corps regional coordination meeting.
- John to St. Augustine, Fla.: Florida Lake Management Society conference.

### July:

- Mark F., Tom, Wylie, and Josh to Lake Jackson/Lloyd Shoals Dam and upstream river gages: Office field trip with WFO-FFC Service Hydrologist Kent Frantz.
- Jonathan to Columbus, MS (Corps), Jackson, MS (WFO-JAN), and Mobile, Ala. (Corps and WFO-MOB): Coordination meetings.
- Jeff and Jack to Tallahassee and Dowling Park, Fla.: Constituency meetings with Joel Lanier (WFO-TAE), Ben Weiger (SRH), and local and regional constituents.
- Wylie and Jeff to WFOs GSP and CAE: AHPS coordination meetings with the office staffs.
- Tom to Wallace Dam in east central Georgia: Table-top exercise setup with Georgia Power Company.

### August:

- Josh to Raleigh, N.C.: Planning meetings for a CSTAR project.
- Todd, Wylie, and Chris to Rome, Ga.: Office field trip led by WFO-FFC Senior Hydrologist Kent Frantz.
- Tom to Wallace Dam: Table-top exercise participation with Georgia Power.
- Todd to Newport, N.C. (WFO-MHX) and Wilmington, N.C. (WFO-ILM and Corps): coordination and AHPS discussions.

### September:

- Jonathan, Jack, Jeff, and Mark F. to north Atlanta: Office field trip conducted by WFO-FFC Service Hydrologist Kent Frantz to visit Chattahoochee River sites.



# Hydro Tools for the WFO Toolbox

*Hydro Tools for the WFO Toolbox: This section in "The Channel" highlights both old and new tools used by the Southeast River Forecast Center that could be utilized by the WFO community to enhance their day-to-day forecast operations. To let us know how you like this section, email [Jeffrey.Dobur@noaa.gov](mailto:Jeffrey.Dobur@noaa.gov).*

## Enhancing Hydrologic Operation's Situational Awareness with Customized D2D Map Overlays

by Jeff Dobur

In the spring of 2006, the Southeast River Forecast Center began a new office initiative to help improve forecast accuracy and lead time at faster responding forecast points. To accomplish this and to improve the office's situational awareness, the SERFC developed the capability of seeing these fast responding basins mapped relative to real-time radar within D2D. With the improvement, forecasters can monitor real-time trends in precipitation relative to these basins. The result is an increased capability to identify a potentially dangerous flood situation such as training thunderstorms or stationary thunderstorms over a

hydrologically vulnerable area. In addition, forecasters are more aware of the spatial distribution of the precipitation across the basin over time gaining a perspective on stream response and how it may differ from the hydrologic model.

The SERFC has added several map overlays to its D2D user interface to enhance situational awareness within operations. For information on how this can be done at your office, email Jeff Dobur at SERFC – [jeffrey.dobur@noaa.gov](mailto:jeffrey.dobur@noaa.gov)

