



January, 2006

### Look inside for more information:

- NWS Huntsville Research Activities over the last year
- Outreach Achievements in 2005
- The significant events that affected you
- Meet the NWS Huntsville Staff

### What others said about NWS Huntsville's work during Katrina...

*"...you rose to the challenge, and then some. We feel fortunate to be paired with WFO Huntsville."*

- Alan Gerard, MIC  
WFO Jackson, MS

*"The loss of life would have been much more had your team commitment to duty been less strong."*

- D.L. Johnson  
Director, NWS

*"... your office and staff went the extra mile. Thank you very much!"*

- Marty Broman

*"... the Weather Service did an outstanding job on prepping the media. I felt a lot more informed about what was going on. I am very glad that we have a weather office in Huntsville."*

- Roger Allen

NATIONAL WEATHER SERVICE HUNTSVILLE, AL

# 2005 Year In Review

## Message from the Meteorologist-In-Charge

### New Faces, Hurricanes Dominate Year

**Hurricanes** dominated the weather events for the year, with Dennis, Katrina, and Rita the notable storms of 2005. These hurricanes occurred in a year with very little spring or fall severe weather.

I am particularly proud of the work done by the office during Hurricane Katrina. The NWS has a backup system where one office takes over for another in the event the primary office is disabled. During the time Katrina made landfall over Louisiana, WFO Jackson became unable to operate due to a massive communication outage.

WFO Huntsville is the primary backup for Jackson, and was able to quickly take over and serve the people of Central Mississippi in addition to our partners and public in the Tennessee Valley. This was a true success story of the National Weather Service, and could not have been possible had the office not spend countless hours preparing for this possibility.

We should all be thankful and proud that they are here serving Northern Alabama and Southern Tennessee.

**StormReady** has become a valuable tool for both the NWS and their partners in protecting the public during severe weather.

To foster preparedness among the non-emergency

management community, NWS Huntsville began the StormReady Partner program. This extension of the program is open to all sub-county agencies and companies with a large number of



**Redstone Arsenal and MSFC become StormReady Supporters**

employees. Redstone Arsenal and the Marshall Space Flight Center became the our first StormReady supporter in 2005, and we anticipate many more for 2006.

**Promotion** of staff is the best measure of your good reputation reaching other offices in the National Weather Service, and some of our best and brightest have been promoted out of station.

Matt Zika, one of our original Lead Forecasters, has been promoted to Warning Coordination Meteorologist at the Marquette, MI WFO. Matt was active in the aviation and outreach community here, and will be a great addition to the Marquette office.

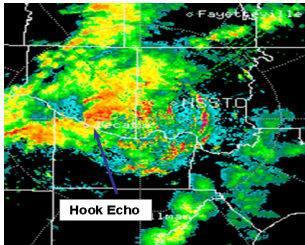
Priscilla Bridenstien, one of our original General Forecasters, has received a promotion to Lead Forecaster at

the NWS office in Binghamton, NY. Priscilla was instrumental in establishing outreach with the local schools, and will also be sorely missed.

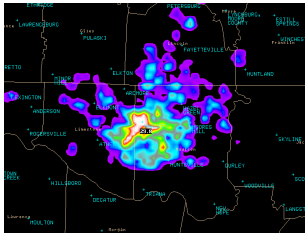
With the loss of Matt and Priscilla, we were seeking two forecasters that could fill their shoes. For the Lead Forecaster position, we selected David Nadler from WFO Grand Junction. David began his career at the WFO Corpus Christi where he worked many significant weather events, including Hurricane Bret. We are looking forward to having David in the office and benefiting from his ample experience in winter weather and aviation program management.

We looked within the office for the General Forecaster Position. Patrick Gatlin will take on the duties of forecaster in our office beginning in January '06. Patrick has done remarkable work for the office in the area of lightning research, and has been an all-around positive force on the office. His work during 2005 garnered the Director's Award for teamwork (with Lary Burgett).

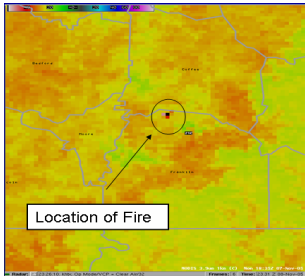
**Inside** this Year In Review we have information on what we have done over the last year, and give a hint of what we hope to do in 2006. We look forward to working with you to provide the weather support you need.



**Dual-polarimetric ARMOR radar image showing a hook echo and potential tornado development near Decatur.**



**Total lightning data (courtesy of NASA) being utilized by WFO Huntsville in warning and forecast operations.**



**NASA satellite imagery aids NWS forecasters detect "hot spots" that indicate developing or growing wildfires.**

### Notable Activities by NWS Huntsville

#### Outreach:

- > Conducted Lightning Safety at the 2005 AHSAA All-Sports Expo
- > Recorded a Lightning PSA by Alabama football coach Mike Shula
- > Provided tours and weather instructions to teachers visiting NASA Space Camp.

#### Operations:

- > Participated in the NWS VTEC risk-reduction test
- > Pioneered CO-OP Modernization methodology (with UAH).
- > Tested new AWIPS builds as part of Operational Training and Evaluation exercise.

## Science Initiatives in Huntsville

NWS Huntsville continued to remain active in the areas of training, collaboration, and science and technology infusion over the past year. In 2005, the collaborative efforts between the local NWS office, NASA's Marshall Space Flight Center, and the University of Alabama in Huntsville brought a host of new tools and observational data sets into the forecasting environment. These advanced data sets allow us to provide predictions and warnings on spatial scales that elevate our level of service for residents of the Tennessee Valley.

In addition, a greater understanding of severe weather processes has been achieved through the utilization of real-time total

lightning and dual-polarimetric radar data at NWS Huntsville. NASA scientists maintain a total lightning monitoring network in north Alabama that can detect not only cloud to ground lightning strikes but also intracloud and cloud to cloud lightning. The Huntsville office was the first forecast office in the nation to have access to this unique and exciting dataset. Meanwhile, a partnership between the local media and UAH has allowed us to have real-time access to a dual-polarimetric radar scanning the skies across north Alabama. This radar, in conjunction with the NEXRAD network of radars, provides a wealth of information about the vertical structure, precipitation type,

and wind flow within a developing storm system.

To maximize the effectiveness and impact of these cutting edge technologies, WFO Huntsville has worked tirelessly with its partners at UAH and NASA to provide state of the art training to NWS forecasters. In addition, these partners have worked together to conduct scientific reviews of "high impact" events, conducted presentations at regional and national conferences, and published research in peer-reviewed journals. In the end, this effective partnership will benefit the public and the community through improved forecasts and warning services.

- Chris Darden, SOO

## Warning and Preparedness Activities

The Outreach and public severe weather awareness team at NWS Huntsville eagerly participated in educating the public about severe weather safety. Severe weather safety training was provided to over 1,500 residents, covering 27 talks through the year. There were 37 presentations completed to schools across the Tennessee valley, including numerous school tours of the NWS office through the year. Lincoln county, Tennessee was re-designated as a StormReady county in August, with NWS Huntsville remaining 100 percent StormReady throughout the entire county warning and forecast area.

Further StormReady re-designation visits were

completed in December for all 11 north Alabama counties, resulting in NWS Huntsville remaining 100 percent StormReady. A large ceremony will occur on February 17, 2006 in Cullman, Alabama to celebrate this important accomplishment.

NWS Huntsville collaborated with Lincoln county, Tennessee EMA and State Farm Insurance on an extensive Turn Around, Don't Drown (TADD) outreach pilot project. The TADD Outreach team consisting of forecaster and hydrology program leader, Jason Elliott, Warning Coordination Meteorologist, Tim Troutman, and NWS Nashville, Tennessee, Service Hydrologist, Mike increased flash flood and flooding

awareness in Lincoln county, Tennessee due to a recent flood related death. As part of the pilot project, Lincoln county EMA was successfully granted \$1,000.00 through the State Farm Safe Neighbor safety program for the placement of 30 signs across Lincoln county in flood prone areas that specifically mention "Turn Around, Don't Drown, Detour, Flood Prone Area. The NWS Huntsville flood information web site is also listed on the sign. This sign and flash flood awareness public education project is expected to continue to spread across middle Tennessee and north Alabama in the coming months.

- Tim Troutman, WCM

## 2005 Significant Events

2005 began on an extremely warm note, with highs in the 60s and 70s recorded every day for the first two weeks of the year. The average temperature of 58.0 over that period marked the warmest start to a year on record in Huntsville. This warm period was broken by a damaging wind severe weather event on January 13th, after which temperatures stayed below average for the rest of the month.

Two winter weather events occurred during this cold period. The first occurred on the 23rd when a lake effect snow band from Lake Michigan made it all the way into northern Alabama, and produced a dusting to one-half inch of snow across portions of Madison, Lincoln, and Franklin County Tennessee. A second winter event on the 28th and 29th impacted the elevated terrain of northeast Alabama, where icing caused some roads to become impassable.

February saw a return of the warm temperatures for much of the month and a widespread severe weather

event on the 21st. There were nearly 40 reports of large hail across the Tennessee Valley over an 11 hour time span, and baseball sized hail was reported near Valley Head in DeKalb County.

In April, severe weather brought the first confirmed tornado of the season, an F-0 with winds of 70 mph in DeKalb County on the 22nd. Just 2 days later parts of the Tennessee Valley experienced the worst late April cold snap in more than 30 years, and many areas reported a very late freeze.

May was a remarkably quiet and dry month, with no rainfall reported for the first 13 days of the month at Huntsville for the first time since 1942. Less than an inch of rain fell for the entire month at Muscle Shoals, and just 1.89 inches fell in Huntsville. Despite the dry weather, temperatures were near normal.

Tropical Storm Arlene developed in the Caribbean on the 8th and made landfall just east of Mobile Bay 3

days later. The storm tracked northward across Alabama, spreading moderate to heavy rainfall across the Tennessee Valley.

The active season continued less than a month later when Hurricane Dennis hit Pensacola on July 10th. Fortunately, Dennis collapsed quickly after making landfall. Winds remained below tropical storm force (39 mph) area wide and rainfall amounts only around 1 inch.

Hot summer weather returned for July and August 2005. Temperatures reached into the mid 90s several times in late July, but the hottest weather was reported in August. Huntsville reached 100 degrees on the 21st, for the first time since 2000, while Muscle Shoals reached 99 degrees on the 20th. The hot weather helped spark scattered thunderstorms across the area nearly every day, and several of the storms produced significant wind damage due to downburst winds.

(Continued on page 4)



**Large hail in Florence from the February 21st event.**



**Tree damage from the F-0 tornado on April 22nd.**

### Notable Activities by NWS Huntsville

- Web Development:
- > Built EMA weather page
  - > Constructed WebCEM for Emergency Managers to rely more accurate, timely emergency information to the public.
  - > Converted to PHP to allow critical pages to load faster
  - > Instituted new climate page
  - > Constructed new satellite and hazards page

### New Web Development Slated for 2006:

- > Can't find the time to visit us? You will be able to see how we operate with a new Virtual Office Tour
- > New Warning Display to increase situational awareness during high impact events.
- > Hourly and daily temperature and precipitation maps for the Tennessee Valley

## Your NWS Huntsville Staff

Name	Position	Name	Position
Michael Coyne	METEOROLOGIST-IN-CHARGE	David Nadler	LEAD FORECASTER
Chris Darden	SCIENCE AND OPERATIONS OFFICER	William Schaub	LEAD FORECASTER
Tim Troutman	WARNING COORDINATION METEOROLOGIST	Steve Shumway	LEAD FORECASTER
Brian Burgess	ELECTRONICS SYSTEMS ANALYST	Brian Carcione	FORECASTER
Jason Burks	INFORMATION TECHNOLOGY OFFICER	Beth Carroll	FORECASTER
Lloyd Hill	ELECTRONICS TECHNICIAN	Jason Elliott	FORECASTER
Pearline McCauley	ADMINISTRATIVE SUPPORT ASSISTANT	Patrick Gatlin	FORECASTER
Lary Burgett	OBSERVING PROGRAM TEAM LEADER	Mike Richter	FORECASTER
Robert Boyd	LEAD FORECASTER	Kurt Weber	METEOROLOGIST INTERN
Andy Kula	LEAD FORECASTER	Holly Allen	STUDENT CAREER EXPERIENCE PROGRAM





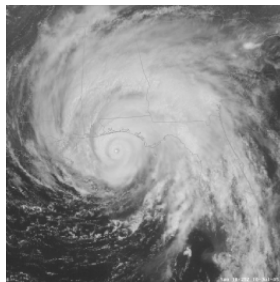
NATIONAL WEATHER SERVICE  
HUNTSVILLE, AL

NSSTC Building  
320 Sparkman Drive  
Huntsville, AL

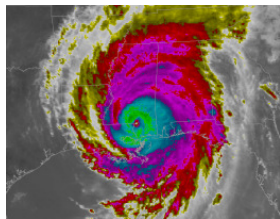
Phone: 256-890-8503  
Fax: 256-890-8512

[www.srh.noaa.gov/hun](http://www.srh.noaa.gov/hun)

## 2005 Significant Events (cont.)



**Hurricane Dennis moved onshore on July 10.**



**Hurricane Katrina struck the area on August 29.**

*(Continued from page 3)*

Despite the active thunderstorm season, the main event for August, and arguably the entire year, was Hurricane Katrina. Katrina will be long remembered for her destruction as she made landfall on the 29th. The storm made quite an impact locally, producing more than 6 inches of rain in portions of northwest Alabama and wind gusts near 50 mph. Despite the destruction, Katrina's rainfall benefited the Tennessee Valley and kept the drought from becoming too severe.

The dry weather locally and active tropical season continued into September. Barely half an inch of rain fell at Huntsville and Muscle Shoals for the first 24 days

of the month. This dry spell was broken by Hurricane Rita. Rita made landfall near the Texas-Louisiana line then came east, providing much needed rainfall, but also the threat of tornadoes. Although, several storms showed strong rotation, Rita luckily produced no confirmed tornadoes in the Tennessee Valley.

October marked one of the driest on record. Just 0.01 inches of rain fell at Muscle Shoals, making it the 4th driest on record, while just 0.10 inches fell at Huntsville, making it the 5th driest on record. October started out warm as well, before a cold snap late in the month brought an unusually early freeze to much of the Tennessee Valley.

Severe weather made a return appearance for the fall severe weather season, twice in November and once in December. The second confirmed tornado of the year was reported on November 15th in western Cullman County, while more widespread straight-line wind damage was reported on December 4th. The severe weather events helped relieve ongoing dry weather but did not put a dent in the rainfall deficit for the year, which reached nearly a foot and a half at Muscle Shoals by the end of December. Cooler weather returned to the Tennessee Valley in December with temperatures much below normal. While there was no White Christmas, some areas did see traces of snow on December 4th and 5th.