

# Shareholders' Report 2005

National Weather Service • Weather Forecast Office • Peachtree City, Georgia



### Big News Items of 2005

- Katrina sets single-event tornado record for Georgia.
- Annual tornado record broken.
- Prototype of Coop Modernization begins in Georgia.
- Adopt-a-County restarted.
- Record flooding from Cindy and Dennis.

*In Fiscal Year 2005, Congress appropriated \$780,201,000 to the NWS. This equates to an "investment" of \$2.63 per U.S. citizen.*

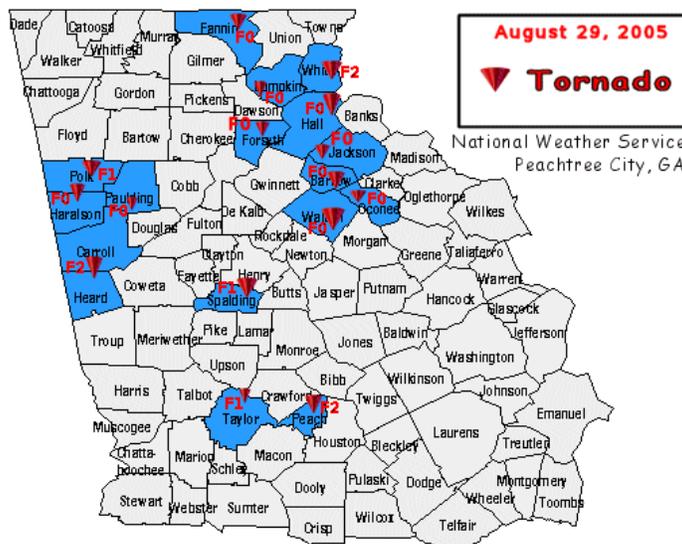
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## One Word: Katrina!

Lans P. Rothfus  
Meteorologist in Charge

**K**atrina! In addition to the devastation hurricane Katrina brought to the Gulf Coast, it was also a major event for Georgia. Katrina spawned a record number for tornadoes for the County Warning Area (CWA) of the Peachtree City Weather Forecast Office (WFO).



Map of record-setting number of tornadoes occurring on August 29, 2005 as Hurricane Katrina made landfall along the Gulf Coast.

## Severe Weather 2005: A Record Year for Tornadoes

Robert Beasley  
Meteorologist

**T**he weather in 2005 proved to be the most active for north and central Georgia since 1998. Twenty-eight tornadoes were confirmed in north and central Georgia during the year,

Throughout this, our fifth annual "Shareholder's Report," you will find other examples of our achievements in 2005, along with summaries of the weather we "worked." This report is intended to show how your "invested" tax dollars are being put to use by our office.

My contact information is on page 14 if you have any comments about this report and/or our services. Enjoy! ☀

## Gold!

Lans P. Rothfus  
Meteorologist in Charge

**O**ne of our notable moments of 2005 resulted from our efforts in 2004. The Peachtree City WFO and eight other offices received the highest award given by the Department of Commerce—a gold medal. Our office earned this award "For providing life-saving services during a record number of hurricanes impacting Florida and Georgia." That is the year Bonnie, Charley, Frances, Ivan, and Jeanne all impacted our area. We are extremely proud of the award and we intend to keep our services at this "gold standard" level for you. ☀



surpassing all previous records for the most tornadoes in one year. It also brought the first tornado-related death since 1998. Several tropical systems impacted the area during the summer and fall, contributing to 22 of 28 tornadoes for the year, as well as flooding and damage in the millions. January brought

a major winter storm, February through May were marked by several major severe weather events, two of which resulted in more combined daily severe convective warnings than had been issued since May 2003.

(Continued on page 3)

**Top 25 North and Central Georgia Weather Events for 2005**

	Date	Location	Cause	Damage	Deaths	Injuries	Cost
<b>1</b>	28-Jul	Hall	Lightning	A 14-year old girl and her 17-month old cousin were killed when lightning struck a tree under which they were standing. Lightning also set fire to eight homes and two businesses in the county.	2	0	\$750K
<b>2</b>	14-Jul	Douglas	Strong Wind	A sudden gust of thunderstorm wind toppled roof trusses on a building under construction, killing a construction worker and injuring four.	1	4	\$25K
<b>3</b>	29-Aug	Carroll	Tornado	An F2 tornado associated with Katrina caused extensive damage, and one death. 17 chicken houses were destroyed. 30 homes suffered moderate damage and 100 sustained minor damage.	1	0	\$4.4M
<b>4</b>	6-Jul	Fayette	Flash Flood	An 18 year-old male was swept to his death in a drainage ditch in Peachtree City. Several homes and roads in the area were also flooded.	1	0	\$163K
<b>5</b>	16-Aug	Chattahoochee	Lightning	Soldiers at Ft. Benning injured by lightning during training exercises.	0	19	
<b>6</b>	29-Aug	Peach	Tornado	F2 tornado caused extensive damage to homes and businesses. Hundreds of large trees were completely uprooted. Three people suffered minor injuries caused by tornado debris.	0	3	\$2.6M
<b>7</b>	29-Aug	Heard	Tornado	F2 tornado touched down in the county. Several homes were severely damaged, along with a number of downed trees and power lines. Three residents were injured as well.	0	3	\$750K
<b>8</b>	29-Aug	Spalding	Tornado	F1 tornado completely destroyed home and another nearby home suffered major damage. Two people injured.	0	2	\$300K
<b>9</b>	29-Aug	Taylor	Tornado	F1 tornado destroyed two site-built homes. A man was trapped in his truck by downed power lines; he sustained minor injuries.	0	1	\$750K
<b>10</b>	7/10-7/11	Upton	Flash Flood	Several roads were washed out and closed. One vehicle was swept into a creek. The driver was injured before being rescued.	0	1	\$700K
<b>11</b>	6-Jul	Henry	Tornado	An F2 tornado did significant damage to the Atlanta Motor Speedway and Tara Field, damaging eleven planes and five vintage helicopters. 229 homes received minor damage and 61 received major damaged.	0	0	\$70M
<b>12</b>	1/28-1/30	Areawide	Winter Storm	Up to 1" of ice and 1.5" of sleet. Trees and power lines damaged.	0	0	\$9.8M
<b>13</b>	11-Jul	Cobb	Flash Flood	Extensive flooding occurred throughout the county. Some areas received as much as a foot of rain. Up to 700 homes damaged.	0	0	\$6M
<b>14</b>	21-Feb	Cobb	Hail	Hail to the size of tennis balls caused damage to vehicles and residences.	0	0	\$5M
<b>15</b>	21-Feb	De Kalb	Hail	Hail up to 2" fell across the county.	0	0	\$4.6M
<b>16</b>	21-Feb	Cherokee	Hail	Hail up to 2.75" caused extensive damage to cars, homes, and businesses. Second costliest hail storm in the county's history.	0	0	\$4.5M
<b>17</b>	21-Feb	Gwinnett	Hail	Golf ball-sized hail from two storms caused damage around the county.	0	0	\$4.4M
<b>18</b>	29-Aug	White	Tornado	F2 tornado ripped second floor off Econo Lodge hotel in Helen. Several other buildings suffered extensive damage.	0	0	\$3M
<b>19</b>	15-Dec	NE Georgia	Ice Storm	Up to 0.5" of ice widespread across northeast Georgia. Numerous trees and power lines were damaged.	0	0	\$2.9M
<b>20</b>	6-Jul	Fayette	Tornado	F0 tornado touched down just southeast of Fayetteville. Hundreds of trees were blown down, damaging homes and businesses.	0	0	\$2M
<b>21</b>	11-Jul	Cherokee	Flash Flood	Flash flooding associated with Noonday Creek caused extensive flooding of an apartment complex. Businesses, hotels, and 15 homes were also flooded. Dozens of cars were submerged.	0	0	\$1.6M
<b>22</b>	21-Feb	Bartow	Hail	Hail up to 2" from two storms caused extensive damage to vehicles and roofs.	0	0	\$1.5M
<b>23</b>	6-Jul	Clayton	Tornado	F2 tornado damaged 50 homes, 20 of which had major structural damage. Many trees and power lines were also downed.	0	0	\$1.5M
<b>24</b>	21-Feb	Barrow	Hail	Hail to 2" caused significant damage, and accumulated to a significant depth.	0	0	\$1M
<b>25</b>	21-Feb	Forsyth	Hail	Hail to the size of golf balls caused damage around the county.	0	0	\$930K

## Severe Weather 2005

(Continued from page 1)

Then came the unprecedented tropical season with three tropical storms: Arlene (06/11-13), Cindy (07/06), and Tammy (10/06-10/07) and two major hurricanes, Dennis (07/09-11) and Katrina (08/29-30). A record-setting tornado outbreak during hurricane Katrina resulted in 16 confirmed tornadoes affecting 18 counties. Ironically, the passage of hurricane Katrina left the area with one of the driest September's on record.

Quiet weather continued in October and November with few severe weather events. By December, however, a very active zonal flow with intense short waves brought two unprecedented severe weather outbreaks of tornadoes and large hail. Inbetween, a significant ice storm impacted much of northeast Georgia during mid-December. No extreme cold or significant snow was reported during the year.

Overall, 600 severe convective events and 61 flash flood events were recorded during the year contributing \$159M in estimated damages. The 600 severe convective events were well above the WFO FFC 11-year average of 454. The 2005 seasonal breakdown and 11-year normals for severe convective events are as follows:

- Jan-Mar (155/61)
- Apr-Jun (185/231)
- Jul-Sep (88/121)
- Oct-Dec (86/29).

Twenty-seven tornadoes affecting 32 counties were confirmed within the WFO FFC county warning area (CWA)

2005 Deaths and Injuries		
Event	Deaths	Injuries
Tornado	1	9
T-storm Wind	0	1
Hail	0	0
Lightning	2	28
Flash Flood	1	1
Heavy Rain	0	3
High Winds	0	0
Strong Winds	2	6

during 2005—an all-time record for WFO Peachtree City (see page 13). As in 2004, the vast majority of these were associated with tropical storms and hurricanes. Of the 28 tornadoes, 22 (81%) were associated with tropical storms and hurricanes; seven with tropical storm Cindy on July 6, one with hurricane Dennis on July 11, and 16 with hurricane Katrina August 29-30 (which set a new daily tornado record). The associated \$87M in damages, while not a record, was the most tornado-related damage observed since 1998, when nearly \$122M in damages occurred.

### Deaths and Injuries

Six weather-related fatalities were recorded during 2005, equaling that of 2004. However, the 48 weather-related injuries observed during 2005 was the highest since 2000. Five weather-related events resulted in deaths and 18 in injuries. Lightning and strong wind topped the list of weather-related incidents. One death was caused by a tornado, the first such since 1998.

With respect to injuries, lightning topped the list at 28, with nine attributed to tornadoes, six to strong winds, three to heavy rain, and one each to flash flood and thunderstorm winds.

### Property Damage

The total weather-inflicted property damage (\$159.38M) during 2005 was highest recorded for WFO FFC, even exceeding the 1998 figure of \$132.66M. For the first time since 1998, tornadoes topped the list of weather-related property damage at \$87.8M, of which land falling tropical storms and hurricanes accounted for \$87.0M (99%).

Damage from large hail was next in line with \$29.27M in damages. A new effort was made in 2005 to estimate hail damages using population density, home value, and storm coverage area as parameters.

Flash floods accounted for the next highest damage amount with \$15.43M, but well below the \$39.20 million observed in 2004. Flood-related damage added an additional \$1.16M, also considerably less than the \$6.21M observed during 2005. Tropical storms and hurricanes accounted for \$12.74M or 77% of the flash flood/flood-related damages.

A major winter storm in late January and another ice storm in northeast Georgia in mid-December accounted for \$13.8M in damages. Lightning was next at \$8.8M, followed by thunderstorm winds, strong winds, and heavy rain. In 2005, there were 109 weather-related events with estimated damages over \$100,000 and 70 events with over \$250,000 in damages. The top 25 weather events in north and central Georgia (based on fatalities, injuries and damage costs) are listed on page 2. ☀



Vehicle destroyed and home severely damaged in Carroll County where a fatality occurred due to a Katrina-spawned F2 tornado.

*“Twenty-seven tornadoes affecting 32 counties were confirmed—an all-time record for WFO Peachtree City.”*



F2 tornado damage at the Atlanta Motor Speedway in Hampton as the remnants of Tropical Storm Cindy moved through Georgia. Damage costs to the AMS alone were over \$10 million.

## General Weather Review

Paul Denault  
CWSU Meteorologist

*"...high monthly rainfall totals of 8.28" in Atlanta, and 6.50" in Columbus led to the wettest June through August period for both cities."*

The weather in Georgia for 2005 was extremely variable. Like 2004, the year began warm and dry. Columbus reached 70E or more on 9 of the first 12 days in January, and Macon achieved the feat on 13 of the first 14 days. However, cold temperatures in late January

set the stage for an ice storm (28<sup>th</sup>-29<sup>th</sup>) with ¼ to ¾ inch accumulations of sleet and freezing rain over much of north and central Georgia.

Temperatures moderated again in February, as Atlanta fell to freezing or colder on just 4 days. Persistent warmth eventually set a record high temperature of 79 E in Columbus on the 22<sup>nd</sup>. Unlike January though, a wet pattern developed, with Atlanta, Athens, Columbus, and Macon recording a surplus in rainfall.

A cool March followed, but precipitation remained abundant, as all four cities again posted excesses. This trend continued through April, with the coldest air arriving late in the month. On the 24<sup>th</sup>, Atlanta set a record low of 34E for the date, while Athens tied its record of 36. The next day, Macon and Columbus too tied their records with 36E.

Cool conditions continued in May, while precipitation totals fell below average except in Columbus. If not for record rainfall (3.49") on the last day of the month, Columbus, too, would have recorded a substantial monthly deficit. Incidentally, cool temperatures were quite prevalent, with Athens and Columbus witnessing their 8<sup>th</sup> and 9<sup>th</sup> coolest May, respectively.

June began with unusually cool temperatures. Atlanta's high temperature of only 64E on the 1<sup>st</sup> established a new record minimum high temperature for the day. In Athens, the first 3 days of the month produced the

2<sup>nd</sup> coolest 3-day period ever in June. For the month, only Macon posted an above average temperature. Frequent June showers produced 8.80" of rainfall in Columbus and 10.25" in Athens, enough for their 3<sup>rd</sup> and 6<sup>th</sup> wettest June, respectively. The deluge continued in July with downpours from tropical systems Cindy and Dennis. In Atlanta, record rainfall on the 6<sup>th</sup> (5.14") and again on the 11<sup>th</sup> (4.69") contributed to its 2<sup>nd</sup> wettest July at 14.63".

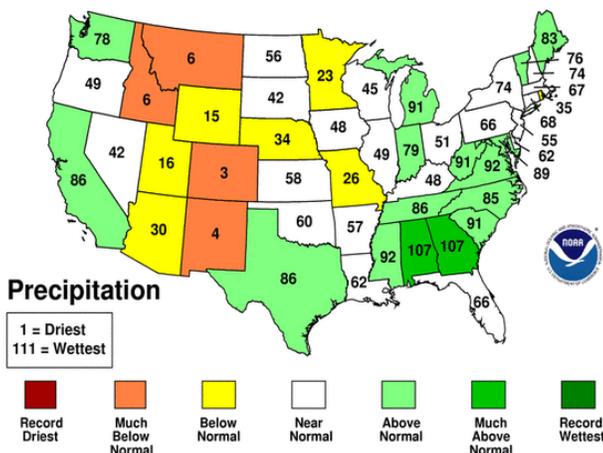
Persistent tropical air and the remnants of Hurricane Katrina prolonged the summer soaking through August. Again, high monthly rainfall totals of 8.28" in Atlanta, and 6.50" in Columbus led to the wettest June through August period for both cities.

However, this record wet season came to an abrupt end, as Atlanta experienced its 2<sup>nd</sup> driest September. With just 0.07" of monthly rainfall, only Macon was drier with 0.02". Both Macon and Athens at 0.17" recorded their driest September. Much of the summer had experienced near average temperatures. However, a late season heat wave helped tally a monthly average of 80.3E in Columbus, its warmest September.

Rainfall remained below average during October and November, except in Columbus. Sufficient rainfall amounts in December added to an already above average total for the year in all four cities. ☀

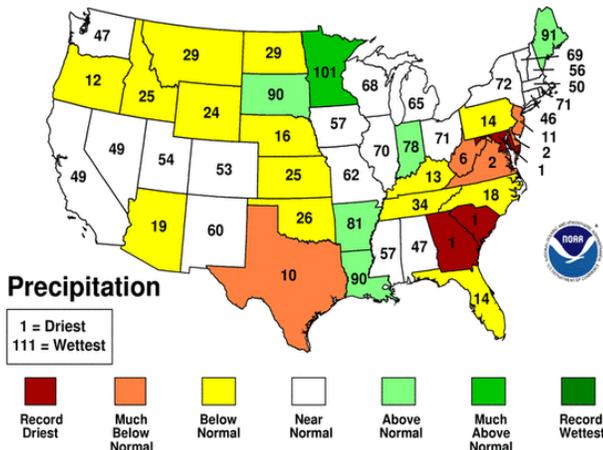
### July 2005 Statewide Ranks

National Climatic Data Center/NESDIS/NOAA



### September 2005 Statewide Ranks

National Climatic Data Center/NESDIS/NOAA



Precipitations charts showing the variation in rainfall in a span of only three months.

## Forecaster Performance Continues to Improve

Trisha Palmer  
Meteorologist

For several years, meteorologists at the Peachtree City WFO have shown better forecasting skill than computer models. Verification statistics for four sites across our forecast area (Atlanta, Athens, Macon, and Rome) indicate that our forecasters are keeping up with and surpassing improvements made in the models.

The adjacent charts show temperature and precipitation error since 1999 at the above four sites. Forecaster scores are compared against model guidance; lower scores are better.

For 2005, our forecasters not only beat the models in both

temperature and precipitation, but we posted the best scores for the past seven years. The past year saw an 81% and 94% improvement on temperatures and precipitation, respectively.

We also compare our forecasts to observed (actual) temperatures. Our goal is to forecast high and low temperatures within three degrees of the actual high and low. The bottom chart shows that we achieved this goal 84% of the time for the first period of each forecast for Atlanta in 2005.

Throughout the year, we conducted training workshops and seminars to better our skills. In addition, annual awards are given to the forecasters who reach the three-degree forecasting goal, both for the warm and cool seasons. ☀

## Red Flags are Working

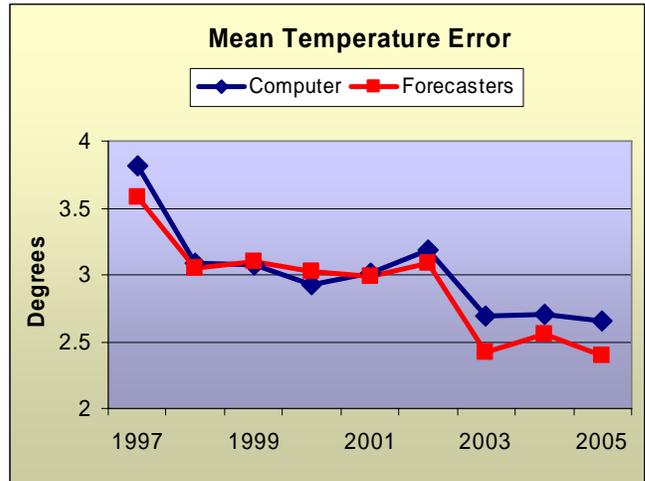
Brian Lynn  
Meteorologist

The 2005 fire weather seasons in Georgia, spring and fall, were more active than the previous two years. Twenty five red flag warning events occurred during the year affecting a total of 1,872 counties. Verification of the warnings has shown ever increasing and significant improvement over 2004. In just our third year of Red Flag verification, our Probability of Detection was 86% (100% is best). Our False Alarm Rate was 11% (0% is best). The average lead time for all warnings was 10.2 hours.

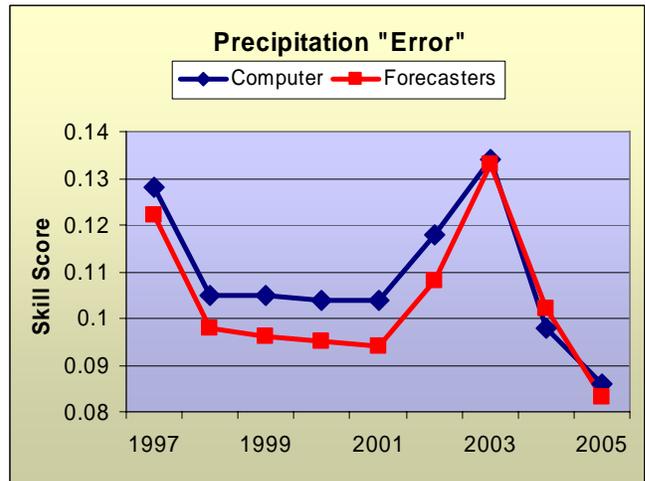
A complete overhaul of the office's Area Operations Plan

(AOP) was finished in January. This project started in February of 2004 with collaboration from surrounding offices responsible for fire weather services in Georgia. As part of this project, the AOP has been made available on the web for all fire weather customers in Georgia.

In August, our Fire Weather Program Leader travelled to western Montana for seven days to train as an Incident Meteorologist (IMET) on a wildland fire. The "Interstate 90" fire, as it was called, burned 15,000-20,000 acres and at one time threatened the town of Alberton. This was the first of two training fires required to certify our IMET trainees for dispatch to fires and incidents nationally. ☀



Comparison of WFO Peachtree City forecasters' temperature forecasting skill versus that of the computer models they use. Lower scores are better.



Comparison of WFO Peachtree City forecasters' precipitation forecasting skill versus that of the computer models they use. Lower scores are better.

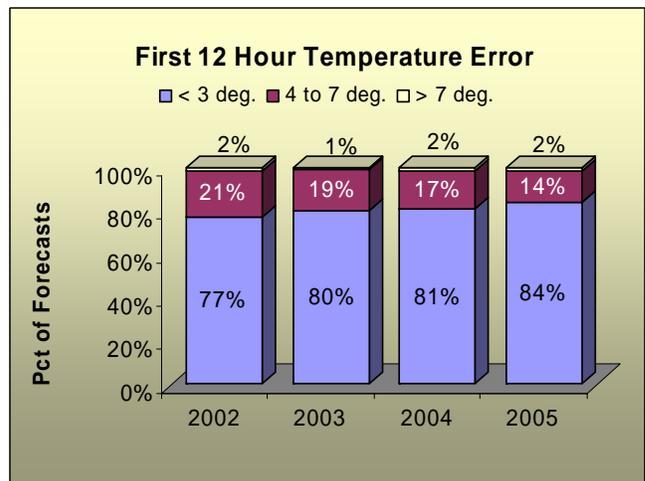


Chart showing distribution of first period (first 12 hours) forecast temperature errors for Atlanta Hartsfield-Jackson Airport.

## Severe Weather Performance for 2005

Barry Gooden  
Warning Coordination Meteorologist  
& Robert Beasley  
Meteorologist

*“WFO Peachtree City issued 818 severe convective warnings (by county), which is the most warnings issued in a single year since 1999 – a marked increase from the 473 warnings issued in 2004. It is the fourth-highest annual amount issued by WFO FFC since the advent of NEXRAD Doppler radar in 1995. Since 1995, the number of warnings issued annually has ranged from a low of 452 (1995) to a high of 1596 (1998).”*

During 2005, WFO Peachtree City issued 818 severe convective warnings (by county), which is the most warnings issued in a single year since 1999 – a marked increase from the 473 warnings issued in 2004. It is the fourth-highest annual amount issued by WFO FFC since the advent of NEXRAD Doppler radar in 1995. Since 1995, the number of warnings issued annually has ranged from a low of 452 (1995) to a high of 1596 (1998).

For 2005, 20% (168) of the warnings were issued in April alone, with February, March, April, and May accounting for 56% (460) of the warnings issued during the year. Above-average total of severe convective warnings were also observed in August, when a record number of tornado warnings (62), associated with

	Exclusive Verification Method*			Inclusive Verification Method**
	Svr Tstm	Tornado	Flash Floods	Svr Tstm & Tornado
<b>Warnings Issued</b>	688	130	104	818
<b>Warned Events</b>	327	21	21	386
<b>Unverified Warnings</b>	336	106	54	400
<b>Unwarned events</b>	154	12	41	128
<b>Total Events</b>	481	33	62	514
<b>POD</b>	0.680	0.636	0.339	0.753
<b>FAR</b>	0.488	0.815	0.519	0.488
<b>CSI</b>	0.412	0.167	0.248	0.439
<b>Lead Time (min.)</b>	10.2	12.8	18.4	10.4

**POD** = Probability of Detection, our ability to issue warnings before damage occurs. Optimum POD is 1.00.  
**FAR** = False Alarm Rate, the percentage of warnings not verified. Optimum FAR is 0.00.  
**CSI** = Critical Success Index, a combination of the POD and FAR. Optimum CSI is 1.00.  
**Lead Time** = The time between warning issuance and first damage.  
 \*Severe Thunderstorm warnings only verified by large hail or damaging winds. Tornado warnings verified by tornadoes only. Flooding only verified by flash floods.  
 \*\* Tornado warnings verified with tornadoes, large hail, or damaging winds. Tornadoes also verify severe thunderstorm warnings.

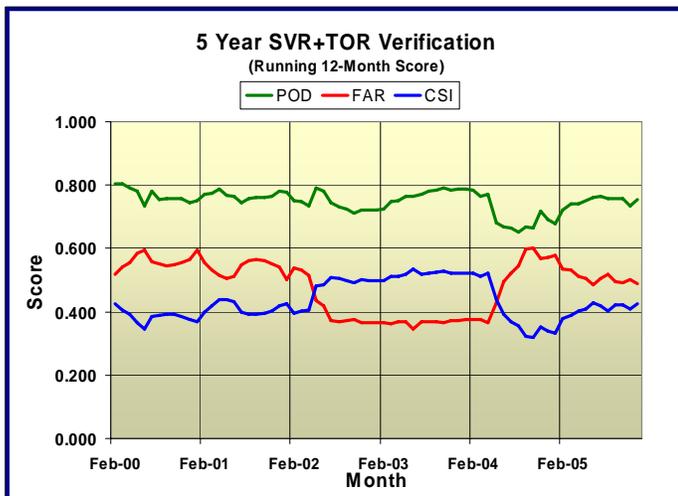
hurricane Katrina were issued on August 29.

tornadoes warnings in July and August were associated with hurricane or tropical storms.

The year ended with an unprecedented 132 warnings in December, of which 32 were tornado warnings. February and December saw the biggest departures from normal with 106 warnings issued in February, compared to the 11-year average of 29, and 132 warnings in December, compared to the 11-year average of 21.

Verification scores showed a dramatic improvement over 2004 with PODs and FARs showing the most notable changes (see chart at left). FARs are still at higher levels than those in 2002 and 2003. This can be attributed to the higher number of “false alarm” tornado warnings issued with the tropical storm events of 2004 and 2005. Tornadoes associated with tropical storms are far more unpredictable than those in typical “supercell” thunderstorms—which yields a higher rate of false alarms.☀

The distribution of tornado warnings for 2005 is as follows: January (4), February (1), April (3), July (28), August (62), and December (32). All of the



Performance statistics for severe weather warnings using a rolling, 12-month methodology. Low FAR, high POD and high CSI are desired.

### Now you can issue warnings, too...

Ever wanted to issue warnings like the NWS does? Now you can! Check out Hot Seat at: [www.srh.noaa.gov/ffc/HotSeat](http://www.srh.noaa.gov/ffc/HotSeat)

## Testing Begins for Modernized Coop Program

Frank Taylor  
Observations Program Leader

The National Weather Service in Peachtree City has established partnerships with several State and Federal agencies to modernize the Coop program in Georgia and serve as a national prototype. Joining us in this endeavor are the University of Georgia, Georgia Forestry Commission, U.S. Geological Survey, Georgia Environmental Protection Division, Georgia Bureau of Investigation, Office of the State Climatologist, Georgia Public Broadcasting, and others. This project will improve the

quality of climate data, increase the density of the network and transmit quality climate quality data at least once an hour. By "pooling the resources" of the different agencies we can do this in a cost-effective manner.

During the transition, we continue to manage the current Coop program. During 2005 we completed 174 visits to 94 sites, traveling 16,902 miles. We also had several Coops who received awards. Following is a list of those Coops receiving awards:

### 40 Years

Mr. William A. Sellers  
(Gainesville)

### 35 Years

Mrs. Clea Mae Fortner  
(Dahlonega)

### 25 Years

Mrs. Hazel Aubrey (Franklin)  
Mrs. Mamie G. Dunston  
(Americus)

### 20 Years

Mrs. Betty S. Longino  
(Woodbury)  
Mr. Albert Wheeler (Warrenton)

### 15 Years

Dean A. Dyer (Cleveland)  
Grace Owens (Curryville)

### 10 Years

Freya Browning (Blairsville) ☀



Mr. William Sellers is shown receiving his 40-year length of service award from Eric Avila, Meteorologist Intern, NWS Peachtree City.

### Coop Program Log for 2005

- 16,902 travel miles.
- 174 station visits.
- 94 stations

## Weather Radio ROAMS

Gerald Birdow  
Hydrometeorological Technician

The NOAA Weather Radio is a primary medium for providing you warnings, forecasts, hourly weather, local climate data, etc. At times,

some of our transmitters will stop broadcasting. When this happens, our Remote Off Air Monitoring System (ROAMS) alerts us of the problem. We then begin the process of determining if the problem rests with the telephone line or with equipment in our office. Our

efforts to restore service begin immediately, no matter what time the outage occurs.

We appreciate our listeners across Georgia and their comments help us to improve our broadcasting of life-saving weather information. ☀



The NOAA Weather Radio Console Replacement System which creates "the voice" and broadcasts to 16 transmitters.

## Upper Air

Mike Leary  
Hydrometeorological Technician

Our Upper Air system in 2005 had a slightly lower than average year, with two notable downturns.

In March a piece of equipment that tracks the balloon in-flight failed. The equipment was down for three days and this resulted in an unusually low monthly score. This outage inspired our station personnel to come up with our own in-house competition, which we call Big Dog. This competition is

designed to measure efforts over which we have some control. For example, we now track timeliness of our reports, the amount of lift we use with each balloon, and the type of balloon we choose to use. We award a monthly prize and also an annual one. We've yet to draw any firm conclusions about Big Dog's effectiveness, but anecdotally it seems to have sharpened our upper air skills.

In July we were put out of operation for 36 hours by a lightning hit. ☀

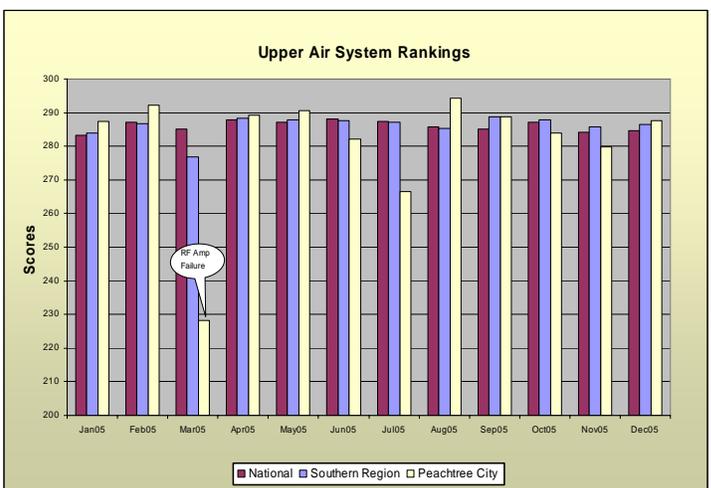


Chart depicting WFO upper air scores versus regional and national scores. Higher numbers are better.

*“New training programs were introduced in 2005 for CWSU meteorologists to improve services to their aviation customers...”*

## Hampton CWSU Leads Aviation Training Activities

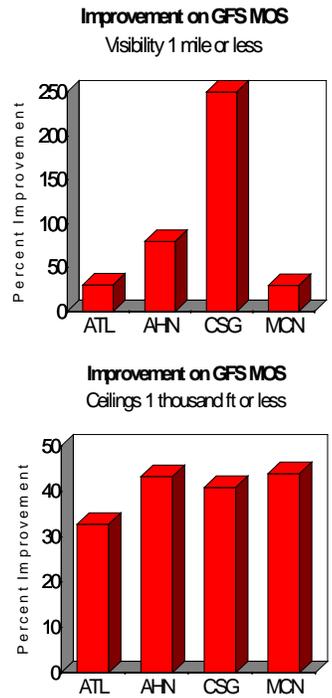
Dr. Chip West  
CWSU MIC

The new year will bring to the Federal Aviation Administration and the aviation community new services and some programs initially developed by NWS teams in 2005. These programs focus on improving customer service, products, and aviation outreach, some of which were developed here locally.

The word of the year for the Center Weather Service Unit (CWSU) in Hampton Georgia, was “training.” New training programs were introduced in 2005 for CWSU meteorologists to improve services to their aviation customers and to advance weather training for general aviation pilots in the state. “The Impact of Weather

on Air Traffic Management,” developed by the NWS and COMET™ in Boulder, Colorado increased forecasters’ knowledge of weather effects on commercial aviation, thereby improving the safety and efficiency of air travel nationally.

To increase outreach programs to the aviation community here in Georgia, the Hampton CWSU developed the “Meteorology for Flight School Instructors” (MEFSI) course. MEFSI is a short meteorology review course that is intended to broaden knowledge of weather flying safety for flight school instructors and general aviation pilots. MEFSI has been taught at several flight schools and flying clubs throughout Georgia in 2005, and is planned to be placed on the web for global access in early 2006. ☀



Forecast statistics for airports in our area of responsibility. We improved upon guidance in each case in 2005.



Meteorology Education for Flight School Instructors will be coming to a NWS web site near you in 2006.

*“A new severe weather operations plan was also developed and implemented last year.”*

## Improvements Continue in Local Operations

Steven Nelson  
Senior Meteorologist

Several positive changes occurred during 2005 in the office’s forecast and warnings operations. A new standard for communicating the type and duration of hazardous weather was put into effect called VTEC, which stands for Valid Time Event Code. This coding standard was implemented in February for our short-fuse severe weather warning products and in November for our long-fuse watch, warning and advisory products. VTEC now makes it possible to define the start and end time of any hazard. Users can also track the lifecycle of an event, such as when a winter storm gets upgraded from a watch to a warning.

A new severe weather operations plan was also developed and implemented last year. Staffing levels during severe weather were increased based on the level of threat expected. Computer resources were rearranged to better facilitate rapid dissemination of warnings and spotter reports. The number of workstations to analyze data and issue severe weather products was increased from six to eight. A situational awareness display system (SADS) was also installed which has helped forecasters monitor severe weather more effectively. This new plan was put to the test during the tornado outbreak

caused by hurricane Katrina, when the office issued 89 warnings in just 5 hours. That works out to 18 warnings per hour or one warning every 3 minutes! By many accounts, the office performed admirably under pressure.

Overall information flow rose significantly from 2004, due not only to the increased amount of severe weather, but also to the new plan. The amount of severe weather statements which provide timely updates to our warnings increased by over 200% (see table below). We look forward to continued improvement in our warning operations in 2006. ☀

	2004	2005	Change
<b>Warnings Issued</b>	364	633	74%
<b>Warning Updates Issued</b>	116	352	203%
<b>Update/Warning Ratio</b>	0.34	0.59	74%

## Hydrology: Cindy & Dennis Join Forces to Set Records

Kent Frantz  
Senior Service Hydrologist

It was a wet 2005 for much of Georgia due to receiving around 110% of normal rainfall for the year. Selected locations with annual rainfall and departure amounts include: Atlanta (56.28", +6.08"), Athens (58.42", +10.59"), Columbus (57.11", +8.54") and Macon (47.43, +2.43"). During the year, we issued 104 flash flood warnings, 24 flash flood statements, 137 county flood warnings, 105 river flood warnings, 175 flood statements, 40 flood watches, and 10 flood potential outlooks.

It was a very active tropical season as well. Georgia was affected by Arlene, Cindy, Dennis, Katrina and Tammy. A

combination of Cindy on July 6 followed by Dennis on July 9-11 produced heavy rainfall over much of north and central Georgia. A north to south spiral band well east of the center of Dennis setup with continuous heavy rain over Douglas, Cobb, Cherokee, Fulton, Coweta, Fayette, Clayton and Upson counties.

Rainfall amounts of 5 to 10 inches occurred over all of Cobb county which caused major to record flooding and extensive damage to homes and businesses near creeks. Record flooding occurred on Sweetwater Creek near Austell on July 12. The gage height reached 21.8 feet which exceeded the old record of 20.0 feet on July 7, 1916. Estimates for flood-related damage were near \$17 million in 2005, with

most of it associated with Cindy and Dennis. Unfortunately, one flash flood death occurred in Fayette county with Cindy. A young male drowned after he was swept into a drainage culvert in Peachtree City

Finally, an official flood only forecast point was reestablished at Carlton which had been discontinued in 2001. Also bankfull and flood stage levels were lowered in coordination with local officials on the Chattahoochee River at West Point to improve forecast and warning services to our customers in that area. ☀

### Hydro Tally for 2005

- 40 Flood Watches
- 104 Flash Flood Warnings
- 24 Flash Flood Statements
- 105 River Flood Warnings
- 175 Flood Statements
- 137 County Flood Statements
- 10 Flood Potential Outlooks

## Systems

Richard Black  
Electronic Systems Analyst

Over the past year we have made steady improvements in our Information Technology infrastructure. Most of our major systems have gone through some sort of replacement or upgrade. This constant turnover of hardware and software allows us to keep pace with the ever-changing worlds of weather and technology.

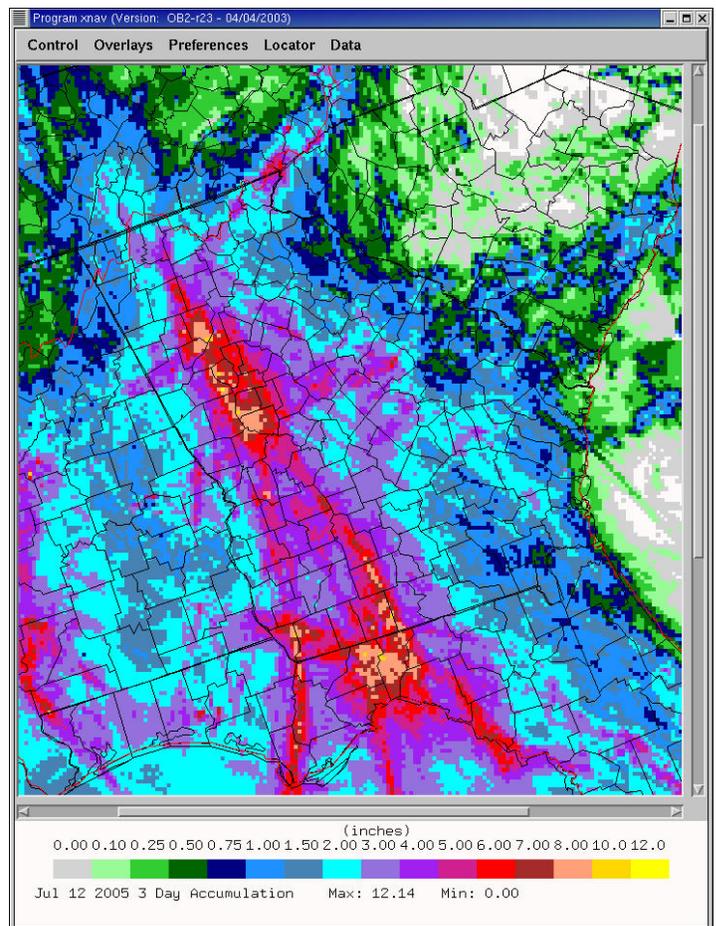
**ASOS:** Significant milestones of the Automated Surface Observing Systems (ASOS) this year included the completion of software upgrades as well as upgrades of the main computer hardware. In the coming year, we will be replacing our wind speed and direction sensors

with a static, ice-free wind system and we will be adding a new sensor the Enhanced Precipitation Identifier.

**IVR:** Interactive Voice Response System (IVR) was deployed and beta tested in 2004 and has served the public well this past year. This system provides the public with a menu driven method of selecting individual forecast products via telephone. IVR allows the public the option of listening to only the product that they want rather than the entire broadcast suite.

**AWIPS:** In 2005, AWIPS received three major software upgrades, several minor software patches. Along with these enhancements, our

(Continued on page 10)



72 Hour Rainfall Accumulation with Dennis ending at 8AM on July 12, 2005

## Systems

(Continued from page 9)

AWIPS data servers have been completely replaced with state of the art computer technology. Our Satellite Broadcast Network is now using Digital Video Broadcast technology. These advancements will provide more reliability for a smother running forecast office.

**WSR-88D Radar:** The Doppler radar received a few software upgrades this year and is scheduled for a major hardware upgrade this winter. Our radar still maintains an impressive availability rate of 98%. ☀



*Klystron used to amplify WSR-88D radar power from milliwatts up to one megawatt.*

**Interested in becoming a student volunteer? Contact Mr. Kent McMullen at the Peachtree City WFO (770-486-1133 or [kent.mcmullen@noaa.gov](mailto:kent.mcmullen@noaa.gov)).**

## Website Improvements

Terry Murphy  
Meteorologist

**R**IDGE (Radar Integrated Display with Geospatial Elements) radar has been introduced to the Peachtree City NWS website. Radar images now contain geospatial elements, such as terrain, highways, rivers, and county boundaries that can be toggled on and off. The user can choose the (combination of) reference map(s) that is most helpful in determining location. RIDGE adds the ability to overlay outlines of areas currently under warnings (such as Tornado or Severe Thunderstorm Warnings).

Other significant additions to our web page are described in the remainder of this article.

*“RIDGE adds the ability to overlay outlines of areas currently under warnings.”*

## Student Volunteers

Ken McMullen  
Senior Meteorologist

**S**tudents continued to volunteer their time in the Student Volunteer Program through 2005. High schools and colleges represented this year were Duluth High School, Westminster Christian Academy, Forest Park High School, Collins Hill High School, University of Georgia, University of West Georgia, and Georgia Tech. Two of the Georgia Tech students received college credit for spending time with us and both received A's.

The high school students were

with us for about 1 month each, while the college students were here for two to four months. Some students have been allowed to stay with us beyond those time frames because of special projects they had been completing for the office.

During their stay, the students learned about operations in the forecast office, worked on various office projects, helped some of our Program Managers, and actively participated in severe weather operations.

This program started in June of 2002, and since then, we have had 33 students come through our doors. Some have gone on to get their Masters Degree in meteorology while others have pursued careers in weather at other locations. ☀

### "Voice of the Customer" (VOC)

Customers now have a way to voice their opinion, complaint or praise, on any aspect of our products or services. A short form linked off our home page provides space for comments. The comments allow us to track our customers likes or dislikes about our services.



### Precipitation Analysis Tool

Starting with a map of rainfall amounts for the most recent day, users can use this tool to explore rainfall distribution patterns and accumulated amounts for periods of time from the past day to the last 30/60/180 days or more. This information can also be viewed as Percent of Normal, and Departure from Normal. Geospatial elements (including

county boundaries, rivers, highways, etc.) are available as needed in determining location.

### Historical Hurricane Track Tool

(provided by NOAA Coastal Services Center)

The user can easily search and display tropical cyclone data. A link on our Tropical Weather page directs the user to this interactive mapping application, which allows you to search a database, and plot the results on a map. A sample search: "show all tropical storms that have passed within 150 miles of my city/town since the year 2000."

### Virtual Tour of the Peachtree City Forecast Office

Users gain a lot of information about the forecast office via this tour, which is much like a slide show presentation. ☀

## Special Feature: Weather Communication Alliance (Adopt-a-County)

Robert Beasley  
Meteorologist

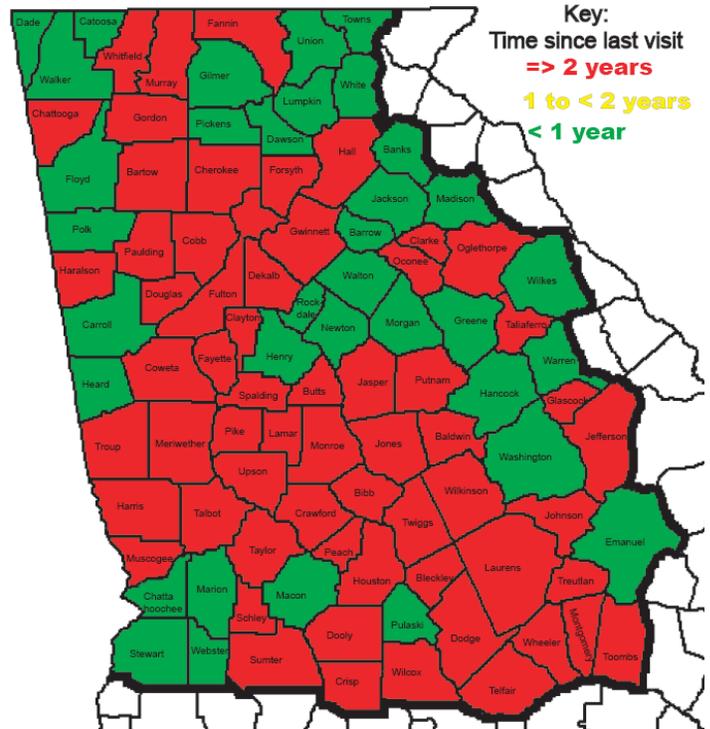
The Peachtree City, GA WFO rekindled an old program during the spring of 2005 called Weather Communication Alliance, also known as Adopt-A-County. The program involves a NWS employee meeting one-on-one with Emergency Management Directors (EMAs) and other county officials in their county. This is actually a revival of a similar program conducted by this office in the early 1990s. The main objective of the program is to establish better communications with the 96 counties our office serves. It is our intention to conduct these visits annually. By the end of 2005, 34 of the 96 counties we serve had been visited in person.

During these visits, which typically last two to three hours, the WFO employee will review a host of our products and services that we provide. Such topics include our severe weather product suite, our routine product suite, NOAA Weather Radio (NWR), the Peachtree City WFO web site, Advanced Hydrologic Prediction System (AHPS), Live Weather Briefings, EMNET, and the new Georgia mesonet. StormReady requirements are reviewed with suggestions provided as to what needs to be accomplished for the county to become StormReady or to maintain their StormReady status, if recognition is pending.

Problems and concerns of the EMAs and our office are addressed and discussed, as appropriate. A list of action

items will be maintained by our office in hopes of addressing the important problems and concerns that the EMA directors present to us during these visits. Important contact information, at both ends, is reviewed and updated as necessary so that we and the county always have important emergency contact information. Finally, recruitment of contact points in rural areas of counties are solicited with the help of the EMAs. This will provide us with better ground truth verification information during severe and winter weather situations.

We encourage EMAs to provide us with feedback on these visits so that follow up visits will be even more productive. All-in-all, we hope these visits will improve communication and cooperation with all the counties we serve so that we can provide the best products and services possible. ☀



Map of county Emergency Management Agencies visited as part of our new Adopt-a-County program (as of 12/31/2005). Our goal is to "go green" across the entire CWA by visiting every county at least once per year.

### Administrative Update

Deborah Connell  
Administrative Assistant

Due to software improvements in Sunflower Property software over the past two years, we have experienced time-savings in using the new system for office property tracking.

#### Personnel Changes

Promotions: Kent Frantz, Sr. Service Hydrologist; Leon Safford, Information Technology Officer; Trisha Palmer, Meteorologist; Eric Avila, Met. Intern; Laura Griffith, Student Intern

James Noel, Sr. Service Hydrologist transferred to the Ohio River Forecast Office and his replacement is Kent Frantz, HAS Forecaster "from next door" at the Southeast River Forecast Office.

Jeffrey Dobur, Meteorologist, transferred "next door" to the SERFC and his replacement is Trisha Palmer, Meteorologist from the Raleigh, NC.

Eric Avila transferred from the Corpus Christi Weather Forecast Office as a new Hydrometeorological Technician and was later assigned as Meteorologist Intern. ☀

#### Staffing Overview at Year's End

- 1 Meteorologist in Charge
- 1 Administrative Support Ass't
- 1 Warning Coordination Meteorologist
- 1 Science and Operations Officer
- 5 Senior Forecasters
- 7 General Forecasters
- 1 Senior Service Hydrologist
- 1 Information Technology Officer
- 1 Observations Program Leader
- 3 Hydrometeorological Technicians
- 1 Meteorologist Intern
- 1 Electronics Systems Analyst
- 3 Electronics Technicians
- 1 Student Intern

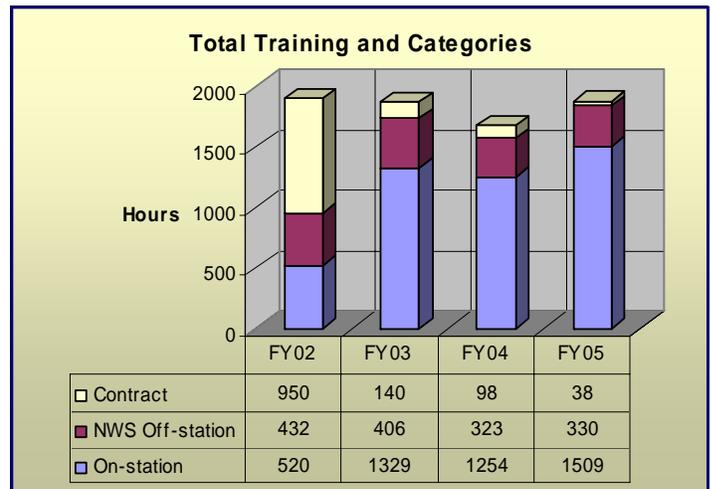
## Timely Training for 2005 Hurricane Season

Gary Beeley  
Science and Operations Officer

*“A total of 1,877 hours of training was completed...an average of about 82 hours per meteorologist and 33 hours per HMT.”*

The primary focus of training during 2005 at the Peachtree City WFO was the Advanced Warning Operations Course (AWOC). This course, produced by the Warning Decision Training Branch consisted of 30 hours of course work for each meteorologist. Situational awareness and advanced severe weather concepts/identification were the main themes of this course. Two Weather Event Simulator cases dealing with tornadic storms and hail were also completed.

The Weather Event Simulator (WES) continued to play a vital role in ongoing training. WES cases dealing with winter weather and tropical-cyclone-induced tornadoes were also conducted. Both of these cases were well-timed. A significant winter storm with freezing rain



and snow impacted north and central Georgia on January 28-29, 2005. During the months of July through October an onslaught of tropical systems affected north and central Georgia. Cindy and Katrina were especially noteworthy in regard to the number of tornadoes they produced. As a result of the WES cases dealing with these types of events, forecasters were much better prepared.

A total of 1877 hours of training was completed during FY05. This was an average of around 82 hours per Meteorologist and 33 hours per Hydrological Meteorological Technician. Nearly 80% of the training was conducted on station by means of WES, drills, teletraining, and computer-based training. The chart below shows the trend in training over the past four years. ☀

## Outreach On Several Fronts

Patricia Atwell  
Meteorologist



NWS booth at the Lithia Springs Wal-Mart in support of their Safety Month.

The Peachtree City WFO continued our active participation in outreach opportunities within north and central Georgia.

In the spotter program, classes were conducted from January through mid-March and again from September through mid-November. A total of 24 Spotter classes were held with 614 individuals attending.

During 2005, we hosted 51 office tours, allowing 729

visitors to see first-hand forecasting techniques, warning dissemination, and safety preparation. An Open House was held October 8<sup>th</sup>, in conjunction with the Great Georgia Air Show where we also had a booth. Over the weekend more than 600 people visited our office and booth. The office participated in several school presentations and career fairs, introducing students of all ages to the world of meteorology. The office staffed booths at the Atlanta Boat Show, Great Georgia Air Show, the Georgia Science Teachers Association and set up a booth at the Lithia Springs Wal-Mart as part of

their Safety Month in October, an EMA Open House, in addition to hosting several courses at the Georgia Public Safety Training Center in Forsyth - including Hazardous Weather and Flood Preparedness and the Flood Fight Course.

In 2005, Peachtree City recognized one additional StormReady county while 8 counties were re-recognized for the next three years. One county, however, lost its recognition despite several attempts to encourage it to

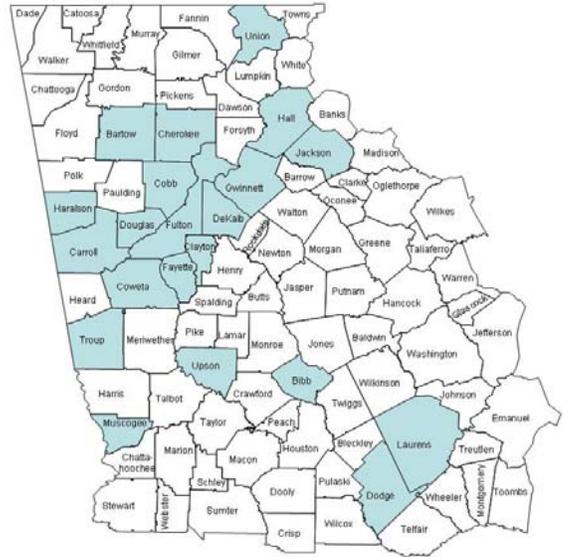
*(Continued on page 13)*

## Outreach

(Continued from page 12)

continue participating. There are now 22 (out of 96) StormReady counties within our area. Statewide there are 51 recognized counties. The StormReady program recognizes those counties that have taken specific steps in preparing their communities for the inevitable severe weather threats. This program is conducted in conjunction with the Georgia Emergency Management Agency (state

level) and the Emergency Management Association of Georgia (local level). Counties interested in becoming StormReady can learn more at [www.stormready.noaa.gov/howto.htm](http://www.stormready.noaa.gov/howto.htm). For more information, you can also contact Mr. Barry Gooden at 77-486-1133 ext. 223. ☀



StormReady Counties in the Peachtree City area of responsibility.

Date	County	Location	Strength	Path		Deaths	Injuries	Damage
				Length (mi)	Width (yds)			
6-Jul	Meriwether	1S Rocky Mt. – 0.8 SSE Rocky Mt.	F0	0.3	100	0	0	\$25K
6-Jul	Coweta	3N Haralson	F0	0.1	50	0	0	\$1K
6-Jul	Fayette	2SE Fayetteville – 2ESE Fayetteville	F0	1	440	0	0	\$2.0M
6-Jul	Henry/Clayton	2W Hampton – 3NNW Hampton	F2	9	880	0	0	\$70M
6-Jul	Henry	1W McDonough – 0.5W McDonough	F0	0.5	200	0	0	\$150K
6-Jul	Henry	4 NE McDonough – 7NE Blacksville	F1	7	300	0	0	\$25K
11-Jul	White	8SW Cleveland – 5 WSW Cleveland	F0	5	220	0	0	\$75K
29-Aug	Heard/Carol	0.3S Glenloch – 3 NE Roopville	F2	5.5	200	1	3	\$5.2M
29-Aug	Haralson	1SW Felton – 1N Felton	F0	1	75	0	0	\$5K
29-Aug	Paulding	3SW Nebo – 4WSW Nebo	F0	1	50	0	0	\$400K
29-Aug	Polk	2E Cedartown – 2N Cedartown	F1	2.8	50	0	0	\$50K
29-Aug	Forsyth	2S Silver City – 1.5S Silver City	F0	0.5	50	0	0	\$250K
29-Aug	Oconee	6SSW Bogart – 5.9 SSW Bogart	F0	0.1	25	0	0	\$10K
29-Aug	Taylor	0.5S Fickling Mill – 3NNW Fickling Mill	F1	3.5	250	0	1	\$750K
29-Aug	Lumpkin	8WSW Dahlonga – 8W Dahlonga	F0	0.9	125	0	0	\$45K
29-Aug	Peach	Ft. Valley – 4N Ft. Valley	F2	4	50	0	3	\$2.6M
29-Aug	Fannin	2S Loving – 1.7S Loving	F0	0.3	100	0	0	\$250K
29-Aug	Spalding	5N Orchard Hill – 6N Orchard Hill	F1	1	100	0	2	\$300K
29-Aug	Walton	Social Circle	F0	0.3	50	0	0	\$25K
29-Aug	Barrow	2SSW Winder – 2SW Winder	F0	1.5	100	0	0	\$150K
29-Aug	Jackson	0.5NE Braselton	F0	1	20	0	0	\$20K
29-Aug	Hall/White	1S Lula – 7NNW	F0	8	50	0	0	\$250K
29-Aug	White	3SSE Helen – 2N Helen	F2	5	300	0	0	\$3M
4-Dec	Henry	2W Stockbridge – 1W Stockbridge	F0	1	100	0	0	\$150K
28-Dec	Pulaski	Finleyson – 0.5 NE Finleyson	F0	0.5	200	0	0	\$100K
28-Dec	Laurens/Johnson	7NNE Dublin – 1ENE Lovett	F1	3	300	0	0	\$450K
28-Dec	Wilcox	5NNW Pitts – 5.5NNE Pitts	F0	2.5	50	0	0	\$100K
28-Dec	Laurens	5SSE Cadwell – 5E Cadwell	F0	0.5	50	0	0	\$1K



*National Weather Service • Weather  
Forecast Office • Peachtree City, Georgia*

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Phone: 770-486-1133  
Fax: 770-486-9333  
Email: [lans.rothfusz@noaa.gov](mailto:lans.rothfusz@noaa.gov)

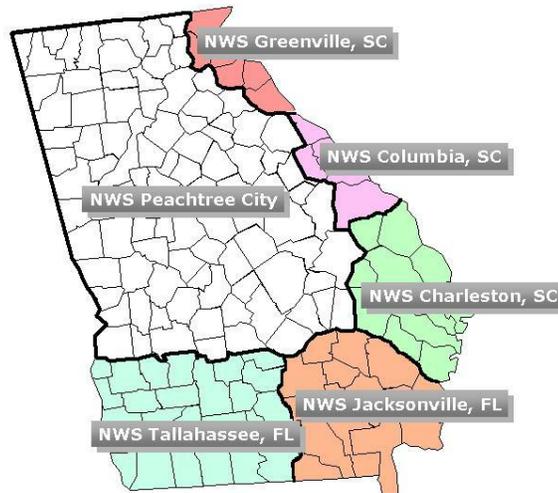
**We are your Weather Service**

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**[weather.gov](http://weather.gov)**  
**(and click on Georgia)**

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The Weather Forecast Office in Peachtree City is a field office of the National Weather Service, an agency of the National Oceanic and Atmospheric Administration, which is part of the U.S. Department of Commerce. The office is responsible for weather and water forecast and warning services for 96 counties in north and central Georgia (see map below).



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4 Falcon Drive  
Peachtree City, GA 30215