

# Shareholders' Report 2006

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



## 2006: Tornado Event Bookends!

Lans P. Rothfusz  
Meteorologist in Charge

One of my former choir directors once said, "The audience will only remember if you begin and end a song well. What happens in the middle doesn't matter all that much." If his tongue-in-cheek logic were applied to the weather in 2006, the year might be remembered as a year of tornadoes. A multi-tornado event occurred on January 2nd and a single tornado touched down on December 31st. Despite the perception this might give the "audience," it was a rather

quiet year for severe weather compared to previous years (see the summary article below).

Even though the year was relatively calm, your Peachtree City Weather Forecast Office (WFO) of the National Weather Service (NWS) pushed forward on several fronts. Our efforts remained focused on delivering the best quality service for the \$2.80 each U.S. citizen contributed to our budget. You are reading our sixth annual report on how your tax dollars are being utilized for the public good. You will see examples of

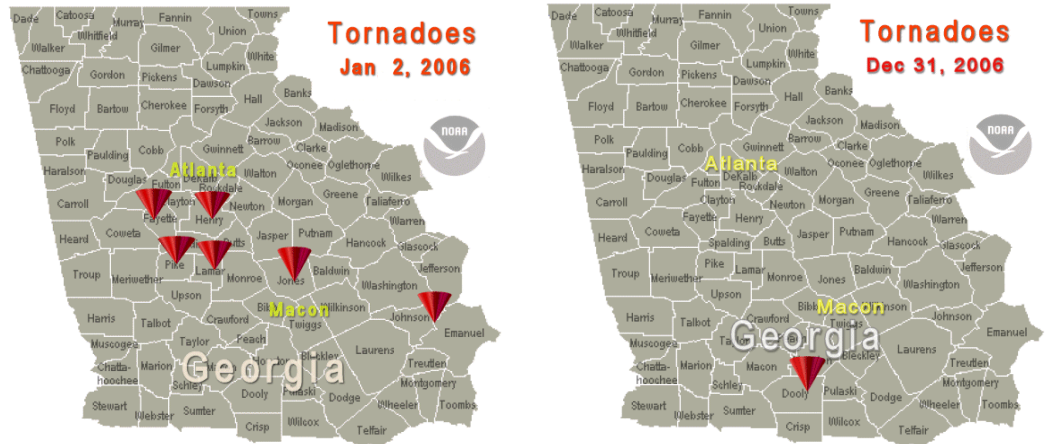
successes, as well as areas we recognize work needs to be done.

Throughout the document, however, I hope you will see the professionalism and dedication of the hard-working people of the Peachtree City WFO. It is my honor and pleasure to be associated with such a fine group of people. I couldn't ask for a better crew to provide you the information you need and to protect your life and property from the hazards of weather and water. Thank you for supporting us, as well! Enjoy the report! ☀

### Big News Items of 2006

- No deaths due to severe storms for the first time since 2001.
- HotSeat weather simulation debuts at national conference in Atlanta.
- President Carter helps make COOP award presentation.
- Weather Radio becomes "All-Hazards Radio."

*In Fiscal Year 2006, Congress appropriated \$848,200,000 to the NWS. This equates to an "investment" of \$2.80 per U.S. citizen.*



Six tornadoes that started the year on January 2nd (left) and one tornado that ended the year on December 31st (right).

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## Severe Weather Summary for 2006

Robert Beasley  
Meteorologist

The year 2006 proved to be one of the most unusual weather years for North and Central Georgia in some time. For the first time in at least four years, North and Central Georgia were

not significantly impacted by any land-falling hurricanes or tropical storms. As a result, none of the 13 tornadoes observed during the year were associated with tropical activity. This is partially the result of an El Nino event that developed in the Pacific Ocean. With the lack of tropical activity

throughout the year and the overall development of a mild to moderate drought in much of the area during the late spring and summer, the amount of weather-related damage was down considerably from previous years. In addition, no significant winter storms were

(Continued on page 3)

### Top 25 North and Central Georgia Weather Events for 2006

	Date	County	Cause	Damage	Deaths	Injuries	Cost
1	31-Jul	Rockdale	Heat Exhaustion	A 15-year old high school football player died of heat exhaustion the day following an afternoon football workout at Rockdale County High School.	1	0	0
2	15-Nov	Chattahoochee	Tornado	F1 tornado caused considerable damage to warehouses and six homes on Ft. Benning military base.	0	9	500K
3	2-Jan	Pike (Hollonville)	Tornado	F3 tornado on ground for three miles. Five homes extensively damaged or destroyed. One home moved sixty feet off its foundation. Two vehicles were thrown 250 yards.	0	3	750K
4	8-Apr	Polk (Rockmart)	Tornado	F2 tornado traveled approximately 3 miles. Over 24 homes destroyed. Five coal cars blown off railroad track. Hundreds of trees and power lines were blown down.	0	1	450K
5	8-Apr	Polk (Cedartown)	Tornado	F0 tornado traveled 5 miles. About a dozen homes damaged. One person injured when a tree fell on a mobile home.	0	1	350K
6	31-Dec	Dooley	Tornado	F2 tornado touched down just west of Unadilla and traveled 0.5 miles. Minor to moderate damage reported to several homes, signs, an irrigation system, and large pecan trees. Three mobile homes destroyed.	0	1	350K
7	8-Apr	Cobb	Tornado	F1 tornado traveled 7 miles. At least 150 homes sustained damage (88 of which received major damage or were destroyed).	0	0	6M
8	19-Apr	Cobb	Hail	Hail up to the size of golf balls reported across the county.	0	0	5M
9	2-Jan	Fayette	Tornado	F2 tornado on the ground for 3 miles. Several homes received moderate to major damage in the Lees Mill area.	0	0	2M
10	2-Jan	Clayton	Hail	Hail sizes ranging from quarters to golf balls were reported.	0	0	2M
11	25-May	Forsyth	Hail	Golf ball size hail was reported.	0	0	1.8M
12	8-Apr	Fulton	Tornado	F1 tornado tracked 11 miles (Mountain Park to Alpharetta). At least 149 homes received moderate to serious damage. Some were a total loss.	0	0	1.5M
13	5-Aug	Fayette	Lightning	Lightning struck several homes in Fayetteville. Two caught fire and were total losses.	0	0	665K
14	8-Apr	Cherokee	Thunderstorm Wind	35 homes sustained minor to moderate damage along a 2-mile wide path in Canton and Woodstock	0	0	650K
15	19-Apr	Carroll	Hail	Hail up to the size of tennis balls was reported (Temple to Whitesburg).	0	0	600K
16	19-Apr	Troup	Hail	Hail up to baseball sized was reported. Roofs of homes sustained significant damage. (Hogansville to Mt. Ville)	0	0	550K
17	22-Jun	Gwinnett	Lightning	Lightning damaged apartments and a home in Norcross.	0	0	550K
18	22-Jun	Coweta	Hail	Hail up to the size of golf balls was reported in Newnan.	0	0	540K
19	2-Jan	Henry	Tornado	F1 tornado 3 miles north of McDonough traveled 1000 yards. Damage to several homes, a motel, and structures at a campground.	0	0	500K
20	15-Aug	Pickens	Lightning	Lightning struck Big Canoe Golf Shop in Jasper. The building was a total loss. Several other buildings were also damaged.	0	0	500K
21	26-May	Oconee	Hail	Hail ranging in size from pennies to golf balls was reported.	0	0	470K
22	2-Jan	Pike	Hail	Golf ball to softball size hail was reported.	0	0	400K
23	20-May	Gilmer	Hail	Hail up to the size of oranges was reported (Ellijay to Marion). At least 70 homes, 45 vehicles, and two pieces of county fire fighting equipment sustained significant damage.	0	0	400K
24	8-Apr	Banks	Tornado	An F0 tornado touched down near Five Points and I-85, completely destroying one chicken house and removing another from its foundation.	0	0	350K
25	19-Apr	Harris	Hail	Hail up to the size of baseballs was reported (Pine Mountain to Waverly Hall). Roofs of homes sustained damage.	0	0	350K

## Severe Weather 2006

(Continued from page 1)

observed during the year as one of the warmest years on record was observed for the U.S. as a whole. Nonetheless, there were several significant and more traditional severe weather events throughout the year.

A strong storm system with unseasonably warm temperatures produced several tornadoes on January 2nd. Another fairly traditional severe weather and tornado outbreak occurred on April 8th. The summer was unusually quiet with only 31 warnings issued during the normally very busy convective month of July. This was the lowest number of severe convective warnings issued by this office in July since 1995. August proved to be a little busier than July, especially with respect to lightning events. With the lack of any tropical activity, the fall months remained relatively quiet. One severe weather outbreak was observed on November 15th with a tornado affecting Ft. Benning. The last week of the month brought two rounds of severe weather to rural parts of central Georgia; one on Christmas and another on New Year's Eve, on which a tornado was occurred in Dooly county.

Overall, 378 severe convective events and 9 flash flood events were recorded during the year, contributing to \$32M in estimated damages. These figures represent a sharp decline from the same figures of 512 and 61 observed in 2005. The 378 severe convective events were also safely below our area 11-year average of 433. Only spring

2006 Deaths and Injuries		
Event	Deaths	Injuries
Tornado	0	15
T-storm Wind	0	2
Hail	0	0
Lightning	0	1
Flash Flood	0	0
Heat	1	0

was above average. The seasonal breakdown and 11-year normals for severe convective events are as follows: January-March (48/61), April-June (253/233), July-September (64/111), October-December (13/28).

Thirteen tornadoes affecting 17 counties were confirmed within our area during 2006, down from the all-time record of 28 observed in 2005, but still above the 11-year average of 12. In sharp contrast to 2005, none of the tornadoes were associated with land-falling tropical storms or hurricanes. The tornadoes resulted in \$13.34M in damages.

### Deaths and Injuries

Only one weather-related fatality was recorded during 2006: A young man's death in Rockdale County on July 31st reminded us of the dangers of summer heat in the South. No deaths resulted from tornadoes, lightning, or flash floods. This was the lowest number of weather-related

2006 Weather-Related Damage	
Phenomenon	Losses
Lightning	\$4,830,000
T-storm Wind	\$3,460,000
Hail	\$1,538,000
Tornadoes	\$1,334,000
High Winds	\$130,000
Strong Winds	\$91,000
Flash Floods	\$23,000
Heavy Rain	\$15,000

deaths since 2001. The number of weather-related injuries also fell drastically from previous years. Only 18 weather-related injuries were observed during 2006, the lowest number ever observed by our office. Tornadoes topped the list of weather-related injuries with 15. This was followed by two thunderstorm wind and one lightning-related injury. The adjacent table details the distribution of weather-related deaths and injuries in 2006.

### Property Damage

Weather-inflicted property damage (\$37.27M) during 2006 was the lowest observed in our area since 2002. Hail topped the list of weather-related property damage at \$15.38M. This damage figure was obtained from an empirically-derived formula relating hail size and areal coverage to home and property values. Actual property damage from hail may have reached or exceeded this value because of the predominance of hail events in the year (287 events). Hail damage figures are rarely available to us.

Tornadoes accounted for the next highest damage costs with \$13.34M, well below the \$87.84M observed during the record 2005 year. Lightning was next with \$4.83M, followed by thunderstorm winds at \$3.46M, strong winds, flash floods, and heavy rain.

In 2006, there were only 30 weather-related events with estimated damages >\$250,000, compared with 70 such events in 2005. ☼



Photo of the Pike County F2 tornado of January 2, 2006. (Photo courtesy Doug Rounds and Ken Cook, FOX5-TV)

*“No deaths resulted from tornadoes, lightning, or flash floods. This was the lowest number of weather-related deaths since 2001.”*



Damage from an F1 tornado in Jones County on January 7, 2006.

## 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."*

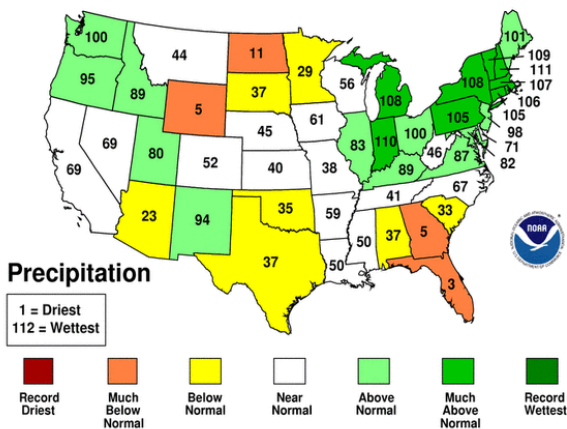
**W**arm and dry conditions prevailed for much of 2006. January began with unseasonably mild temperatures. Departures from normal ranged from +6.7° (F) in Atlanta to +7.3° in Columbus. This was the 9th warmest January on record in Atlanta, and the warmest since 1989. Although, precipitation was slightly above normal in Atlanta, deficits were recorded in Athens, Columbus,

and Macon for the month. Macon received just 40% of their average total. In February, temperatures cooled, resulting in below normal averages at all four locations. March monthly temperatures moderated to near average; however, abnormally dry conditions returned, resulting in hefty rainfall deficits. Departures ranged from 2.45" below normal in Atlanta to +3.66" in Macon. Dry conditions continued in April and unseasonably warm temperatures were common, as departures ballooned again and ranged from +4.2° at Macon to +5.2° at Columbus.

Atlanta, the most July occurrences since 1996. Columbus reached 99° on the 4th, breaking the old record of 98°. Deficit rainfall at Atlanta (-3.81") and Columbus (-2.18") continued in July. In August, more frequent thunderstorms brought some relief. However, not all benefited. Atlanta, for example, recorded its wettest August since 1967 (8.66"), but Macon received only 2.28" which was 60% of normal. Again, temperatures were well above normal in all four cities with departures ranging from +2.1° in Atlanta to +2.8° in Columbus.

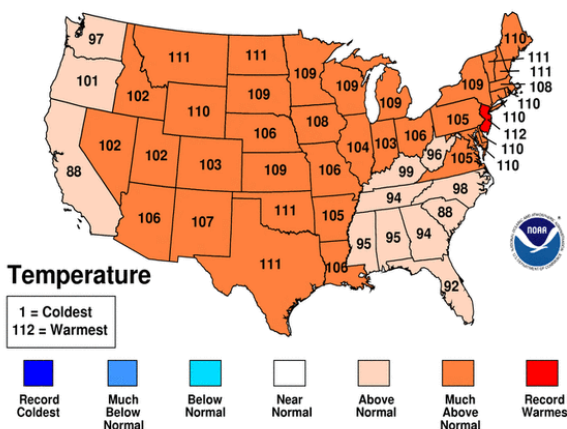
### January-December 2006 Statewide Ranks

National Climatic Data Center/NESDIS/NOAA



### January-December 2006 Statewide Ranks

National Climatic Data Center/NESDIS/NOAA



May monthly temperatures were near average. However, an unseasonably cool ten days during mid-month offset an early heat wave in late May. Both Columbus and Macon reached 90° or more during the final twelve days. This heat was also combined with rainfall deficits of 1.69" at Athens and 1.46" at Macon. The heat waves continued through June, as 90° or higher was reached 24 times in Columbus. Also, temperatures reached or exceeded the century mark on the 21st through 23rd in Macon, and on the 21st and 22nd in both Athens and Columbus. This oppressive heat tied records of 100° on the 21st and 22nd in Columbus, and 102° in Athens on the 22nd. Thunderstorms near Atlanta from the 24th through 26th allowed the capital city to record its first surplus of rainfall (+2.17") in four months. The prolonged heat, accompanied by sparse rainfall elsewhere initiated a moderate drought for much of Georgia by mid-June.

September and October monthly temperatures were below normal in all four locations. Additionally, August was drier than average except at Columbus, which recorded a modest 0.42" surplus. A more active storm track brought near or above normal precipitation. November, also provided near to above normal rainfall, while experiencing near-average monthly temperatures. However, two unusually warm periods did occur. On the 10th, Athens broke a record high temperature with 81°, while Macon tied their record at 81°. Then, on the last day of the month, both Athens (76°) and Columbus (78°) came within 1° of their records. In December, a high amplitude wave pattern led to wide variations in temperature. The coldest air in two years arrived on the 8th, resulting in a record low temperature of 16° in Macon on the 9th. Afterwards, temperatures moderated to record and near record highs. On the 19th, Columbus reached 77°, setting a new record for the date. Above normal temperatures continued through late December.

In July, the mercury topped 90° or more on 23 days in At-

Precipitations charts showing the national variation in rainfall & temperatures for 2006.

## Forecasters' Performance Still Outdoing the Computers

Trisha Palmer  
Meteorologist

**M**eteorologists at the Peachtree City WFO are constantly undergoing training in order to improve our forecast skill. Improvements in computer model guidance are made routinely, and thus, it is a testament to our skills that despite such improvements, our own forecasts continue to surpass the models (see adjacent charts).

In 2006, our forecasters beat the models in temperature forecasting, and we posted the best scores for the past several years for five sites across our forecast area (Atlanta, Athens, Rome, Macon, and Columbus). Precipitation forecasts did decrease in skill slightly from 2005; however, model skill

decreased more than that of the forecasters. This decrease may be due, in part, to the recent drought. Especially in the summertime, it is common to forecast low chances of precipitation for isolated afternoon thunderstorms. The widespread drought limited the formation of these storms more than expected, which resulted in a consistent but slight over-forecasting of summer precipitation by the models and our forecasters.

We also compare our forecasts to observed (actual) temperatures. Our goal is to forecast high and low temperatures within 3° of the actual high and low. The bottom chart shows that we achieved this goal 82% of the time for the first 12 hours of each forecast in 2006—our best performance since such records have been kept. ☀

## Weather Radio Purpose Expands

Frank Taylor  
Observations Program Leader

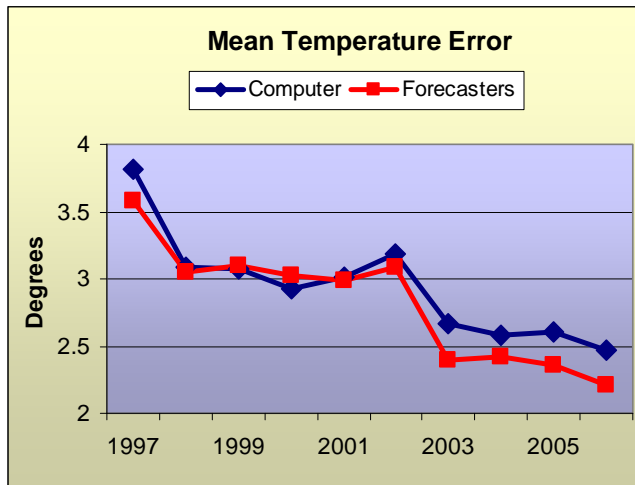
**W**FO Peachtree City added several features to NOAA Weather Radio (NWR) in 2006, allowing us to improve our service for alerting you to both natural and man-made emergencies.

Working in conjunction with the Federal Communication Commission's Emergency Alert System, NWR became an "all hazards" radio network by adding notifications of man-made emergencies (e.g., chemical spills, hazard material releases, child abductions, etc.) along with the usual notifications of tornadoes, hurricanes, etc. This new capability was made possible by installing "HazCollect."

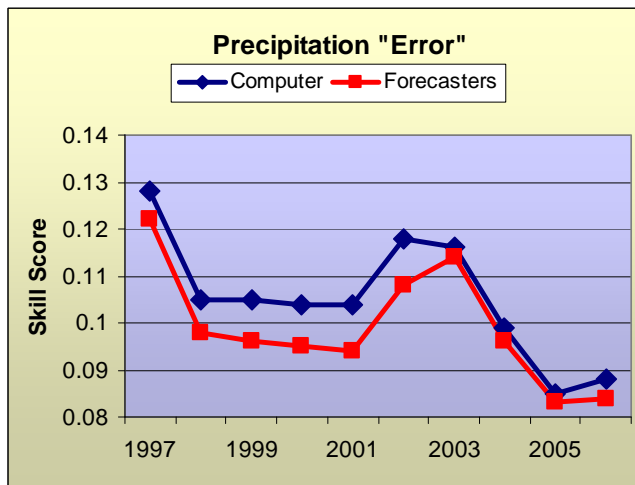
Residing in the NWS communication system, HazCollect connects to the internal messaging systems of emergency management, law enforcement, and Department of Homeland Security officials so that, in the event of a non-weather disaster, those officials can rapidly disseminate an emergency message across their system and into the weather — *ahem* — **all-hazards** radio.

Other activities in the NWR-All Hazards program this past year include:

- Installing, configuring and testing new text-to-speech capacities.
- Installing and enabling HazCollect formatters.
- Processing two child abduction alerts. ☀



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.

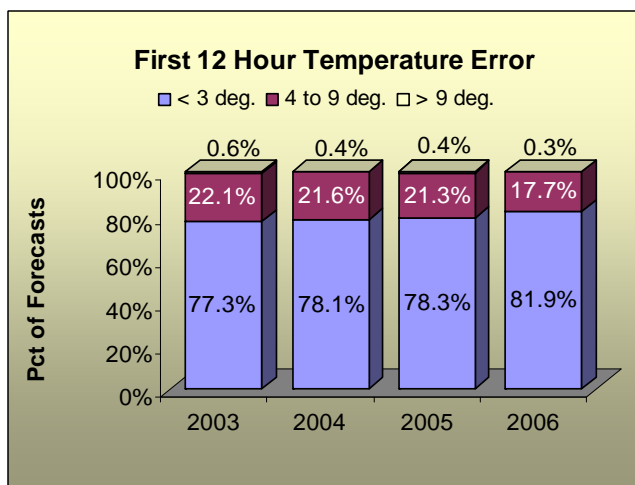


Chart showing combined distribution of first period (first 12 hours) forecast temperature errors for Atlanta, Athens, Rome, Macon, and Columbus.

## Severe Weather Performance for 2006

Barry Gooden  
Warning Coordination Meteorologist  
& Robert Beasley  
Meteorologist

During 2006, WFO Peachtree City issued 682 severe convective warnings, (682 counties were warned). This is a decrease of 136 warnings from 2005, well below the 11-year, 1995-2005 average of 763. For the second consecutive year, April proved to be the month during which the most warnings were issued (210), followed closely by May (186). These two months accounted for 59% of the warnings issued during the year.

*“Overall verification scores for 2006, with the exception of lead time, were the best since 2003.”*

February through March, and the entire summer, were unusually quiet with the number of warnings issued well below the 11-year average. Only 31 warnings were issued in July 2006, which was only 28% of the 11-year average, and also the lowest number of warnings ever issued in July for our office. The 22 flash flood warnings issued in 2006 was a dramatic drop from 104 in 2005, thanks to limited tropical activity.

	Exclusive Verification Method*			Inclusive Verification Method**
	Svr Tstm	Tornado	Flash Floods	Svr Tstm & Tornado
<b>Warnings Issued</b>	618	64	22	682
<b>Warned Events</b>	250	6	4	288
<b>Unverified Warnings</b>	311	52	15	324
<b>Unwarned events</b>	110	11	5	89
<b>Total Events</b>	360	17	9	377
<b>POD</b>	0.694	0.353	0.444	0.764
<b>FAR</b>	0.489	0.813	0.682	0.475
<b>CSI</b>	0.417	0.140	0.228	0.452
<b>Lead Time (min.)</b>	7.8	3.8	7.7	8.8

**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.

There were 64 tornado warnings, just a little more than half of the amount issued in 2005 (104). Again, the drop in this figure was due to the lack of tropical cyclone activity in 2006. A high percentage (65%) of the tornado events occurred during the cold season months of November, December, and January. The distribution of tornado warnings for 2006 is as follows: January (30), March (2), April (16), May (7), October (6), November (3).

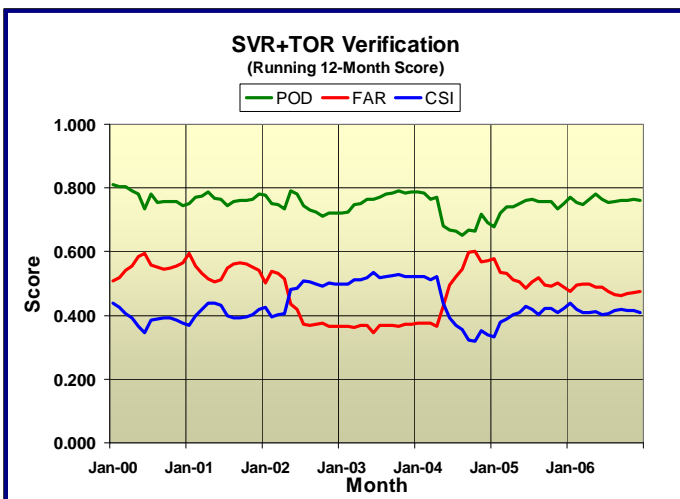
the percentage of warnings not verified, decreased from 0.489 in 2005 to 0.475 in 2006. The optimum FAR is 0.00.

The Critical Success Index (CSI), a combination of the POD and FAR, improved from 0.437 in 2005 to 0.452 in 2006. The optimum CSI is 1.00.

The estimated average lead time (the time between warning issuance and first damage report) dropped from 10.4 minutes in 2005 to 8.8 minutes in 2006, largely due to fast-forming events in June–August during which the average lead time was four minutes or less.

Overall verification scores for 2006, with the exception of lead time, were the best since 2003. The Probability of Detection (POD), which measures our ability to issue warnings before damage occurs, increased from 0.752 in 2005 to 0.764 in 2006. The optimum POD is 1.00. The False Alarm rate (FAR), which provides

Skill scores using the conventional method and a stricter, exclusive method are shown in the table above. ☼



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

## Coop Program Report

Nathan Mayes  
Hydrometeorological Technician

**O**ur Cooperative Weather Observers continue to support the longest-standing weather observation networks in the nation. This is the result of the dedication and dependability of some very special people! The following length of service awards indicate the level of commitment by these people and institutions. Individual awards given in 2006 include:

45 Years

Mr. George Fowler (Dick Hagemeyer Award)

15 Years

Mr. William Kinsland (Sautee)

10 Years

Mr. L.G. Scott (Buena Vista)  
Jack & Martha Beach  
(Winterville, Jefferson, Monroe)

Institution Awards were:

75 Years

Blairsville (University of Georgia  
Ag & Research Station)

50 Years

Sandersville (Radio Station  
WSNT)  
Eastman (Georgia Forestry  
Commission)  
Plains (University of Georgia  
Southwest Ag & Research  
Station)

And finally, a special thanks to President Jimmy Carter for helping WFO Peachtree City present the 50 year award to the Cooperative Observer(s) at our station in Plains, GA (see photo). ☀

### Coop Program Log for 2006

- 14,877 travel miles.
- 185 station visits.



President Jimmy Carter assisting in presenting a 50-year award in Plains, GA. Picture are (left to right) WFO Coop Program Manager Nathan Mayes; Southern Region Coop Program Manager Mike Asmus; President Carter; SW Research and Education Center Supt. Stan Jones; Dr. Steve Brown, Asst. Dean, UGA Agriculture and Environmental Science Dept.; and WFO Science and Operations Officer Gary Beeley.

## IMET Goes West - Twice!

Brian Lynn  
Meteorologist/IMET

**T**he 2006 spring and fall fire weather seasons in Georgia were quite active. This primarily was due to a dry spring season that ran into early June along with the normal dry periods we experience during the fall. A total of 43 Red Flag events occurred in 2006 that required the issuance of 2,555 county warnings. In other words, an average of 59 of our 96 counties were affected by each Red Flag "event."

Our Red Flag warnings have shown increasing improvement from 2003 to 2005. In 2006, national goals were set for Probability of Detection (POD) and Lead Time. These goals were set at 0.86 for POD and 10.2 hours for Lead Time. In

just our fourth year of Red Flag verification, our POD was 0.95. A perfect score would be 1.00. Our False Alarm Rate (FAR) was 0.18. A perfect score would be 0.00. The average Lead Time for all warnings was 13.4 hours. These are excellent numbers for our forecast area.

In August, Brian Lynn traveled to Klamath National Forest in California as an Incident Meteorologist (IMET) trainee on a wild land fire. After five days, he was certified as an official IMET and stayed on the fire solo for another nine days. In September, he was sent to the Boise (ID) National Forest for two weeks to relieve the IMET that was there. Peachtree City's other IMET trainee, Kent Frantz, went to Texas for twelve days in August to help the Texas Forest Service in support of wild land fires across that state. ☀

## Upper Air

Mike Leary  
Hydrometeorological Technician

**L**aura Griffith, one of our two student interns, won the 2006 Jim Blair Upper Air Award. This award was named for one of our own who passed away in 2004 and who showed tremendous passion for the job. The competition tests the ability of an individual to prepare a weather balloon to successfully carry a data collection instrument into the upper atmosphere. In 2006, we launched almost 800 instruments in support of numerical models, hurricane predictions, and severe weather forecasting. ☀



Fire at Happy Camp, California, where we sent our Incident Meteorologist to provide critical Fire Weather support.

**Know someone 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)).**

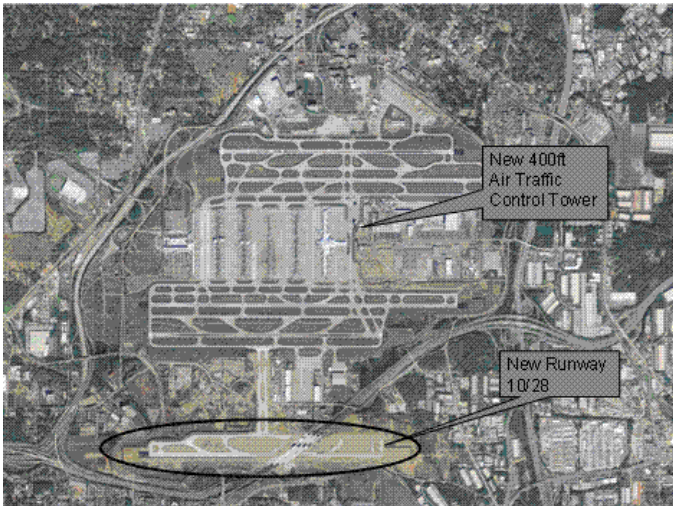
## Hampton CWSU Adapts to Airport Changes

Dr. Chip West  
CWSU MIC

Atlanta Hartsfield-Jackson International Airport opened its fifth runway in May of 2006, allowing it to land over 140 aircraft an hour. In addition to the new runway, a new 400' air traffic control tower was built to allow the controllers to see the new runway, which was not possible from the old and shorter tower. Prior to the new runway, Atlanta's peak volume during the day was limited to near 120 aircraft an hour during perfect weather conditions, and during times of poor weather they could only land about two-thirds that num-

ber, which caused significant flight delays. With the opening of the new runway, they are able to land almost all the air traffic demand, even during times of less than ideal weather conditions.

Center Weather Service Unit (CWSU) support to the FAA at the airport has changed slightly, becoming less focused on weather that will reduce their landing rate, to watching weather that will put the new tower in the clouds (see article below). The CWSU continues to keep severe weather—such as thunderstorms that may close the airport or cause safety issues—its top priority. ☀



Aerial photo of Atlanta Hartsfield-Jackson International Airport showing the location of the new runway (circled).

## Aviation in the WFO

Vaughn Smith  
Meteorologist

It was an interesting year for the aviation program. The biggest news in the weather service for 2006 was the possible reorganization

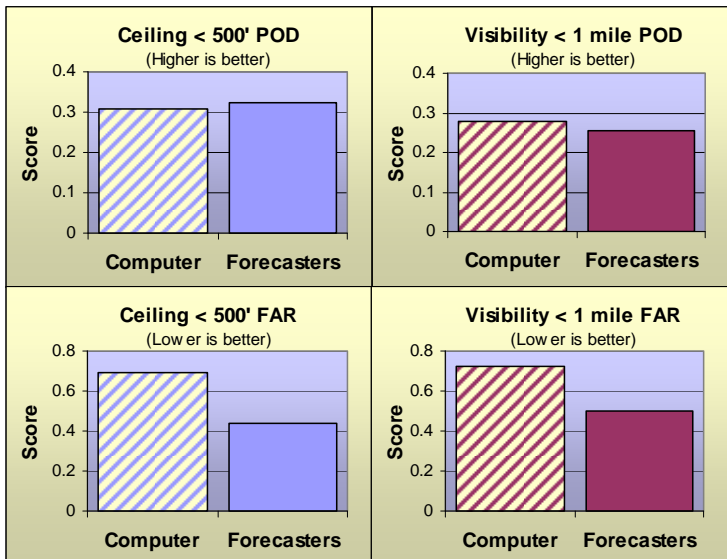
of the CWSU (Center Weather Service Unit) program. Currently the NWS provides the FAA (Federal Aviation Administration) with 84 meteorologists that work in 21 of their centers providing specific Aviation Weather forecast. The FAA has asked the NWS to reduce costs and increase support to the National Air Space. To meet that request, the NWS is working on a plan to move these aviation forecasters to the nearest NWS office and continue to provide and improve the level of service to which FAA has grown accustomed.

create a smooth transition to the new FAA/NWS plans, should they be implemented.

Another major event for the Peachtree City office was the opening of the new tower at Hartsfield-Jackson International Airport. The new tower operations began in June of 2006 and is over 400' tall. This has created challenges for the aviation forecasters in that, whenever the tower has clouds below 500', tower visibility becomes the official surface visibility. We have been trying to keep the tower height in mind while creating good forecasts for the controllers and pilots that use our information.

The Peachtree City NWS office has been preparing for this possible transition by initiating and participating in a forecaster exchange program. Three forecasters from the local FAA facility and two forecasters from the Peachtree City office have been fully trained to cover duties at the other office. This experience will be instrumental in helping

In all but one category for 2006, the Peachtree City forecast office beat the GFS Model Output Statistics when forecasting ceilings at or below 500', and visibilities at or below one mile (see charts at left). ☀



Forecast statistics for the seven airports in our area of responsibility. For Probability of Detection (POD), higher scores are better. For False Alarm Rate (FAR), lower scores are better. We improved upon computer model guidance forecasts in each case except our POD for visibilities < 1 nautical mile (top right chart).



## Hydrology: Generally, a Quiet Year

Kent Frantz  
Senior Service Hydrologist

It was definitely a drier year during 2006 for Georgia compared to recent years. This was due to a pattern change in which below normal rainfall prevailed from spring through fall. Georgia received 50 to 90 percent of its normal annual rainfall, with a few spots in north Georgia near normal. Consequently, a moderate to occasionally severe drought developed over areas of the state in June and gradually diminished by late November (see page 4).

Active months with the most hydrologic impacts were in January, February, March and

November. The greatest annual rainfall of 60 to 70 inches occurred on the Tennessee Valley Divide ridge line from north of Dawsonville to Helen and Hiawassee. In this area on June 25th, up to five inches of rain fell in three hours, causing the most notable flash flood event of the year in Dawson County.

Georgia had a minimal tropical season this year. Tropical storms Alberto in mid-June and Ernesto in late August primarily affected the eastern portions of the state with heavy rain.

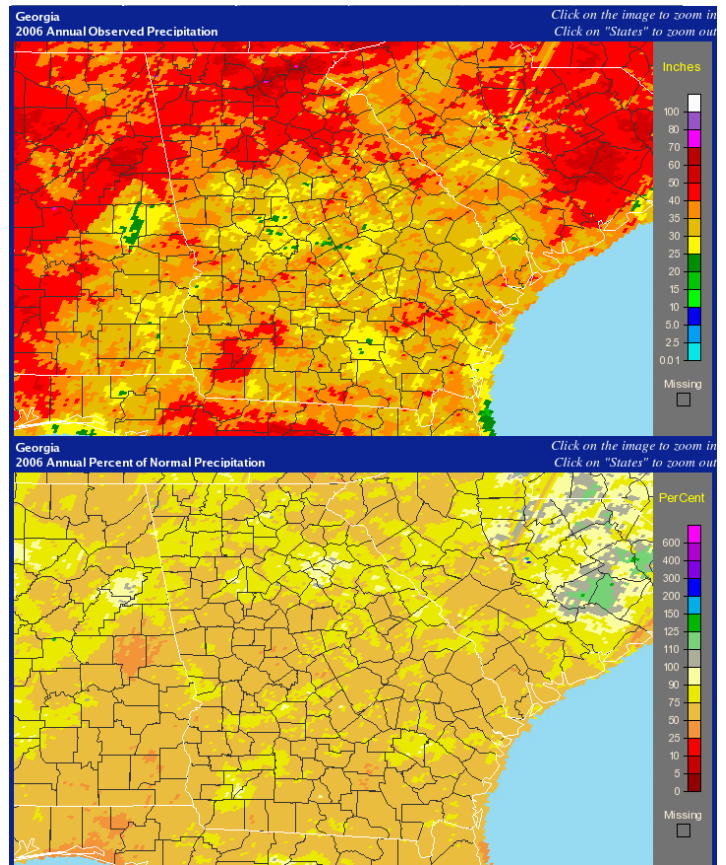
Extensive work was done updating the hydrologic database in 2006. This included forecaster familiarization visits to about 50

stream gage locations and adding hundreds of mesonet observation sites with one-hour rain gage data. This was done to create a better comparison of radar precipitation estimates with hourly rainfall readings. These "bias corrected" rainfall estimates are now being used for improved warning decision-making and are available to customers through our web site. ☀

### Hydro Tally for 2006

- 19 Flood Watches
- 21 Flash Flood Warnings
- 12 Flash Flood Statements
- 22 River Flood Warnings
- 80 Flood Statements
- 5 Flood Potential Outlooks
- 12 Drought Information Statements

For an in-depth look at the Dawson flood, go to [weather.gov/atlanta/html/dawson62506.shtml](http://weather.gov/atlanta/html/dawson62506.shtml)



Total observed precipitation for 2006 (top image) and normal precipitation for that same period.

## Forecast Operations See Improvements

Steve Nelson  
Science & Operations Officer

Forecast operations and services showed continued improvement in 2006. One noteworthy change was the implementation of transmitter-specific forecasts for NOAA Weather Radio (NWR). Previously, NWR forecasts were based on zone forecasts, which did not always reflect the expected conditions in the broadcast area. Also, since the format of zone forecasts is strictly defined, there was no flexibility for shortening the NWR forecast.

New NWR forecast products were developed by sampling the forecast grids only within the broadcast area for each transmitter. Phrasing of the 3 to 7 day forecast was also simpli-

fied. The result was a clearer and more accurate forecast product for NWR listeners.

Future plans for our forecast operations include the addition of hazardous weather grids, such as the probability of tornadoes, damaging winds, flooding, and dangerous fire weather conditions. A real-time grid monitor will also be installed to alert forecasters when the forecast is going "off-track".

Another long-term goal is the development of performance support software that searches a database of past weather conditions and events and finds matches to the current pattern. The software would then alert the forecasters, if needed, to any high-impact events that occurred on "days like this". ☀

	2005	2006	Change
<b>Warnings Issued</b>	582	485	-97
<b>Warning Updates Issued</b>	399	425	26
<b>Update/Warning Ratio</b>	0.69	0.88	28%

## Systems in a Constant State of Improvement

Richard Black  
Electronic Systems Analyst

This past year our core warning systems received several major upgrades or replacements. In spring, our Doppler radar was upgraded with the latest hardware and software technology. Ultimately, this will improve overall system performance. AWIPS, our main warning and dissemination system, also received upgrades. These enhancements enrich our operations to provide the best service possible.

**WSR-88D Radar:** Previously, our radar was engineered with proprietary hardware and software. Proprietary systems are reliable but difficult to expand or update. Over this past spring, most of our Doppler radar receiver was replaced. In

addition, we have completely replaced the operating system and control & monitoring software. Our upgraded system is mostly commercial-grade hardware utilizing modern computer component technology with a few specialized interfacing computer boards that join the legacy receiver with the new receiver. Antiquated system software was replaced with open source Linux along with modular applications that run under the control of the Linux kernel. These improvements will provide greater detail in reflectivity and expand product selections.

**AWIPS:** In 2006, AWIPS received several major software upgrades and several minor software patches. Along with these software enhancements,

two new high-performance data servers and improved network switching capabilities were gained by adding gigabit Ethernet technology. These improvements reduce processing time and provide system redundancy while expanding functionality.

**CRS:** The Console Replacement System (CRS) is responsible for delivering products to NOAA Weather Radio and plays a key part in our severe weather operations. Some improvements to this system were made this year. Applications software, for example, was upgraded in the fall along with an expanded product database. ☀



*New data servers for our primary operations computer system, AWIPS.*

## Website Grows

Terry Murphy  
Meteorologist

For those wanting to experience the challenge of issuing tornado or severe thunderstorm warnings, we introduced a warning decision simulator called "NWS HotSeat". This game-like Java applet allows you to use Doppler Radar data to decide when and where to "issue" warnings. Take part in portions of four actual severe weather events. Check your score at the end of each to see how well you've done. (See feature story on next page.)

A major change has been made in how climate information is made available. Access to ac-

tual, normal and record high or low temperatures, precipitation, and much more is made available via a single interface. Make a few clicks and submit your request for data.

Use tabs across the top of the interface to access other climate resources, such as the National Climatic Data Center, or NOAA's Climate Prediction Center. Other tabs provide astronomical data such as sunrise/sunset times and moon phases. Don't miss the "NOWData" tab that allows you to research in-depth for things like the amounts and dates of highest daily rainfall at many locations across the state.

A comprehensive online User's Guide has been added that describes products and services provided by the Peachtree City Forecast Office.

Changes to our front page make it easier to access products. A feature called "Product Picker" arranges products in a list by name alphabetically. Three clicks using this feature gets you the full text of the latest version of any product, along with links to older versions. We also added thumbnails that are quick links to the "Hazardous Weather Outlook for North and Central Georgia", the Peachtree City 88-D radar, and a satellite image. The thumbnails themselves show current data. ☀

### New Web Features for 2006

- User's Guide
- Product Picker
- Quick-access thumbnails on front page (HWO, Radar, Satellite)
- Climate interface
- HotSeat

## Special Feature: HotSeat

Kent McMullen  
Senior Meteorologist

In January of 2006, the American Meteorological Society (AMS) held its annual convention in Atlanta. The day before the convention began, an exhibit called WeatherFest was held. This was generally for school-aged children; however, anyone could attend. The NWS in Peachtree City had several booths and, at one of the booths, we created something interactive for children that would also be an educational experience.

Through the combined efforts of Kent McMullen, Lans Rothfusz, and (mostly) Clark Safford, HotSeat was born. HotSeat is a radar simulation interface that displays actual radar data from an archived severe weather event and allows the user to



issue severe thunderstorm and tornado warnings. HotSeat can be run via the web using a java applet (see web address in box below).

When users begin a HotSeat simulation, they step through an introduction that sets the stage for the event. After the intro, they issue warnings and collect points for those warnings that are verified by storm reports. Finally, they step through a conclusion that dis-

plays some images of the storm damage that occurred.

When the simulation is over and the final score has been displayed, the users can step through the entire sequence and see what cells on the radar led to storm reports. The simulation used during WeatherFest was a tornado episode over central Alabama. Over 100 people of all ages tried HotSeat during WeatherFest and gave it rave reviews. Since then, three other scenarios have been added, and more are planned.

HotSeat is a great way for you to see what goes into the warning decision-making process, and allows you to have a better understanding of what we, as warning forecasters, experience during a severe weather event. Give it a try!! ☀



*Attendees of the 2006 American Meteorological Society's Weatherfest test their severe weather warning skills on HotSeat at the WFO Peachtree City booth.*

Try HotSeat at [www.srh.noaa.gov/ffc/HotSeat](http://www.srh.noaa.gov/ffc/HotSeat)

## Administrative Update

Deborah Connell  
Administrative Support Assistant

Our Human Resources Headquarters in Boulder, Colorado underwent a major restructuring in 2006. As a result, human resource support now comes from several NOAA offices and is collectively called NOAA Workforce Management. Employee payroll and award matters are now managed by the Kansas City and Seattle NOAA Divisions.

Employee and student volunteer security requirements changed, as well; requiring everyone to take security training. This training, and other security

matters, are now handled through the Security Office in Norfolk, VA.

A new web-based time and attendance system was implemented May, 2006, which has simplified the entry of employee's work hours and leave information.

There were several personnel changes in 2006, including:

### Retirees:

James Noffsinger, Senior Forecaster, retired on January 3rd, 2006 after 36 years of Federal service, 18 of them for the Atlanta and Peachtree City offices.

### Transfers:

Dan Darbe, Senior Forecaster, moved from WFO Mobile, AL to our Peachtree City office.

Eric Avila, Meteorologist Intern transferred to the Center Weather Service Unit in Houston, TX.

### New Hires:

Michael Griesinger, was hired as a new Meteorologist Intern.

Finally, our dear friend and colleague Gerald Birdow unexpectedly passed away in June. Gerald served the Federal government for 32 years. We miss his sense of humor and genuine kindness. ☀

### 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
- 2 Hydrometeorological Technicians
- 2 Meteorologist Interns
- 1 Electronics Systems Analyst
- 3 Electronics Technicians
- 2 Student Interns

## Warning Operations Get "SADS"

Dan Darbe  
Senior Meteorologist

**S**ituational awareness is a high priority in any environment where lives and property are at risk. Our warning operations area is no different. To effectively manage the wide variety of data available to our meteorologists, we have made significant improvements to our situational awareness display system (SADS).

Four large LCD monitors have been strategically placed in the warning operations area. These monitors keep warning forecasters constantly updated on current warnings and expiration times, incoming storm reports, latest regional radar and watches, local area web cams, and the Storm Prediction Center's mesoscale analyses of

important temperature, moisture and instability changes. These monitors are in a highly-visible location of our Warning Forecaster desks.

Four smaller monitors are used to display Nashville, Huntsville, Birmingham and Montgomery radars to our west. In addition, two other displays are now used to constantly monitor four local major news networks for "as-it-happens" reports of storm damage and other disasters or emergencies.

We've also taken important steps to improve our hydrologic (river flood and flash flood) warnings by increasing our rain gage comparisons with radar estimates to improve the radar bias. A more accurate radar bias will improve our Flash Flood Monitoring Program (FFMP) and lead to fewer

missed events and increased lead times for our customers.

Finally, our live, web-based weather briefings for emergency managers have been a tremendous success. At least 16 separate briefings were given in 2006 to county and state officials on impending weather hazards associated with winter weather, tropical storms, and severe weather outbreaks. ☀



Four large LCD monitors used for situational awareness at one of the Warning Forecaster desks.



Four smaller LCD monitors used to track radars adjacent to our area.

## Outreach Touches Many Bases

Patricia Atwell  
Meteorologist

**T**he Peachtree City Forecast Office put forth a tremendous effort to reach out to our customers in 2006.

Our office recognized five new counties as StormReady and re-recognized (a second time) five more. The number of StormReady counties within our area stands at 28. Statewide, there are 57 recognized counties. As part of a continuing outreach initiative, staff members also visited 60 of 96 emergency managers as a foundation for improving communications.

In the storm spotter program, classes were conducted from January through mid-March and again from September through mid-November. A total of 22 spotter classes were held with 599 individuals attending.

In 2006, we hosted 70 office tours, allowing more than 1,400 visitors to see first-hand our forecasting techniques, warning dissemination, and to hear our presentations on weather safety. An Open House was held October 13th, in conjunction with the Great Georgia Air Show where we also staffed a 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 Georgia Boat Show, AMS WeatherFest (where the HotSeat simulation and a simulated weather balloon release were big attractions - see photo at left), the Great Georgia Air Show, the Georgia Science Teachers Association and, once again, the Wal-Mart in Lithia Springs as part of their Safety Month. In addition, we conducted several courses at the Georgia Public Safety Training Center in Forsyth - including the Hazardous Weather and Flood Preparedness Course, and the Flood Fight Course. ☀



NWS Intern Eric Avila at the AMS WeatherFest in Atlanta launching a weather balloon with Gen. DL Johnson (Ret.), NWS Director, and over 200 interested onlookers.

## StormReady Expands in GA and Nation

Lans P. Rothfusz  
Meteorologist in Charge

One thousand communities and counties can't be wrong! In 2006, the StormReady program recognized its 1,000th community. In just seven years, StormReady grew from an idea to a national program with over 1,000 participants. There is good reason for the growth - StormReady has been proven to save lives in the communities that participate in it. **Are you StormReady?**

Our forecast area is nearly one-third of the way to being completely StormReady (see map). As of December 31, there were 28 Georgia counties recognized in our 96-county area. The number of participants has grown slowly over the past two years, but new applications continue to trickle in.

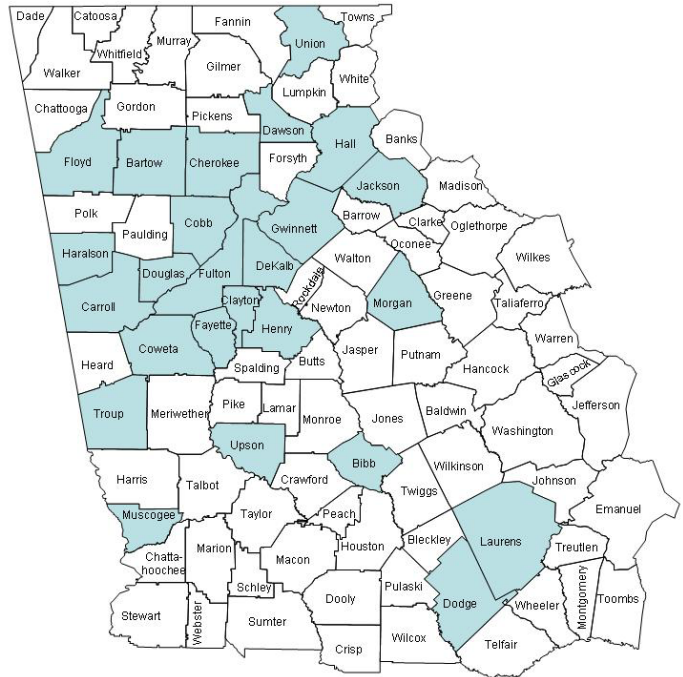
### StormReady Changes for 2007

To strengthen StormReady and make applications easier, the

Georgia StormReady Advisory Board, has implemented several new features and changes to the guidelines of the StormReady program, including:

- Having local SkyWarn net coordination within the EOC. (Optional)
- Maintaining a severe weather contact roster. (Optional)
- Documenting successful siren testing. (Required)
- Ensuring a NOAA Weather Radio is in all incorporated communities. (Required)
- Establishing a lightning safety program & plan. (Optional)
- Increase the number of annual weather safety talks for high-population counties. (Requirement)
- Including NWS as participants in appropriate local exercises. (Optional)

Counties are encouraged to start the StormReady recognition process by contacting Mr. Barry Gooden, our Warning Coordination Meteorologist. ☀



StormReady Counties in the Peachtree City area of responsibility (as of December 31, 2006).

Date	County	Location	Strength	Path		Deaths	Injuries	Damage
				Length (mi)	Width (yds)			
2-Jan	Fulton & Fayette	0.5ENE Palmetto - 1W Lees Mill	F2	7	440	0	0	\$2.2M
2-Jan	Pike	1SE Hollonville - 4ESE Hollonville	F3	3	440	0	3	\$750K
2-Jan	Lamar	3SW Chappel - 2.8SW Chappel	F0	0.6	300	0	0	\$500K
2-Jan	Henry	3N McDonough - 3NNE McDonough	F1	0.6	300	0	0	\$500K
2-Jan	Jones	Wayside - Bradley	F1	3	300	0	0	\$150K
2-Jan	Johnson & Emanuel	5N Kite - 2S Summertown	F1	7	440	0	0	\$300K
8-Apr	Polk	4S Cedartown - 5SE Cedartown	F0	5	100	0	1	\$350K
8-Apr	Polk	1Nw Rockmart - 2ENE Rockmart	F2	3	100	0	1	\$450K
8-Apr	Cobb	Due West - Marietta	F0	2.5	50	0	0	\$150K
8-Apr	Cobb & Fulton	Noonday - Alpharetta	F1	11	200	0	0	1.5M
8-Apr	Banks	5NW Five Points - 4.9 NW Five Points	F0	0.2	100	0	0	350K
15-Nov	Chattahoochee & Muscogee	1 NNE Ft. Benning - 1.6 NNE Ft. Benning	F1	1.4	150	0	9	\$500K
31-Dec	Dooly	0.25WNW Unadilla - 0.25ENE Unadilla	F2	0.5	50	0	1	\$100K



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

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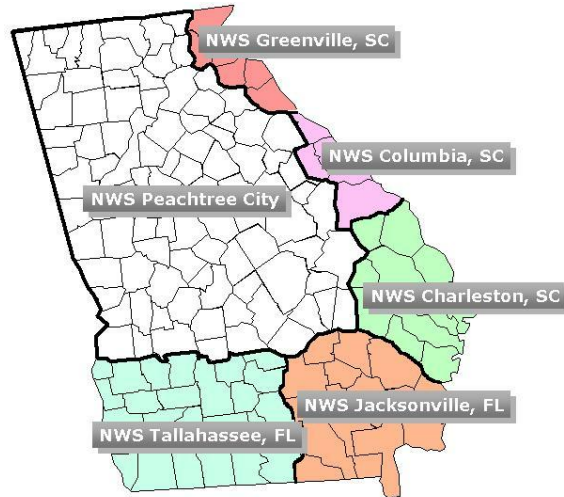
**We are your Weather Service**

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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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Peachtree City, GA 30269