

Shareholders' Report 2008

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



The Forest of 2008

Lans P. Rothfus
Meteorologist in Charge

Each year, as I'm preparing our Annual Shareholders' Report, I get the chance to step out of the trees and see the forest that was the previous year. For 2008, I will admit to being surprised at the number of tornadoes in our County Warning Area (CWA). I knew there had been a lot of tornadoes, having worked among the "trees" with this special group of professionals we call the Peachtree City Weather Forecast Office (WFO), but I hadn't realized records were being set for the number of tornadoes and damage costs in our County Warning Area (CWA). Unwanted records, but records nonetheless. 2008, it turns out, was a bigger forest than I knew!



Georgia World Congress Center damage caused by the March 14 tornado. The SEC championship basketball game was underway in the Georgia dome (top) at the time. A tornado warning was issued 8 minutes prior to the tornado's first damage. (Photo courtesy Atlanta-Fulton EMA.)

The Atlanta tornado was probably the most "visible" event in 2008, but actions by our office the next day earn my mark as the most notable. In particular, a phone call from a WFO meteorologist to an emergency manager during a major severe storm outbreak resulted in Floyd County firefighters being cleared from the path of an EF3 tornado

minutes before it struck. While actions as dramatic as this are rare for us, they occur to a lesser degree with every warning we issue. We respect our opportunities to serve the seven million people of north and central Georgia in that way and in so many others. This report gives a glimpse of what that service looked like in 2008. ☀

Big News Items of 2008

- Record-setting year for tornadoes (page 1)
- Upper air program goes GPS (page 7).
- Incident Support Program arrives (page 11).

In Fiscal Year 2008, Congress appropriated \$911,400,000 to the NWS which equates to an "investment" of \$3.00 per U.S. citizen.

This Shareholders' Report provides an accounting of what the NWS office in Peachtree City is doing with its portion of your investment.

Severe Weather 2008: The Year of the Tornado

Robert Beasley
Meteorologist

The year 2008 proved to be one of the most convectively-active years ever for the WFO, but will best be remembered as the year for tornadoes. Many tornado records were broken in 2008, including the most in a year, the most in a single month, the first recorded tornado to strike downtown Atlanta, and only the second October tornado in WFO

history. Thirty-eight tornadoes, affecting 55 counties, were confirmed within the County Warning Area (CWA) during 2008. The 13-year average is only 14. Tropical storm Fay in late August brought the first tropical-related tornadoes to the CWA since Katrina in 2005. February through August all saw above average severe convective activity, with the reverse from September through December. Although it was a significant tropical season for the Atlantic basin, a

large subtropical high protected the region from all but tropical storm Fay in late August.

Many major severe weather events were observed during the year, including February 17th, February 26th, March 14-15th, April 2-3rd, May 11th, May 20th, June 9th, July 22-23rd, and August 26th. One of the most intense and extended periods of severe weather our WFO has endured was the March 14-15th

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Top 25 North and Central Georgia Weather Events for 2008

Date	Counties	Cause	Damage	Deaths	Injuries	Cost	
1	15-Mar	Polk, Floyd, and Bartow	Tornado (EF3)	Large tornado destroyed or damaged numerous buildings. One fatality and one injury in Polk County when a home was destroyed. One fatality and an injury also occurred in Floyd County when a home was destroyed.	2	2	7.5M
2	11-May	Laurens	Tornado (EF2)	EF2 tornado touched down in far northern Laurens County. Several buildings damaged or destroyed. Two people killed when a double-wide mobile home was destroyed.	2	2	1.4M
3	11-May	Cherokee, Gwinnett, & Barrow	Strong Wind	Strong winds trailing a strong cold front combined with wet ground to blow down dozens of trees. Two deaths resulted from falling trees in Barrow and Gwinnett Counties.	2	0	10K
4	14-Mar	Fulton & DeKalb	Tornado (EF2)	Moderate tornado cut through downtown Atlanta area. Millions of dollars in damage to buildings. One fatality on Decatur Street. Most of injuries occurred during partial collapse of apartment complex.	1	30	25.1M
5	4-Mar	DeKalb	Strong Wind	Tree fell on a Georgia Power truck, killing an employee inside the truck.	1	0	50K
6	8-Jul	Banks	Thunderstorm Wind	More than a dozen trees were blown down across the county. A 70 year-old man was killed when a tree fell on his mobile home.	1	0	30K
7	11-Sep	Houston	Lightning	Nine adults & three teenagers injured during a football game.	0	12	0
8	17-Feb	West-Central Georgia	Tornado (EF1)	Tornado tracked across five counties & caused damage to trees, power lines, and property. Eight injuries, two critical, in Taylor and Crawford Counties when mobile homes were damaged or destroyed.	0	8	880K
9	11-May	Laurens & Johnson	Tornado (EF1)	Tornado damaged 227 homes and destroys 22 others. Five injuries resulted when mobile homes were destroyed.	0	5	15.9M
10	20-May	Cherokee County	Tornado (EF1)	Mile-wide tornado tracked six miles. 60 homes destroyed, 950+ others, along with commercial and public buildings sustained damage.	0	4	46M
11	11-May	Johnson & Emanuel	Tornado (EF2)	Tornado damages at least 30 homes, several vehicles and outbuildings. Mobile home destroyed, resulting in three injuries.	0	3	7.8M
12	11-May	Toombs	Tornado (EF2)	Four mobile homes destroyed, resulting in three minor injuries. Church and two brick homes damaged.	0	3	500K
13	26-Aug	Jackson	Tornado (EF1)	Three mobile homes destroyed, resulting in three injuries.	0	3	350K
14	26-Feb	Fulton	Thunderstorm Wind	90 mph gusts felled trees on several homes. Two injuries occurred in southwest Atlanta when a falling tree caused a roof and wall to collapse.	0	2	2M
15	26-Feb	Carroll	Tornado (EF3)	Dozens of homes & businesses damaged. Two businesses destroyed. One woman injured when she was blown from her home.	0	1	8M
16	26-Feb	Carroll	Tornado (EF1)	One man was injured when a tree limb went through his automobile.	0	1	7M
17	7-Mar	Douglas	Tornado (EF1)	One mobile home and one site-built home destroyed. 60+ homes and businesses damaged. One injury at a Kroger store.	0	1	2M
18	2-Aug	Cherokee	Lightning	One person injured by lightning strike, along with two homes. One home completely destroyed.	0	1	350K
19	2-Aug	Cherokee	Thunderstorm Wind	Downburst winds felled trees. Several campers damaged. One injury when a tree fell on a tent. Up to 134 homes sustained minor damage.	0	1	150K
20	8-Jul	Gwinnett	Thunderstorm Wind	Downburst winds felled a tree on a home. A woman inside the home was injured and treated at the scene by paramedics.	0	1	25K
21	1-Feb	NW Georgia	Strong Wind	Gordon Co. construction worker blown off roof.	0	1	0
22	4-Jul	Upson	Lightning	Lightning struck a 57 year-old male while in the kitchen of his home.	0	1	0
23	9-Jul	Gwinnett	Lightning	Woman struck by lightning while outside at Dacula Park.	0	1	0
24	11-May	Clayton, Henry, Rockdale, & Newton	Tornado (EF2)	19-mile tornado damaged 185 homes and destroyed 53 others. Despite the extensive damage, no injuries were reported.	0	0	7.5M
25	11-May	Carroll County	Tornado (EF2)	Two brief tornadoes within a larger area of straight-line winds destroyed three mobile homes, 35 site-build home, & four businesses. 600+ structures sustained damage of varying degrees.	0	0	7M

Severe Weather 2008

(Continued from page 1)

event, an approximately 36-hour period during which 85 severe convective events occurred, including the Atlanta tornado and four others. March 15th saw the second greatest daily severe convective event total ever for the WFO with 76 events, exceeded only by May 2nd of 2003, when 116 such events were recorded. However, the May 11th Mother's Day tornado outbreak will likely be remembered as the most devastating weather day of the year when 16 tornadoes - the most ever recorded in one day - tracked across west-central and central Georgia killing two, injuring 13, and resulting in \$57.7M in damages. The year also brought one 60+ mile-long tornado to central Georgia on February 17th and an EF3 on February 26th to Carroll county. Carroll county was struck by tornadoes five times during 2008!

A convectively-active summer resulted in 36 days during the June - August period on which

severe convective events were observed, including four days with 20+ damaging wind and hail events.

A handful of flash flood events during the spring and summer marked the first time flash flooding had occurred since June 2006. The most significant flooding as a result of tropical storm Fay in late August.

Outside of a couple of minor snow/sleet events in north Georgia during January and December, above normal temperatures allowed for little winter weather.

Overall, 527 severe convective events were recorded during the year, the most since 2003 (548), and the fifth highest total ever (highest was 734 in 1998) contributing to \$262M in estimated damages, \$154M of which was a result of tornadoes. The number of events (527) was 141% of that observed in 2007 (374) and 121% of the 13-year WFO CWA average of 435. However, the

\$262M in property damages marked a sharp increase over the \$143M of 2007. The seasonal breakdown and 13-year normals for severe convective events are as follows: January - March (164/67), April - June (218/227), July - September (137/115), October- December (8/25).

Deaths and Injuries

Nine weather-related fatalities were recorded during 2008, the most observed since 2003. Five of these were tornado-related. Three deaths were the result of strong winds, and one was the result of thunderstorm wind. There were 82 weather-related injuries, the highest since 2000. Sixty-three were tornado-related, with 15 attributable to lightning and four from thunderstorm wind.

Property Damage

Weather-inflicted property damage (\$262M) during 2008 was the highest amount ever observed in the CWA.

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2008 Deaths and Injuries		
Event	Deaths	Injuries
Tornado	3	33
T-storm Wind	0	3
Hail	0	0
Lightning	2	5
Flash Flood	0	0
Strong Wind	3	0

2008 Weather-Related Damage	
Phenomenon	Losses
Tornadoes	\$113,300,000
Hail	\$21,800,000
Lightning	\$12,700,000
Thunderstorm Wind	\$7,990,000
Strong Winds	\$341,500
Heavy Rain	\$5,500
High Winds	\$5,000
Flash Floods	\$0

Warning Ops Adapting to Change

Rob Handel
Senior Meteorologist

A record 38 tornadoes struck counties served by the Peachtree City WFO in 2008 - 35% more than any other year since the NWS modernized our Doppler radar system and restructured services in the 1990s. These events reinforce the need for increased awareness of the tornado risk in Georgia while finding additional ways to ensure people quickly receive and respond to our warnings.

Tornado warnings preceded 73% of these events, with an average lead time of 14.2 minutes, while Severe Thunderstorm Warnings were in effect for most others. This performance exceeded the NWS goals for the new polygon warnings, though the number and swift speed of storms, as well as the exceptionally small and difficult-to-detect mini-supercell and tropical cyclone tornadoes, challenged our meteorologists. At times, we struggled with how to best warn, given the variety of

complex and unique situations we faced. However, spring tornado simulations and warning strategy seminars helped to solidify and strengthen our operational techniques further. Over time, our polygon warnings became more refined and focused, reducing both the areal coverage and number of counties under warnings - keeping their size as small as current science and technology will safely allow, while maximizing advanced warning to the public. ☀



Tornado Warning issued at 9:30 p.m., March 14. The warning polygon shaded in red; pins indicate minute-by-minute track of Atlanta tornado from 9:38 to 9:50pm.

General Weather Review

Paul Denault
CWSU Meteorologist

Although the drought persisted for a third consecutive year, 2008 experienced several significant rainfalls which lessened its intensity. On January 11th, Columbus received record rainfall (1.58") for the day. This contributed to a monthly total of 5.09", or 0.31" above their average. However, Atlanta, Athens, and Macon posted deficits greater than 1.20" (see chart below). Early January warmth tied the record high of 72°F in Athens on the 8th.

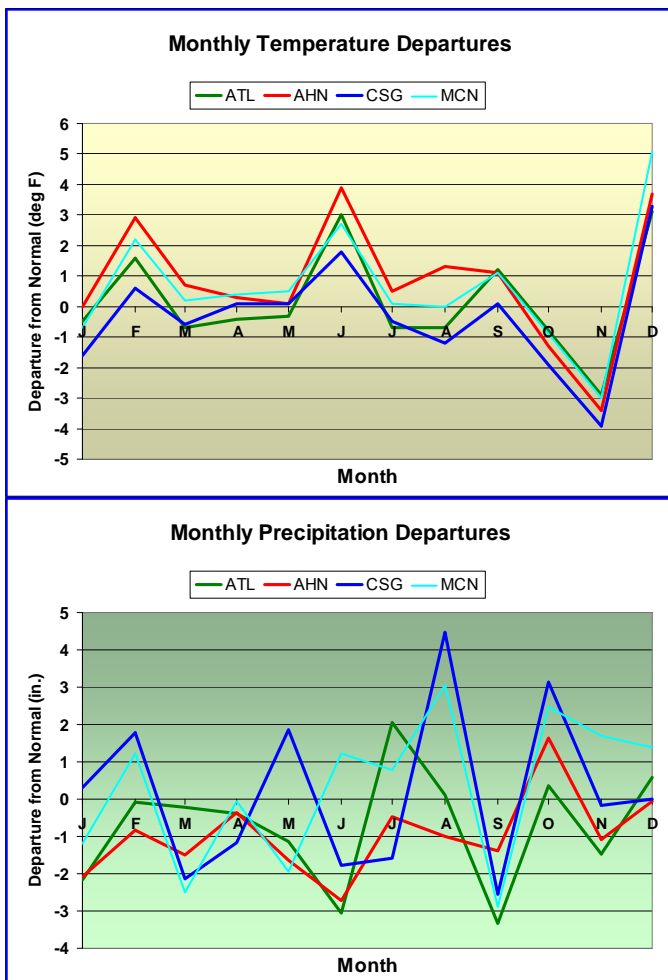
In February, warmer temperatures continued and persistent Gulf moisture advancing northward resulted in ample rainfall. Both Columbus and Macon recorded surpluses of more than an inch, with Columbus recording their 12th wettest February with 6.26". March followed with near normal rainfall of 5.17" in Atlanta, but Athens, Columbus, and Macon fell short.

A late polar airmass in April brought record cold to Athens, Columbus, and Macon on the 30th. In Athens, the 37°F low temperature broke the previous record set in 1922 by 3°F. Rainfall deficits continued in May, with the exception of Columbus which received 1.87" above average. Moderate temperatures for the spring ended abruptly in early June as temperatures soared to their highest readings for the entire year. On the 8th and 9th, seven record highs were either set or tied in the four locations. Athens exceeded the century mark twice with 101°F and 102°F, breaking previous records of 100°F and 99°F dating back to 1933 and 1926, respectively. Similarly, Macon hit 100°F on both days, breaking the old record of 98°F from 1993 on the 8th, and tying it from 1954 on the 9th. This oppressive heat was also accompanied by dry conditions. Atlanta observed its 3rd driest June with only 0.58" recorded.

arrived with record rainfall from the remnants of Tropical Storm Fay. On August 23rd and 24th, Columbus set rainfall records with 2.18 and 2.11 inches, respectively. Macon also received record rainfall on the 24th, when 1.58" fell. Monthly totals were impressive in both cities with 8.26" in Columbus and 6.82" in Macon. This bonanza of summer rainfall ended in September, though, as all four cities recorded substantial deficits. Atlanta, Columbus, and Macon all failed to receive an inch of rain. With just 0.32", Macon experienced its 3rd driest September, while Columbus recorded its 5th driest with only 0.52". Concurrently, temperatures added to the parched conditions with all four locations registering a monthly average above their norm.

Two October rainfall events, one on the 8th, drenched Athens with 3.20" and Columbus with a record 2.75". Then, on the 24th, Columbus set another daily record with 2.03", while Macon also received record rainfall on December 10 and 11, soaked Columbus with 3.80" and Macon with 5.07". These totals were enough to put both cities in the plus column for the year with 50.76" (+2.19) and 48.14" (+3.14), respectively. ☀

The dry period eased in July and temperatures moderated. This moderation continued in August as the capital city reached 90°F or more on just eight days. Added relief from the drought



Charts showing the national variation in rainfall and temperatures for 2008.

Severe Weather 2008

(Continued from page 3)

Tornadoes again topped the list of weather-related property damage at \$153.3M, the highest ever for the CWA. Other

notable damages included hail (\$70.7M), thunderstorm winds (\$28.7M), lightning (\$7.8M), with strong/high winds, flash floods/floods, heavy rain, and wild fires contributing to an

additional \$1.2M. There were 113 weather-related events in 2008 with estimated damages, \$250,000, compared with 56 in 2007. ☀

Tornadoes in Peachtree City NWS Forecast Area in 2008

Date	County	Location	Strength	Path		Deaths	Injuries	Damage
				Length (mi)	Width (yds)			
17-Feb	Carroll	3 SW Lowell to 1 NE Lowell	EF1	4	150	0	0	150K
17-Feb	Stewart, Chattahoochee, Marion, Taylor, Crawford	1 NW Omaha to 4 NE Roberta	EF1	67.9	250	0	8	880K
17-Feb	Jones	9 WSW Clinton to 6 WSW Clinton	EF0	2.4	50	0	0	50K
26-Feb	Carroll	3 NW Bowdon to 5 W Carrollton	EF3	7.2	100	0	1	8.0M
26-Feb	Carroll	3 E Carrollton to 5 E Carrollton	EF1	2	100	0	1	7.0M
26-Feb	Cobb	3 NNE Sandy Plains	EF0	0.05	20	0	0	5K
7-Mar	Douglas	1 NNW Chapel Hill to 1 WSW Lithia Springs	EF1	7	100	0	1	2M
14-Mar	Fulton and DeKalb	2 WSW Atlanta to 2 WNW Gresham Park	EF2	6.3	200	1	30	25.1M
15-Mar	Polk, Floyd, and Bartow	1 ENE Seney to Cartersville Airport	EF3	16.9	880	2	2	7.5M
15-Mar	Butts	1 NNE Towaliga to 1 N Elgin	EF0	4.4	100	0	0	150K
15-Mar	Jefferson	1 NW Wrens to 1 SE Padgett Crossing	EF2	8.2	440	0	0	500K
11-May	Carroll	Jonesville	EF2	0.06	100	0	0	2M
11-May	Troup	1 S Louise to 1 ESE Louise	EF2	1	150	0	0	80K
11-May	Troup and Meriwether	5 SSE Hogansville to 9 NW Greenville	EF2	3.8	300	0	0	80K
11-May	Carroll	7 E Carrollton to 7.1 E Carrollton	EF2	0.06	100	0	0	7M
11-May	and Newton	4 NE Morrow to 3 NNE Oak Hill	EF2	17.5	100	0	0	7.5M
11-May	Bibb and Twiggs	3 NE Lizella to 1 E Dry Branch	EF2	18.4	100	0	0	5M
11-May	Twiggs	1 ESE Fitzpatrick to 4 SE Myricks Mill	EF1	5.3	100	0	0	4M
11-May	Wilkinson	10 S Gordon to 7 NE Nickelsville	EF1	19.5	100	0	0	50K
11-May	Laurens	3 SSW Chappels Mill to 4 NNE East Dublin	EF2	13.8	250	2	2	1.4M
11-May	Laurens and Johnson	1 WNW Tuckers Crossroad 1 NE Wrightsville	EF1	10.1	581	0	5	15.9M
11-May	Washington and Jefferson	2 NE Silas to 9 SSE Atwell	EF0	28.2	440	0	0	5.2M
11-May	Laurens	1 N Lowery to 1 NNE Lowery	EF1	0.4	200	0	0	900K
11-May	Johnson and Emanuel	1 N Kite to 2 W Blundale	EF2	7.5	880	0	3	7.8M
11-May	Treutlen and Montgomery	3 SSE Soperton to 5 NE Kibbee	EF3	8	150	0	0	225K
11-May	Toombs	3 SSW Normantown to 3 S Normantown	EF2	1.2	150	0	3	500K
11-May	Toombs	2 NNW Elton to 4 N Elton	EF1	2.8	100	0	0	5K
20-May	Washington	2 NW Davisboro to 1 NW Davisboro	EF0	1	50	0	0	2K
20-May	Cherokee	Lebanon to 4 ESE Woodstock	EF1	5.9	1760	0	4	46M
20-May	Hancock and Washington	3 WSW Eureka to 2 NE Lindsey	EF1	4.8	125	0	0	76K
26-Aug	Monroe	2 SW Percale	EF0	0.3	50	0	0	0
26-Aug	Hall	4 NNW Gainesville Cotton Mill to 3 SE Murrayville	EF1	1.1	200	0	0	550K
26-Aug	Hall	2 WSW Blackshear Place to 1 S Westside	EF1	4.8	100	0	0	750K
26-Aug	Hall	4 ESE White Sulphur to 4 SSW Lula	EF1	0.8	100	0	0	100K
26-Aug	Jackson	3 NNE Arcade to 1 WNW Commerece	EF1	7.6	100	0	3	350K
26-Aug	Wilkes	1 NNW Mallorysville to 3 NE Norman	EF0	5.1	100	0	0	30K
8-Oct	Fayette	2 NNE Fayetteville	EF0	0.05	50	0	0	130K
10-Dec	Haralson	3 ENE Tallapoosa	EF0	0.08	50	0	0	200K

Severe Weather Performance for 2008

Barry Gooden
Warning Coordination Meteorologist
& Robert Beasley
Meteorologist

“Overall verification scores for 2008 decreased slightly, but there was a marked improvement in lead time.”

During 2008, WFO Peachtree City issued severe convective warnings for 1,663 counties, the highest total ever and a marked increase over the 975 warnings issued in 2007, which is significantly above the 13-year average of 758. The greatest number of warnings issued was in July (332) and May (306). New monthly warning records were set in February (140), March (303), July (332), and August (187). March, May, and July accounted for 56% of the warnings issued.

Thirty-one flash flood warnings were issued during the year, the most since 2005 when 104 warnings were issued, but still well below the 6-year average of 79.

	Exclusive Verification Method*			Inclusive Verification Method**
	Svr Tstm	Tornado	Flash Floods	Svr Tstm & Tornado
Warnings Issued	1407	256	31	1663
Warned Events	359	42	10	437
Unverified Warnings	969	212	19	1084
Unwarned events	113	13	0	90
Total Events	472	55	0	527
POD	0.761	0.764	1.000	0.829
FAR	0.689	0.828	0.613	0.650
CSI	0.284	0.163	0.387	0.026
Lead Time (min.)	11.7	13.4	77.9	13.3

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.

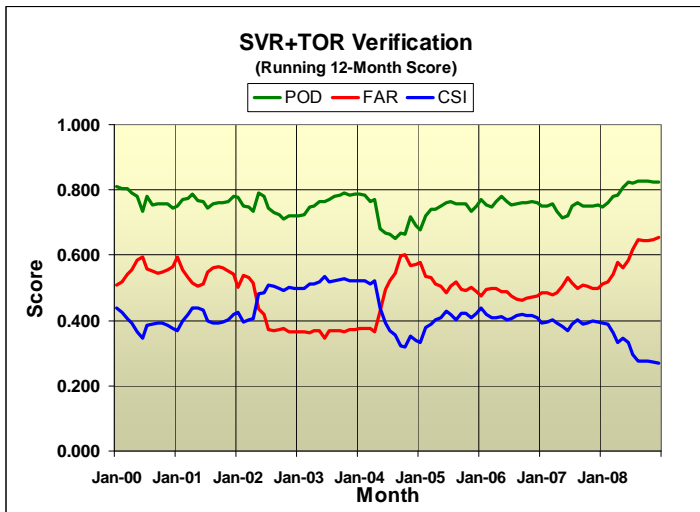
Overall verification scores for 2008 decreased slightly, but there was a marked improvement in lead time.

from 0.429 in 2007 to 0.326 in 2008. The optimum CSI is 1.00.

- The Probability of Detection (POD), which measures our ability to issue warnings before damage occurs, improved significantly, rising from 0.752 in 2007 to 0.829 in 2008. The optimum POD is 1.00.
- The False Alarm Rate (FAR), which provides the percentage of warnings not verified, increased from 0.500 in 2007 to 0.650. The increase is attributed largely to the new polygon warning concept and the significant increase in the number of tornado warnings issued.
- The Critical Success Index (CSI), a combination of the POD and FAR, decreased

The estimated average lead time (the time between warning issuance and first damage report) increased slightly from 13.0 minutes in 2007 to 13.3 minutes in 2008.

Skill scores using both the conventional method and the stricter, exclusive method (where tornado and severe thunderstorms warnings/events are treated separately) are shown in the above table. Other statistics developed for WFO Peachtree City are depicted in a rolling 12-month graph, where 12 months of data are smoothed into a single plot (at left). The graph is shown from 1991, through the mid 1990s, when NEXRAD operations were begun, to the end of 2008. ☀



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

Cooperative Observers Pilot National Program

Frank Taylor
Observations Program Leader

Cooperative Weather dissemination is stepping into the 21st Century. During 2008, Cooperative Weather Observers in north and central Georgia began the process of entering daily temperature, rainfall and river readings via intranet. The system is called WxCoder and it allows the observers the flexibility of entering the daily values on an interface that is custom-designed for each location.

Using WxCoder allows the elimination of paper B-91s, the associated mailing costs of sending forms to the NWS and to the National Climatic Data Center, and the time it takes to get a completed form from each observer to the NWS and NCDC. It has been a much needed improvement!

During 2008 we presented eleven Length of Service Awards, as shown below:

10 Years

Van McKelvey, Cedartown
W.R. Beasley & staff,
Milledgeville
Kimbra & Austin Satterfield,
Ball Ground

15 Years

Frank Johnson, Preston
Linard Spain, Embry
Terry Rush, Mableton

20 Years

Robert Simpson, Siloam
Walt Sullins, Cartersville #2

25 Years

William Delbeck, Jasper 1NNW

35 Years

Dorothy Mercer, Juliette
L. Douglas Griffith, Dallas 7 NE.

Kudos to all these dedicated people! ☀



L. Douglas Griffith Day proclaimed in Peachtree City. Mr. Griffith (center, front) was honored in a ceremony with the Southeast River Forecast Center (SERFC) and the WFO in Peachtree City on July 21, 2008. Mr. Griffith, a past Jefferson and Holm Award Winner, was presented with a 35-year Length of Service Award from MIC Lans Rothfusz (to Mr. Griffith's left) and a Certificate of Appreciation from Todd Hamill (to Mr. Griffith's right) of the SERFC. Several WFO and SERFC staff members attended the ceremony.

“Using WxCoder allows the elimination of paper B-91s, the associated mailing costs....”

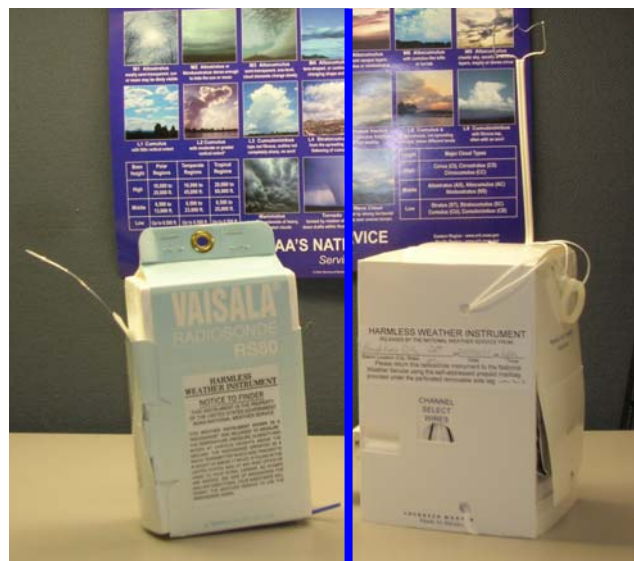
Upper Air Program Enters 21st Century

Mike Leary
Hydrometeorological Technician

Everyday, early morning and early evening, we tie a weather instrument to a balloon and send it into the upper atmosphere. We do this to measure the atmosphere's pressure, moisture, temperature and wind speed and wind direction at various heights. This information is used to analyze past weather forecasts and to make new forecasts.

2008 brought a paradigm shift to how we've been collecting this atmospheric data for years.

For starters, a new PC replaced the one we've used since 1987. (Yes, 1987!) The system we used to track the weather instrument and balloon, originally designed at the end of World War II to track aircraft, was replaced with a system that uses GPS technology. Along with its meteorological sensors, the new weather instrument has a GPS chip. The instrument's radio transmitter sends meteorological and positioning data once every second vs. once every six seconds for the old weather instrument which had to be tracked by following the radio signal. The improvements in data have been impressive. ☀



Two generations of weather instrument “radiosondes.” Instrument which was tracked by radio signal strength is on left. New GPS-tracked instrument on right.

Aviation Program Revamped

Dr. Chip West
CWSU MIC

On November 5th, 2008, the Peachtree City WFO issued the first 30-hour Terminal Aerodrome Forecast (TAF), replacing the old 24-hour

version, for Hartsfield-Jackson Atlanta International Airport. This change also utilized a new NWS format and was changed simultaneously with TAFs for 31 other international airports receiving trans-oceanic flights.

TAFs at major international airports were extended to 30 hours to aid in flight and fuel load planning requirements for long oceanic flights. Flight planning for these flights begins more than 24 hours before the aircraft reaches its destination, so the NWS has extended the forecast valid time from 24 hours to 30 hours beyond the issuance time. Because TAFs now extend into the next day, the time groups in the TAF code had to be changed to include the date in addition to the time. Although the TAF may look

slightly different, the content remains the same.

Extending the Hartsfield-Jackson Atlanta International airport forecasts is expected to make fuel planning for the large air carriers more accurate, thus allowing the international flights to be more efficient and economical. In addition to the international travel benefits, the 30-hour TAF will also allow airlines to better plan for next day domestic flights. This benefit is expected to reduce short-notice domestic flight cancelations by as much as 10% nationally. The long-term planning provided by the new 30-hour TAF will reduce airline industry costs and airport delays for domestic and international flights. ☀

New TAF Format

Valid date of TAF
24th at 1800 UTC through 25th at 2400 UTC

Date of PROB30 Group
25th at 0400 UTC through 25th at 0600 UTC

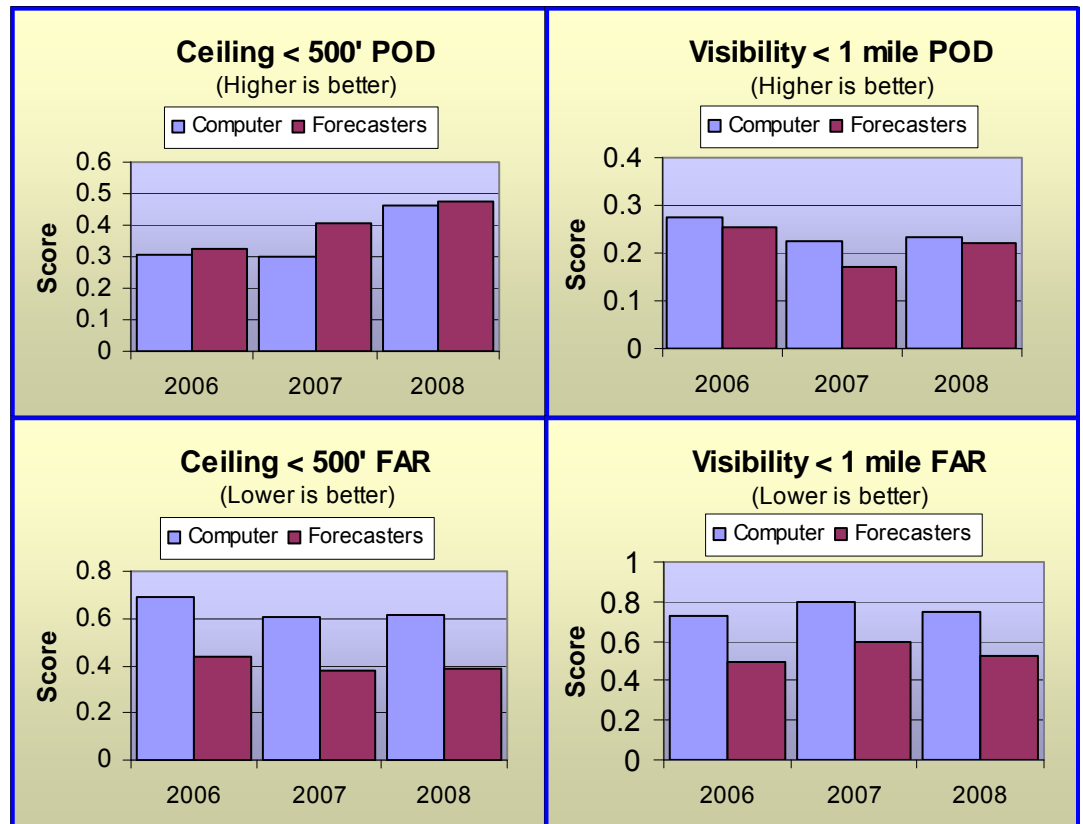
TAF
KATL 241732Z 2418/2524 11006KT 4SM -SHRA BKN030
FM 242300 22006KT 3SM -SHRA OVC030 PROB30 2504/2506 VRB20G35KT
1SM TSRA BKN015CB
FM 250600 250010KT 4SM -SHRA OVC050
TEMPO 2508/2511 2SM -SHRA OVC030=

Date of FM group
24th at 2300 UTC

Date of TEMPO Group
25th at 0800 UTC through 25th at 1100 UTC

The new TAF format will include a date with every time group. This will meet the new international standard.

“...the 30-hour TAF will also allow airlines to better plan for next day domestic flights. This benefit is expected to reduce short-notice domestic flight cancelations by as much as 10% nationally.”




Forecast stats for the seven airports in the WFO area of responsibility. For Probability of Detection (POD), higher scores are better. For False Alarm Rate (FAR), lower scores are better.

Still Beating the Machines!

Trisha Palmer
Meteorologist

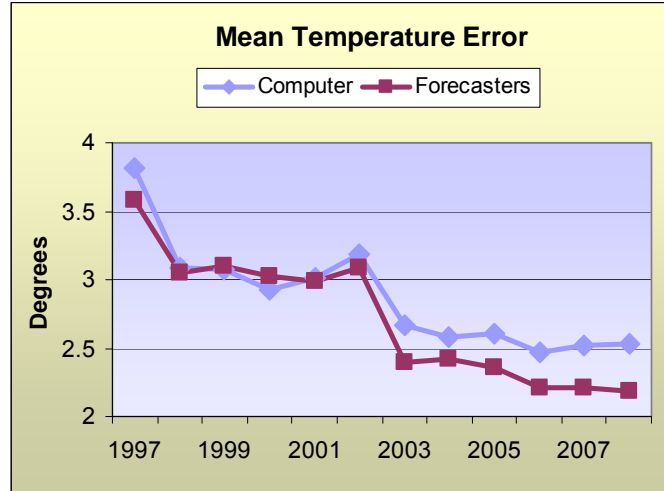
Over the past couple of years, WFO Peachtree City has implemented new tools to make forecasters aware of routine computer model biases. For example, one model consistently forecasts the high temperatures at Rome too warm by nearly three degrees, especially during the summer. Another is consistently too cool at Cartersville. By catching these trends, pointing them out to forecasters, and combining these biases with day-to-day meteorological skills to improve upon the models, we can provide the best forecasting services possible to north and central Georgia.

The adjacent charts show temperature and precipitation error since 1997 at five sites across our forecast area: Athens, Atlanta, Columbus, Macon, and Rome. For 2008, our forecasters showed a marked improvement on temperature forecasts - indicating that these temperature tools do indeed work! However, as predicted last year, precipitation forecast skill decreased slightly for both the models and our forecasters. Though forecasters continue to beat the models, the decrease in skill is likely due to the increase in rainfall over the past year.

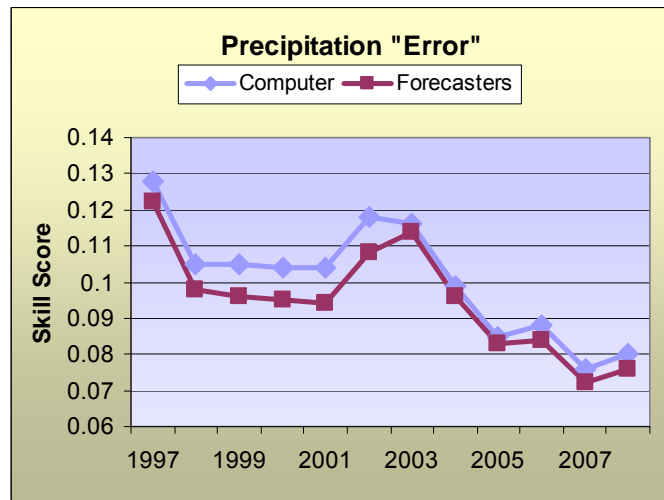
We also compare our forecasts to observed (actual) temperatures. Our goal is to forecast high and low temperatures within three degrees of the actual high and low. The bottom chart shows that we achieved this goal 82% 

of the time for the first period (12 hours) of each forecast for the five sites in 2008. Through the years, we have gradually increased the number of high/low temperature forecasts within this plus/minus three degree range, while gradually decreasing the number of temperature forecasts greater than plus or minus nine degrees - in fact, 2008 marks the first year we have had over 80% of the forecasts within three degrees. In other words, we have reduced the number of temperature forecast "busts," which in turn provides much better service to our customers.

We recognize forecaster performance by providing annual cool (October through March) and warm (April through September) season awards for best average first-period temperature and precipitation forecasts for the season. The forecaster with the best absolute precipitation score is given the award for the season, which is then passed on to the best forecaster the following season. The same goes for temperatures; however, because we award per season, our goals change through the year. Cool season temperatures are more difficult to forecast due to the increased occurrence in fronts that pass through the Southeast. Conversely, warm season temperatures are not as difficult to forecast due to the lack of changing weather patterns. Thus, we have set a tougher goal for our temperature forecasts in the warm season than in the cool season. Although the goal is more difficult, it will improve the overall office performance tremendously when we meet it!



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

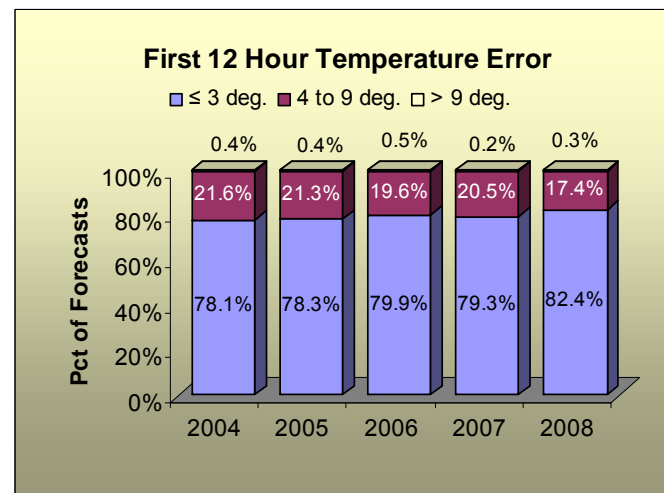
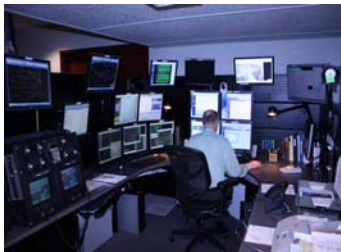


Chart showing distribution of first period (first 12 hours) forecast temperature errors for Atlanta Hartsfield-Jackson Airport.

CWSU's New Cockpit

Dr. Chip West
MIC, CWSU



Forecaster works in the new CWSU operations area.

The Center Weather Service Unit (CWSU) moved its operations desk to be collocated with their primary customer, the FAA's Traffic Management Unit (TMU) in the Air Route Traffic Control Center of Hampton GA. Now that the CWSU and the TMU are collocated, critical weather information used for decisions that affect the flow of traffic within the entire United States is more delivered in a

more timely and efficient fashion. This faster transfer of weather information will help decision makers allow the maximum number of aircraft to fly safely in a given weather situation throughout the Southeast. The end result is improved flight safety and reduced travel delays.

In conjunction with the move of the CWSU, new FAA-specific weather monitoring and forecasting systems were installed to help disseminate and display critical weather

data to air traffic controllers and the duty meteorologist. One of the more significant new displays was the Corridor Integrated Weather System (CIWS). CIWS allows the user to overlay the current and forecasted radar, satellite and other meteorological data on one screen with aircraft route and FAA specific information. These and other CWSU efficiency and technology upgrades are expected to significantly reduce weather related aircraft delays in 2009.



Website Improvements

Terry Murphy
Meteorologist

This year we adopted "eSpotter" as our primary method for storm spotters and emergency managers to send storm reports via the internet. More convenient and efficient than e-mail, "eSpotter" provides web-based forms which helps the sender create a complete report. When sent, meteorologists in the WFO are alerted at their workstations and the sender gets receipt acknowledgement. Access to "eSpotter" is available at weather.gov/atlanta.

We also became involved in CoCoRaHS (Community Collaborative Rain, Hail and Snow Network). This allows people who have rain gages in their yards to send daily rainfall totals to us online. These reports fill gaps in our own observation network. The effort benefits the entire online community, as the reports are archived and appear on CoCoRaHS web pages. Access to CoCoRaHS pages is available

on our "Rainfall Resources" page.

Georgia science teachers now have their own earth science resource page. This page is uniquely designed to provide helpful links in a way that correlates directly with the State of Georgia Performance Standards. This page is located in our "Education & Outreach" section under "Links for Fun and Learning".

Late in 2008, the NWS gained approval to use Google Maps on our web pages. These maps were quickly incorporated into our "point and click" forecast pages. Watch for more features involving Google maps in 2009.

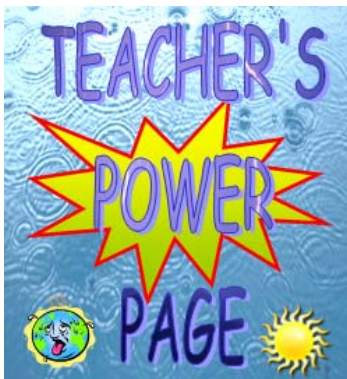
The drought and low water levels of Lake Lanier continued as a big weather story for 2008. We provided current drought and water resources information with special links on our front page. There were also at least five headlined features on the situation at Lake Lanier. ☀

StormReady® News

Lans P. Rothfusz
Meteorologist in Charge

StormReady family continues to grow at a slow but steady pace. Gordon and Crisp Counties were recognized as StormReady for the first time. Union, Fulton and Banks Counties received their "second term" recognitions which means they have been in the program for six years. Congratulations to all new and second-term partners for being proactive approach in their community preparedness for severe weather.

As of December 31, 2008, there were 65 Georgia counties recognized in the StormReady program, 31 of them in the Peachtree City CWA (see map on opposite page). These counties join over 1,400 counties nationwide. To become a StormReady county, contact Mr. Barry Gooden, our Warning Coordination Meteorologist. StormReady has been proved to save lives in the communities that participate in it. **Are you StormReady?** ☀



Check out the Teachers' Power Page at weather.gov/atlanta.

Special Feature: Incident Support Program Begins

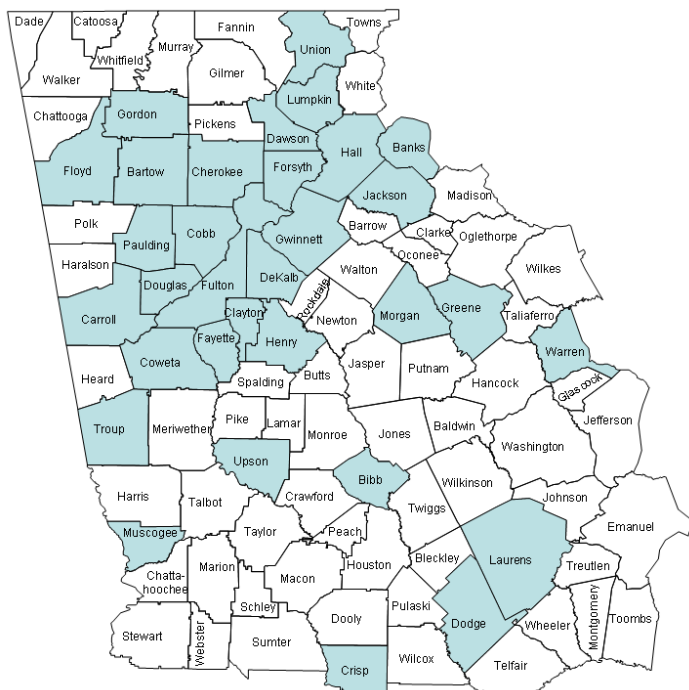
Matt Sena
Meteorologist

The Peachtree City WFO began a thorough modernization of our Incident Support Program (ISP) in 2008 to keep pace with the changing needs and capabilities of our public safety partners. This involved not only a change in the tools and procedures used to provide support, but a fundamental change in what constitutes an 'incident.' In addition to the traditional events for which we provided support in the past (i.e. hazardous materials spills, large fires, and other accidents endangering public safety,) the new ISP has been expanded to include support for any event with widespread or large-scale public impact in which emergency services requests our assistance. This could include events such as community festivals, large sporting events, and even New Year's Eve celebrations (like

Atlanta's Peach Drop), to name a few.

New equipment was purchased, including a dedicated laptop computer and a portable weather sensor, to give our forecasters the capability to support emergency services from a variety of locations ranging from the WFO to the local Incident Command Center or even to the scene of the event.

Also in 2008, a training program was initiated with all meteorologists completing the Incident Command System 100 & 200 courses through FEMA.



StormReady Counties in the Peachtree City County Warning Area.

Graphic overview of our Incident Support Program.

Two of our meteorologists completed advanced (ICS300 & ICS400) courses at the FEMA Training Facility in Anniston, Alabama.

Training will continue in 2009, including practical exercises for our meteorologists utilizing our new equipment and procedures. We will also be working with our emergency management partners to familiarize them with the broad range of ISP services available and to increase our understanding of their incident support needs. Emergency management officials are encouraged to call on the NWS ISP services for exercises, drills or the real event(s) that will impact lives and property in central and north Georgia.

“Emergency management officials are encouraged to call on the NWS ISP services for exercises, drills or the real events.”

Important System Improvements

Richard Black
Electronics Systems Analyst

Upgrades and replacements are commonplace in the WFO and keeping pace with technology is a responsibility we take seriously. This year, most of our core systems received either a refresh or replacement of hardware and/or software.

AWIPS: Our primary computer system continues to evolve to become more effective in fulfilling its role as the hub technology-based forecasting tool. This year several operational builds were installed to better equip the meteorologist with

the needed tools to produce timely and accurate forecasts and warnings.

RRS: In April of 2008, we installed the Radiosonde Replacement System (RRS) to replace its antiquated Microcomputer Automatic Radio-theodolite (Micro-ART) system, which has been in operation since the late 1980s. The RRS is comprised of a new Global Positioning System (GPS) tracking antenna and a new XP-based workstation to process meteorological data. One of the major features of the RRS is its use of state-of-the-art GPS radiosondes operating in the 1680 MHz radiosonde frequency. The NWS has been using the 1680 MHz band

with its Radio Direction Finding systems for over 50 years with minimal interference.

RADAR: This year we saw the addition of the Terminal Doppler Weather Radar Supplemental Product Generator (SPG). This new system provides radar data from a NEXRAD-type radar at Atlanta's Hartsfield-Jackson International Airport. The SPG system is a complex assembly of hardware and software technology wrapped in one compact technology bundle that produces high-resolution radar images every minute. The SPG processor is a Penguin Computing Altus 1300 server which clocks the two dual AMD CPU's at 2.1GHZ. ☀



RRS parabolic dish with narrow angle gathering feed horn.

Office Reaches Thousands!

Dan Darbe
Senior Meteorologist

Storm spotter classes were conducted from January-March and September-December. The office surpassed previous years with a total of 35 spotter training classes and 1034 attendees trained. We also hosted 75 office tours, briefing 1,634 visitors on severe weather safety along with warning and forecast techniques. Another 322 students were introduced to the world of meteorology through school talks, career days and science fairs.

One of our most ambitious outreach efforts was in support of the 5th Annual National Preparedness Month sponsored by the Department of Homeland Security's Ready campaign. The event, appropriately named "ReadyFest", included speakers from the NWS, GEMA, State Insurance Commission, Citizen Corps, Department of Human Resources, and Fayette County EMA. Over 60 attendees received valuable emergency preparedness information.

ReadyFest was followed by a two day "Open House" at the

NWS Forecast Office and Southeast River Forecast Center. Activities included meeting the staff, discovering tools used to make weather and river forecasts, and learning how tornado and severe thunderstorm warnings are created and issued.

Other significant outreach events included the staffing of our NWS booth at the Rome Airshow, Galleria Home & Garden Show and Georgia Science Teachers Association Conference. All combined, over 3,200 people were educated on critical services provided by your NWS. ☀



Visitors getting a weather briefing at the NWS 2008 Open House.

Macon Weather Radio Down and Up in a Hurry

Patricia Atwell
Meteorologist

Severe thunderstorms plowed through north and central Georgia the morning of May 11, 2008, destroying the tower holding the NOAA Weather

Radio antenna for Macon (see photo at left). Fortunately, a functioning antenna was already installed on a newly-erected tower at the site. With a simple cable splice, the Macon transmitter was operating in three days. In December, the Macon transmitter itself was

upgraded to a new Armstrong transmitter. The new transmitter is state of the art and will automatically swap from the main transmitter to the backup transmitter when the need arises. ☀



The remains of the Macon NWR tower after the 2008 Mother's Day storms.

Hydrology in 2008: Slight Drought Improvement

Kent Frantz
Senior Service Hydrologist

Rainfall amounts increased in 2008, but it was still a drier than normal year across most of Georgia. This was due to a weakening La Niña pattern in the beginning of the year that diminished to a neutral pattern by summer. Georgia received 50 to 90 percent of its normal annual rainfall, with some locations in central Georgia reaching 110% of normal.

Consequently, a severe to exceptional drought continued over most of north Georgia with improvement by December. Selected locations with annual

rainfall and departure amounts include: Atlanta (41.43", - 8.77"), Athens (36.57", - 11.46"), Columbus (50.76", +2.19") and Macon (48.13", +3.13"). Rainfall deficits over most of north Georgia caused record low flows on numerous streams. However, the greatest annual rainfall of 70" across the state occurred on the Tennessee Valley Divide ridge line between Hiawassee and Helen. This prevented a new record low pool elevation from occurring on Lake Lanier in December.

Georgia had a minimal tropical season this year. Tropical Depression Fay in late August mainly affected the northeast with heavy rain and flash

flooding of creeks and rivers in the upper Chattahoochee River basin. Amounts of 6" to 12" occurred in an area from Blairsville to Dahlonega and Clarkesville to Hiawassee.

The most hydrologically-active month was December with minor flooding on portions of creeks and rivers in the Tennessee, Conasauga, Chattahoochee, Ocmulgee, Flint and Oconee River basins. This occurred when widespread 3" to 6" of rain fell in less than 48 hours. The heavy rain was associated with a strong upper level low pressure that moved through the southeast U.S. with significant Gulf moisture in advance of the system. ☀

Hydro Tally for 2008

- 10 Flood Watches
- 19 Flash Flood Warnings
- 33 Flash Flood Statements
- 12 River Flood Warnings
- 45 Flood Statements
- 27 Hydrologic/Drought Outlooks

Fire Weather Surpasses Goals

Brian D. Lynn
Incident Meteorologist

A total of 46 Red Flag events occurred in 2008 that required the issuance of 2,927 warnings. This was an average of 64 of 97 fire zones per event. Five events were missed totaling 136 fire zones. This gives an average of 27 zones per missed event. The busiest months in 2008 were March, April, October and November. These 4 months comprised 29 of the 51 events(57%) and a total of 1,890 Red Flag Warnings(65%) were issued.

Verification of the Red Flag Warnings continues to exceed goals. The national goals for Probability of Detection (POD) and Lead Time for 2008 were set at 85% and 9.8 hours, respectively. Our POD for 2008 was 91.6% with a lead time of 13.2 hours. The lead time of

13.2 hours is an improvement over the national goal by 35%.

In August, Brian Lynn was dispatched to Granbury, TX to support the Texas Forest Service during ongoing wild fires across the state. Luckily, he brought rain for several days that essentially doused the fire concerns. Kent Frantz got dispatched to near Quincy, CA on the Canyon Complex Fire as an IMET trainee in July. Kent finished his requirements and became a certified IMET. Georgia now has two IMETS ready to go for the 2009 fire season.

Fire weather customers have access to a new web-based product called the "Fire Weather Point Forecast Matrices". With a lat/lon pair, elevation, and a location name, we can produce a fire weather forecast for that location twice a day. ☀

Admin Update

Deborah Connell
Administrative Assistant
and Lans Rothfusz, MIC

Quiet best describes the administrative year in the WFO. Staffing was relatively stable, although we bade farewell to Mr. Chris Carney, an Electronics Technician, who was promoted to a supervisory post in El Paso, TX. In his place, Mr. David Belbey joined us from the San Angelo WFO.

In October, the WFO Leadership Team structure was revamped in order to distribute staff talents in new ways and to improve the effectiveness of the teams. Five teams now exist, each with a specific focus such as production, marketing, supply, R&D, and distribution. The office also began implementing a new 5-year Strategic Plan which will be updated annually. ☀

WFO Staffing at Year's End

- 1 Meteorologist in Charge
- 1 Administrative Support Assistant
- 1 Warning Coord. Meteorologist
- 1 Science and Operations Officer
- 5 Senior Forecasters
- 7 General Forecasters
- 1 Senior Service Hydrologist
- 1 Information Tech Officer
- 1 Observations Program Leader
- 2 Hydrometeorological Technicians
- 2 Meteorologist Interns
- 1 Electronics Systems Analyst
- 3 Electronics Technicians
- 2 Student Interns



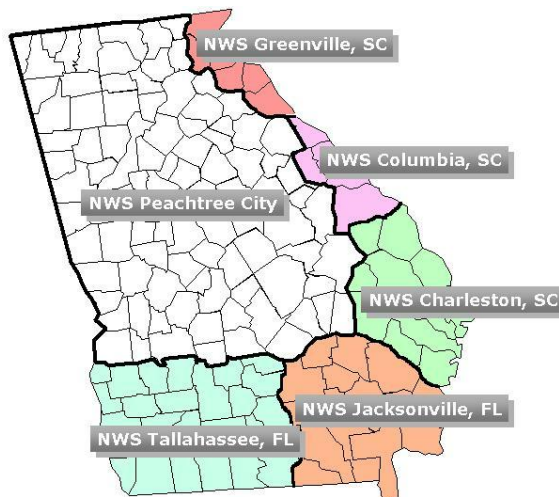
*National Weather Service • Weather
Forecast Office • Peachtree City, Georgia*

Phone: 770-486-1133
Fax: 770-486-9333
Email: lans.rothfusz@noaa.gov

We are your Weather Service

weather.gov
(and click on Georgia)

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).



4 Falcon Drive
Peachtree City, GA 30215