

Shareholders' Report 2003

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



Greetings from Your Weather Service

Lans P. Rothfus
Meteorologist in Charge

Your annual "Shareholder's Report" of the Peachtree City Weather Forecast Office (WFO) has arrived! It is our way to keep you apprised of your "investment" in the NWS.

Although 2003 was one of our busiest severe weather seasons in years – especially due to flooding, our performance scores improved and our customer support continued to receive high marks. We even experienced wild weather ourselves on May 7 when our staff dove for cover as a strongly-rotating thunderstorm passed within 1/4 mile of the office. Although no tornado touched down, significant wind damage occurred just to the west of the office. Our sister office in Birmingham seamlessly took over warning responsibilities for the five minutes our staff took cover. I

am proud of the staff for staying dedicated to our mission while staring down the barrel of the gun until the last second. Through it all, your service from the NWS never wavered.

2003 was exciting in several other (less dramatic) ways. We initiated the "GraphiCast" product on our web page (see page 11) to great acclaim. Other changes, such as new

operational workstations and refined Leadership Teams in the office were less visible, but no less important to our successes in 2003 and beyond.

As a result of the innovative work of our Leadership Teams in 2003, for example, we will be unveiling several new concepts in 2004. We are also using Six Sigma methodologies more effectively. As a result, we have better measures of our day-to-day performance, a better understanding of our customer needs, and we have initiated efforts to reinvent several key program areas. Am I excited about all this? You bet! It has been a great year, but hang on for a super 2004!

Throughout the report, I hope you will find our activities have been aligned with your expectations of us. As always, I welcome your comments on how we're doing. My contact information is on the final page. Enjoy the report! ☼



Doppler wind velocity image from May 7th storm showing 100 mph winds (bright green) approaching the Peachtree City WFO (near center of black circle).

The Big News Items of 2003

- Successful unveiling of the new web-based "GraphiCast" (page 11)
- The most significant flooding event since Tropical Storm Alberto (page 9)
- Upper Air program surpasses national averages for first time since 1998 (page 7).
- Forecasts break 1 Sigma level (page 5).

"In Fiscal Year 2003, the NWS was appropriated \$754,628,000. This equates to an "investment" of \$2.59 per U.S. citizen."

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Severe Weather Recap

Robert Beasley
Meteorologist

The year 2003 saw a marked increase in the amount of severe weather and particularly flash flooding, across north and central Georgia. Even so, the amount of severe weather occurring in 2003, again with the exception of flash flooding, was not out of the ordinary, it just followed a

period of several minimal severe weather years, namely 1999-2002. Nonetheless, 992 entries were made in the national Storm Data publication for 2003, marking the most storm related entries for a single year that have been made in the last decade. The amount of flash flooding occurring during the year was quite remarkable, with 184 flash flood events and an

(Continued on page 2)



Tree toppled by strong winds (and wet soil) in Bleckley Co. on May 2nd. RV was backed up to the tree when it fell. (Photo courtesy Tim Ketterson, Sr.)

Severe Weather Recap

(Continued from page 1)

estimated damage of \$31.37 million. Flash flooding of this magnitude has not been observed in north and central Georgia in many years.

With respect to severe weather, May 2nd and May 5th through May 8th will certainly stand out as the year's most active weather period. These dates marked an extensive period of severe thunderstorms, tornadoes, and flash flooding. There were 124 thunderstorm wind, 95 hail, 51 flash flood, 22 lightning, and 5 heavy rain

events occurring during these five days, comprising 30% of the total Storm Data entries for the year!

The first half of the year, with the exception of January, was quite active with 966 of the 992 events occurring during the first eight months. After mid-August, much quieter weather conditions prevailed for the remainder of the year, with only a few events occurring on approximately a half-dozen days after September 1st.

Tropical storm Bill, which moved across north Georgia on

July 1st, was the only named storm to affect north and central Georgia during the year. The tropical storm simply aggravated the saturated ground conditions, resulting in more flooding. Significant winter weather was also noticeably absent during the year. Nonetheless, a series of strong Arctic cold fronts moved through the area in January bringing some of the coldest weather observed in years. Only a couple of marginal snow storms blew through north Georgia with these fronts.

(Continued on page 3)



Aerial photo of trees flattened near Sharpsburg, GA (Coweta Co.) during May 7 "microburst" event. Radar image of the storm that produced this damage is shown on page 1. (Thanks to Georgia Civil Air Patrol for supplying the flight.)

Significant Weather Events in Peachtree City County Warning Area (January - May 2003)

Date	County	Cause	Damage	Cost	Deaths, Injuries
Feb 22	Troup	T-storm wind	Strong winds destroyed one mobile home & severely damaged three others.	100K	0, 1
Mar 30	Spalding	Strong Wind	A large oak tree blew into a 71-year old man's car.	10K	1, 0
Apr 25	Dade	T-storm wind	Microburst damaged 3 structures. Trees & power lines blown down.	100K	0, 2
May 02	Madison	T-storm wind	Five people were injured when a large tree fell on their vehicle.	25K	0,5
	Fulton	T-storm wind	Large tree blown down on a home.	150K	0,1
	Gwinnett	Lightning	Several homes struck.	250K	0, 1
	Coweta	T-storm wind	Several homes & businesses suffered damage from downed trees.	300K	0, 1
	Troup	T-storm wind	Five homes and one vehicle were damaged when large trees fell on them.	250K	0, 0
	Meriwether	T-storm wind	One person in Gay was injured by a fallen tree.	7K	0,1
	May 06	De Kalb	Flash Flood	Peachtree & Nancy Creeks flood several homes & apartments.	250K
Fulton		Flash Flood	Peachtree Creek floods several homes & apartments.	250K	
Walker		Flash Flood	Residences & roads flooded along Chickamauga Creek.	250K	
Catoosa		Flash Flood	29 roads flooded and closed for two days. Homes and businesses flooded.	1M	
Whitfield, Troup, Muscogee		Flood	Roads flooded and closed for 5 days. Prater's Mill State Park flooded.	550K	
Floyd		Flash Flood	30 roads closed due to flooding. Homes and businesses in Rome experienced significant flooding	1M	
Madison		Tornado	20 homes and other structures sustained moderate to major damage.	500K	
Fulton		Flash Flood	Apartments and homes flooded in East Point and Buckhead.	375K	
May 07	Haralson	Flash Flood	Roads flooded and closed. 62 roads incurred extensive damage. 8 washed out.	1.3M	
	Coweta	T-storm wind	Hundreds of trees blown down. Major damage to homes in Sharpsburg area.	500K	
	Heard	Flash Flood	20 roads flooded & rendered impassable. Several homes sustained minor damage.	1.5M	
May 08	Meriwether	T-storm wind	Two men were injured when a wind blown tree limb fell on their car.	5K	0, 2
	Troup	Flash Flood	Numerous roads, including I-85 and I-185 flooded and closed. 4 bridges washed out. 200+ residences and business received moderate to major damage.	10M	1, 0
	Meriwether	Flash Flood	30 roads washed out, bridges washed out, or collapsed.	5M	0, 5
May 08	Taylor	Flash Flood	A 42-year old male drowned in flood waters along U.S. Hwy 80.		1, 0
	Fulton	Flash Flood	Flooding in Buckhead and Midtown Atlanta. Apartments flooded along Peachtree and Nancy Creeks.	300K	
May 16	Whitfield	Flash Flood	Roads closed & partial collapse of Hwy 2. Businesses & apartments damaged.	1M	
	Murray	Flash Flood	Majority of county roads flooded and impassable.	250K	

Significant Weather Events in Peachtree City County Warning Area (June - December 2003)

Date	County	Cause	Damage	Cost	Deaths, Injuries
Jun 11	Walker	T-storm wind	Trees down on power lines and seven homes.	500K	
Jun 16	White	Lightning	Two males struck.		0, 2
Jun 16 - 17	Cobb	Flash Flood	Flood waters caused a 20-foot deep by 6-foot wide sink hole on Six Flags Parkway.	250K	
	De Kalb	Flash Flood	Roads and apartments flooded.	500K	
	Fulton	Flash Flood	Roads, homes, and businesses were flooded near Peachtree Creek.	500K	
	Gwinnett	Flash Flood	Extensive flooding of roads & streets. 13 roads closed. Homes, businesses & vehicles sustained significant damage.	500K	
Jun 17	Fayette	Flash Flood	Several roads damaged or washed out. Pye Lake dam failed and flooded homes.	600K	
Jun 18	Carroll	Flash Flood	Roads & bridges flooded. Earthen dam failed.	250K	
Jul 10	Fulton	T-storm wind	Tree fell on a vehicle killing three of the four occupants.	35K	3, 0
Jul 13	Murray	T-storm wind	Large trees blown down.	25K	0, 2
	Whitfield	T-storm wind	Trees blown down.	25K	0, 1
	Cherokee	Flash Flood	Roads flooded & washed out. People rescued from swamped vehicles.	250K	
	Johnson	Heavy Rain	Two males injured when awning fell on them.	5K	0, 2
Jul 16	Gilmer	Flash Flood	Record flooding. Home & church washed down Harris Branch Creek.	1M	0, 1
Jul 17	Bartow	T-storm wind	A man was killed by falling tree.		1, 0
	Houston	Lightning	Two homes and one business suffered damage.	250K	
Jul 21	Gwinnett	Lightning	A 27-year old male was struck by lightning while mowing lawn.		1, 0
Jul 22	Forsyth	T-storm wind	Trees blown down.	50K	0,2
	Cobb	T-storm wind	Trees and power lines blown down. Homes and planes damaged.	150K	0,1
	Forsyth	Lightning	A 13-year old girl injured.		0,1
	Gwinnett	T-storm wind	Trees blown down.	75K	0,2
	Crisp	T-storm wind	A 51-year old male died two weeks after winds blew a heavy metal door onto him.		1,0
Aug 6	Pulaski	Heavy Rain	A 14-year old male was swept away in a flooded drainage ditch.		1,0
Aug 15	Fannin	Lightning	Lightning struck two people at the Sugar Creek Raceway.		0,2
Aug16	Clayton	Lightning	A construction worker was injured when struck by lightning		0,1

Severe Weather Recap (cont.)

(Continued from page 2)

Tornado Tally: The year 2003 was remarkable in a positive sense with respect to tornadoes. There were no tornado-related deaths or injuries during the year and the estimated damage figure of \$778K was the lowest tornado-related damage figure recorded since 1997. 2003 marked the fifth consecutive year without a tornado-related death and the first time in nearly a decade with no tornado-related injuries. Even so, six tornadoes affected north and central Georgia on three days. All but one of these tornadoes occurred during the May 6th and May 7th severe weather episode, none exceeding the F1 intensity on the Fujita tornado intensity scale. Each of these tornadoes was embedded within a slow moving west-east oriented line

of intense convection. The final tornado of the year occurred on July 1st in association with the remnants of tropical storm Bill.

Deaths & Injuries: 2003 brought the most weather-related deaths to north and central Georgia since 1998. Ten weather-related deaths were recorded during 2003. Thunderstorm winds led the list of weather-related deaths with five, followed by two flash flood-related deaths, and one death each caused by lightning, strong winds, and heavy rain.

With respect to injuries, the year marked the most weather-related injuries seen since 2000. Thunderstorm wind again led the list of weather-related injuries at 21, with seven injuries attributed to lightning, six to flash floods, and two from a heavy rain incident.

Outside of one strong wind-related death in March, all of the deaths and injuries occurred between May and August.

Property Damage: Weather-inflicted property damage (\$41.90 million) during 2003 was the most observed since 2000 (\$77.45 million), and the third highest damage amount observed since 1995. However, it was still a far cry from the \$132.66 million in weather-related damages that occurred in 1998. Flash flood-related damage exceeded thunderstorm wind-related damage, the next highest category, by nearly five times the amount.

“2003 brought the most weather-related deaths to north and central Georgia since 1998.”

2003 Deaths & Injuries		
Event	Deaths	Injuries
Tornado	0	0
Tstorm Wind	5	21
Hail	0	0
Lightning	1	7
Flash Flood	2	6
Strong Winds	1	0
Heavy Rain	1	2

(Continued on page 13)

Weather Review for 2003

Phil Grigsby
Meteorologist Intern

“Georgia, as a whole, experienced its wettest February-to-July period ever recorded. Columbus and Macon reported the 3rd wettest February to July period ever.”

January saw unusually dry and cold conditions for much of the month. Rainfall was nearly 3” below normal across north and central Georgia. Most of the rainfall recorded in January fell on the last three days. Temperatures were also well below normal in the state with the coldest temperatures of the year recorded on the 24th. Overnight lows in Atlanta fell to 8°F with lows in the lower teens reported in Columbus, Macon, and Athens. On the 18th, record lows of 13° and 16°F were set in Athens and Macon respectively. Overall, the mean temperature for the area was about 2°F below normal in January.

A change in the overall weather pattern in early February lasted through the end of winter and

into the middle of summer. From February to April, temperatures were warmer than normal, and rainfall increased dramatically. By the end of April, central Georgia’s yearly rainfall was running over 2” above normal. Overall, the mean temperature in the region for the period was about 1.5° above normal. March was the warmest of the three months. A record high of 74° was set in Atlanta on February 22nd, and a record low of 29° was set on March 31st.

Georgia, as a whole, experienced its wettest February to July period ever recorded. Columbus and Macon reported the 3rd wettest February to July period ever. Atlanta only fell 0.06” shy of a record rainfall for the May-June period with 17.28”. Atlanta set a record wet May with 9.94”. Macon reported the second wettest May- June period with 15.59” of

rain. June was the third wettest on record in Columbus with 8.77” and Macon saw its second wettest June with 9.75” of rain.

Average temperatures were about a half degree cooler than normal in early summer. In Atlanta, the sixth latest occurrence of its first 90° day occurred on July 8th, which was the only day to reach 90° in Atlanta in July. Overall, mean temperatures in the area ran about a half a degree below normal.

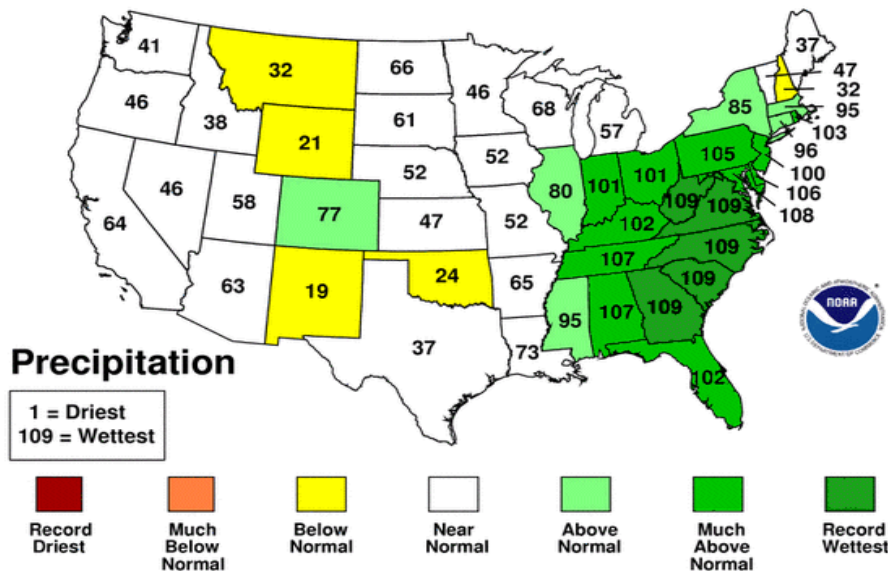
A change to a drier and warmer pattern developed in August and lasted through November. North Georgia saw precipitation fall about 2” below normal through the fall. In central Georgia, precipitation returned to more normal levels from the extreme levels of Spring.

Most of the 90 degree days for the state occurred in August. These warm temperatures lasted into November when Atlanta reached 82° on November 2nd tying for the 3rd warmest reading ever in November. Also, November 5th set the month’s all-time warmest overnight low of 68°. Overall, the mean temperature from August to November was about 2° above normal, with November running nearly 5° above normal.

In December, a strong northwest flow resulted in a dry and much colder pattern. Overall precipitation ran about 2” below normal. Macon only received 1.92” of rain in December when they normally see 3.93”. Temperatures were much colder than normal with the mean temperature running some 3° below normal. ☀

February-July 2003 Statewide Ranks

National Climatic Data Center/NESDIS/NOAA



National map of rainfall statewide precipitation ranking for early 2003.

Forecasters Break the "1 Sigma" Level!

Shirley Lamback
Senior Meteorologist

Summer temperature forecasts made by Peachtree City forecasters in 2003 hit the coveted "1 Sigma" level for the first time. This mark indicates over 69% of all 12-hour forecasts fell within 3° of observed temperatures. For Atlanta, figure 1 shows we achieved that goal 80% of the time for the first 12-hours. This was a 3% improvement over last year. Seven forecasters succeeded in personally breaking the 1 Sigma mark. The higher the Sigma level, the better.

In other measures, our verification statistics for the year showed the office, as a whole, outperformed computer model guidance. Figures 2 and 3 show temperature and

precipitation error trends since 1998 at four sites in our forecasting area (Atlanta, Athens, Rome, and Macon). Forecasters' scores are compared against guidance from a computer model in these charts. For temperature and precipitation scores, lower numbers are best.

Our forecasters bested the model temperatures for the third straight year, with 2003 showing the lowest error rate in the past six years! In the category of precipitation, we continue to show great skill, improving upon model guidance for the seventh year in a row.

In summary, it was another successful year of improved quality in our temperature and precipitation forecasts. Next year, is 1.5 Sigma a possibility? We'll see! ☀

Did You Know...

People are continually amazed at how much information we have packed into our web site. Did you know we offer the following?

- Historical weather data as far back as 1878.
- A "Climate Search Assistant" to help you answer those off-the-wall weather questions (e.g., when was the last time the maximum temperature was below 32 degrees in Macon?).
- A way to submit storm reports directly to our staff.
- Forecast conditions at hourly intervals out to 48 hours (select "Text Forecast" and then "7-Day Point Specific" and then choose "Element Meteogram" from the small window at the top of the page.

For these great links and many others, go to weather.gov and click on **Georgia!**

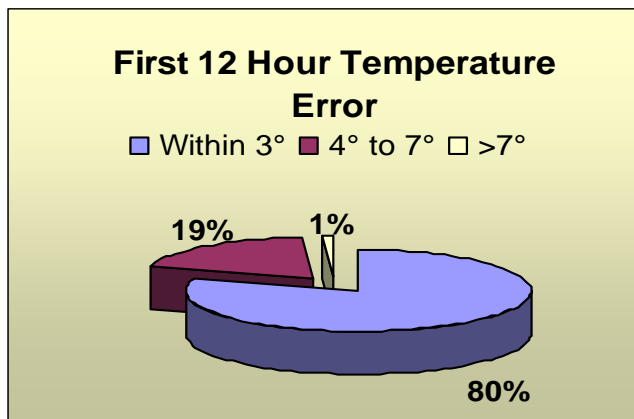
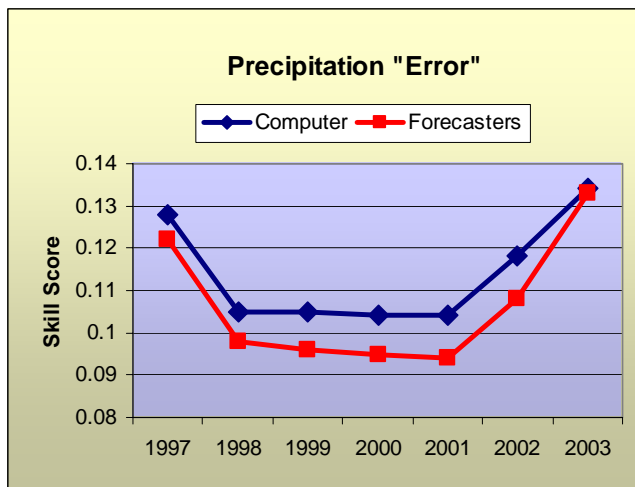
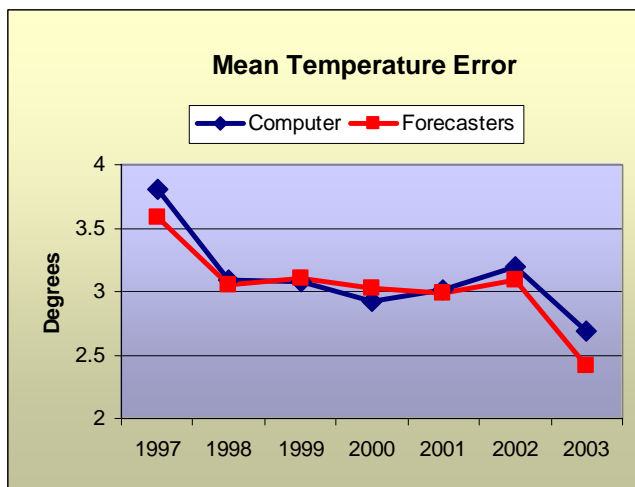


Chart showing distribution of first period (first 12 hours) forecast temperature errors falling for Atlanta Hartsfield-Jackson Airport.



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



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

Severe Weather Performance for 2002

Barry Gooden
Warning Coordination Meteorologist
& Robert Beasley
Meteorologist

“In May alone, 43% (329) of the warnings were issued, with May and July (329 + 144) accounting for 61% of the warnings issued.”

WFO Peachtree City issued 774 severe convective warnings in 2003, a significant increase from the 569 warnings issued in 2002. In May alone, 43% (329) of the warnings were issued, with May and July (329 + 144) accounting for 61% of the warnings issued. February through August accounts for 98% of the warnings issued in 2003. There were 87 tornado warnings for the year; February (3), March (22), April (12), May (46), June (1), and July (3).

Overall verification scores for 2003 improved slightly over those of 2002; a slight increase (improvement) in the Probability of Detection (POD) score and a slight increase (degradation) in the False Alarm Ratio (FAR). These changes combined to bring about a slight increase

(improvement) in the Critical Success Index (CSI). The CSI for 2003 was the best since such records have been kept (1990) and the FAR was the second best (beat only by 2002) observed since 1990.

The verification statistics for 2003 are as follows:

POD: Measures our ability to issue warnings before damage occurs. The optimum is 1.00. POD increased from 0.72 in 2002 (the highest value since 1995) to 0.79 in 2003.

FAR: The percentage of warnings not verified. The optimum is 0.00. FAR increased from 0.367 in 2002 to 0.372 in 2003, but is still one of the lowest observed in the last ten years.

CSI: A combination of the POD and FAR where the optimum is 1.00. CSI improved from 0.51 in 2002 to 0.54 in 2003.

Lead Time: The time between warning issuance and first damage report increased from 9.7 to 13.0 minutes.

Skill scores using both the conventional method and the stricter, exclusive method (where tornado and severe thunderstorm warnings/events are treated separately) are shown in the table below left.

Other statistics developed for WFO Peachtree City are depicted in a rolling 12 month graph, where the preceding 12 months of data are averaged for each plotted point. The graph is shown from 1990, through the mid 1990s, when NEXRAD operations were begun, to the end of 2003. This chart shows the running monthly averages of POD, FAR, and CSI. The chart also shows the months when most of our severe weather occurs and how previous years and months compare.

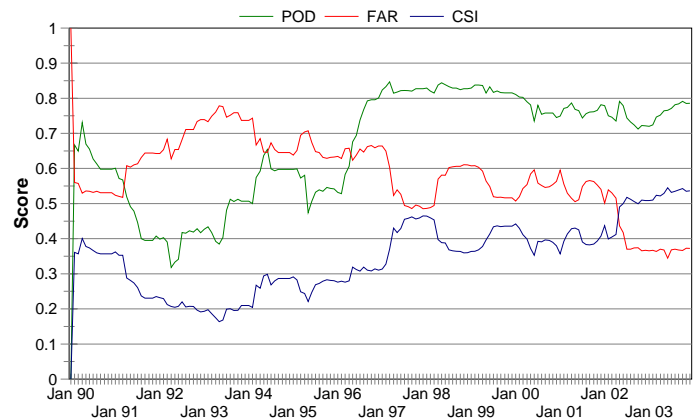
Unverified warnings can be reduced with the assistance of emergency management and spotters taking a more active role of reporting storm damage. The number of unverified warnings from 1995 to 2003 range from near 14% to more than 50% of the warnings issued. This is an area in which we will work with our emergency management and media partners to improve for 2004. ☀

	Exclusive Verification Method*			Inclusive Verification
	Svr Tstm	Tornado	Flash Floods	Svr Tstm & Tornado
Warnings Issued	687	87	246	774
Warned Events	411	4	153	451
Unverified Warnings	264	83	58	288
Unwarned events	154	2	43	122
Total Events	565	6	196	573
POD	.727	.667	.781	.787
FAR	.384	.954	.236	.372
CSI	.500	.045	.629	.537
Lead Time (min.)	12.7	14.0	39.3	13.0

*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.

Rolling 12Month (SVR+TOR) Verification
Jan 1990 - Dec 2003



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

IV-ROCS Comes to "Co-op" Program

Nate Mayes
Hydrometeorological Technician

The Cooperative program at Peachtree City continues to maintain a high level of customer service and appreciation. Currently there are 85 CD (climate) stations, 29 HPD (hourly precipitation) stations and six tipping bucket rain gauges in our program.

This past summer, the new Interactive Voice-Remote Observation Collection System (IV-ROCS) was distributed to our observers. Our office was one of several which pioneered this new system. After a rather bumpy start, the system is becoming more user-friendly. Further modification should alleviate unwanted problems some observers have experienced.

A station inspection of WFO Peachtree City's Cooperative Program resulted in yet another "excellent" rating!

Notable length-of-service awards given in 2003 included:

30 Years

Mr. L. Douglas Griffith (Dallas)
Mrs. Dorothy I. Mercer (Juliette)

25 Years

Mrs. Nancy W. Spence
(Cumming)

20 Years

Mr. William Delbeck (Jasper)

15 Years

Mr. Robert Harris (Taylorsville)
Mr. Robert Simpson (Siloam)

10 Years

Mr. Linard Spain (Embry)
Mr. Terry Rush (Mableton 1N)

A fifty year length-of-service award for an institution was presented to the water treatment plant at Carrollton, Georgia on September 11th.

On a sad note, we lost two members of our observer family this past year. Mrs. Judith Cook

(Suwannee 5E) passed away in April after a battle with cancer. Mr. Clyde Carter (Cedartown 8SE) passed away in late December. Our sympathies go out to their families. ☀

Upper Air Rises

Mike Leary
Hydrometeorological Technician

Our past year has been the best upper-air year since observations began in 1998, thanks to continuous attention to observation and system quality. We networked the ancient upper-air computer to a better PC so data could be directly transferred without use of rare 5.25 floppies. (Yes, we were still using those in 2003). We are looking forward to the day when the antiquated upper air equipment can be replaced.

Our goal is to achieve a better upper-air score using Six Sigma methodologies. To that end, we have already identified premature balloon bursts as one of our biggest problems. One remedy we are trying is gently warming the balloon prior to inflation to increase elasticity. We are still in the measurement phase of the test, but early results look promising. ☀



50 Year Length of Service Award presented to the Carrollton, GA water treatment plant staff by Lans Rothfusz (front left) and Frank Taylor (front right).

Coop Program Log for 2003

- 28,989 travel miles.
- 319 station visits.
- No B-91 (CD) forms missing.
- Only one HPD tape missing.

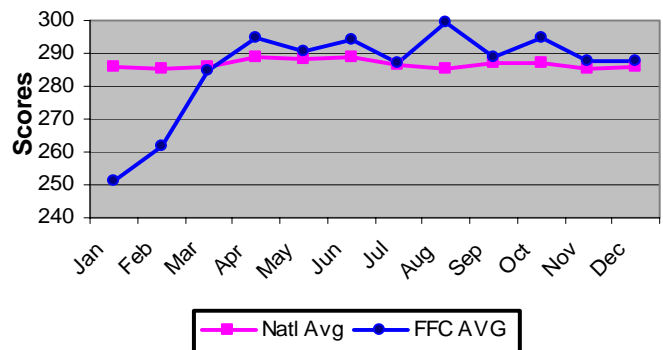
"Tom" Joins NOAA Weather Radio

Gerald Birdow
Hydrometeorological Technician

NOAA Weather Radio saw several software upgrades in 2003. An upgrade in June brought "Tom," a new and smoother voice to the NWR. We now use "Tom" almost exclusively because listeners said he was easier to understand than Craig, and easier to hear than Donna, his two predecessors. Tom's success is because of the upgrade in software and our staff's diligent work with the electronic dictionary.

An important, behind-the-scenes improvement in NWR was the connection of the Stone Mountain transmitter to an emergency backup generator. This addition ensures continuous weather radio broadcasts for the Atlanta area. Our thanks to the Stone Mountain Memorial Association, the De Kalb County Emergency Management Agency, and Georgia Public Broadcasting for helping make this life-saving connection a reality! ☀

2003 Upper Air Data Rankings



“...many of these guidelines were based on information from customers like you.”

Forecast & Warning Operations

Jeffrey Dobur
Forecaster

The Forecast & Warning Team continued to work towards a more effective and efficient office operation throughout 2003. Several objectives were accomplished to achieve this goal. In April, the revamping of duties at the Aviation Forecast Desk, Public Forecast Desk, and Hydrometeorological Technician Desk provided immediate results including a better balance in workload between operational staff and the ability to prioritize and share functions between desks.

Working toward a more consistent overall operation was another important undertaking. The creation of guidelines for updating public and aviation forecasts along with issuing hazardous weather products were made available to staff throughout the year. More importantly, many of these guidelines were based on information from customers like you.

Finally, quality control of information continues to be of utmost importance. From spelling mistakes in our

everyday forecasts to an error in our daily climate information, we have been working toward developing an environment of both manual checking and automated quality control. In August, an automated quality control program we developed was put into service and has been providing valuable information on both the number and type of errors in almost all the products we send out. Throughout 2004, the Forecast & Warning Team will continue to support the improvement of weather forecasts and warnings while increasing efficiency of operations through the greater use of technology. ☀

Aviation Program Explores New Horizons

Von Woods
Senior Meteorologist

Aviation-related activities in the Peachtree City WFO could be described as "under construction" for 2003. Several programs begun last year continued to evolve. Other new adventures have begun. Forecasters' reasoning behind Terminal Aerodrome Forecasts (TAF), for example, are now appended to the standard Area Forecast Discussion (AFD) twice daily. We also expanded

collaboration with NWS meteorologists in the Center Weather Service Unit (CWSU) of the FAA's Air Route and Traffic Control Center in Hampton, GA to ensure forecast consistency for the ATL airport.

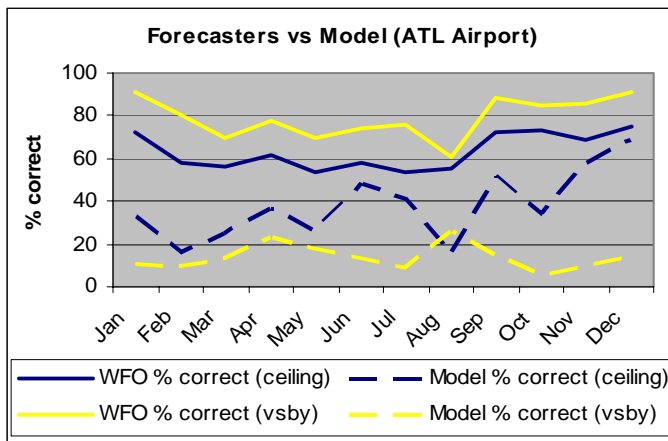
TAF composer programs were updated with several add-ons. The primary addition to the AVNFPS software was MAKTAF which takes numerical guidance and translates it into values used in TAFS. This will give a forecaster a beginning product that they can then adjust, based on their expertise.

In our continuing effort to better serve our customers, a new TAF was added for McCollum Field, Cobb County Airport (RYY). This was done in response to a customer request.

Finally, an internal web site was updated to provide a handy reference for information about each TAF site. Knowledge about the physical characteristics of the TAF site helps our meteorologists prepare better aviation forecasts since local topographic differences affect the formation of ceilings and visibilities in different ways.

On-going quality control and program improvement efforts continued. Among them were semiannual evaluations and idea exchange programs with the Atlanta CWSU and the Flight Service Station at Macon. All parties felt the evaluations were mutually beneficial. Areas of product improvement were recognized and steps were taken to act upon these recommendations.

The graph at left shows the skill of forecasters compared to model (computer) guidance when forecasting ceilings and visibilities at the Atlanta Hartsfield-Jackson Airport in 2003. In both categories, the WFO forecasters out-performed the models by being correct a greater percentage of the time.



Hydrology in 2003: What is the Opposite of Drought?

Jim Noel
Senior Service Hydrologist

The NWS office in Peachtree City was one of the busiest offices within the NWS in 2003. We issued nearly 160 river flood warnings and almost 250 flash flood warnings – more than any year since records began being kept in 1986. Our probability of detection (POD) for flash floods was just over 80% while our false alarm rate (FAR) was around 20%. For river flood warnings, our POD was just over 90% while our FAR was almost 20%.

There were key improvements in the hydrologic program at a time when it was most critical. For flash flood warnings in 2003, detection improved 10% over the average from 1986-2002, with a 30% reduction in warnings that did not verify. The following table compares probability of detection (POD) to false alarm rate (FAR) for 2003 versus 1986-2002 average.

Flash Flood Warnings	POD	FAR
1986-2002	70%	50%
2003	80%	20%

reorganization of the hydrologic program.

Other important projects accomplished during a very busy flood season of 2003 include the following:

- Implementing a novel method of river readings at Hawkinsville to ensure daily hydrologic data remained available.
- Updating impacts to 10% of our hydrologic stations.
- Adding 11 stations to our new local hydrologic model to assist in warnings.
- Implementing the multisensor precipitation estimator software which combines radar and gages to give us a better picture to estimated rainfall.
- Increasing staff training on hydrologic software tools.
- Presenting a paper at the Georgia Hydrologic Workshop in Athens.
- Presenting a research paper on precipitation efficiency at the National

The significant improvements in our hydrologic flash flood program were brought about by the installation of new software in late 2002 called the Flash Flood Monitoring Program, extensive staff training, and

Weather Association Annual Meeting and publishing that same paper in the NWA Digest.

- Cross-training with the Southeast River Forecast Center to improve hydrologic forecasts and warnings. ☀

New Products!!

Jim Noffsinger
Senior Meteorologist

The Forecast Office in Peachtree City continues to use the Graphics Forecast Editor (GFE) to produce new products in addition to the standard zone forecast. Use of the GFE allows our office to produce more detailed forecasts at a higher resolution to better serve our customers needs.

Two examples are the Point Forecast Matrix (PFM) and the Areal Forecast Matrix (AFM) which are both issued twice daily. Both present forecasts of temperature, dew point, relative humidity, wind, and clouds at three-hour increments for the first three days, and then at six-hour increments for days four

(Continued on page 10)

Hydro Tally for 2003

- 52 Flood Watches
- 247 Flash Flood Warnings
- 68 Flash Flood Statements
- 157 River Flood Warnings
- 545 Flood Statements
- 529 Urban/Small Stream Flood Advisories
- 8 Hydrologic Outlooks



Record flooding in West Point, GA in May 2003.

“We issued nearly 160 river flood warnings and almost 250 flash flood warnings – more than any year since records began being kept in 1986.”

Fire Weather Program Gets a New Spark

Brian Lynn
Meteorologist

Fire weather in Georgia had a quiet year in 2003. Only two Fire Weather Watches and two Red Flag Warnings were issued for the entire year for three separate events; two in

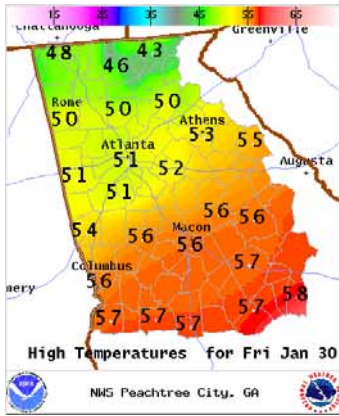
January and one in November. This low number was due, to a great extent, to the regular periods of rain throughout the year.

The Fire Weather Program is currently going through a transition. Mr. Brian Lynn has become the new program

leader and has taken over the program since July of 2003. He will be getting training with respect to fire weather throughout the 2004 year and will be evaluating the office Fire Weather Program with a particular emphasis on customer service. ☀

New Products (cont.)

(Continued from page 9)



A sample detailed map of forecast high temperatures (see our web page). New, high-resolution text forecasts provided by the Peachtree City WFO are derived from the data in images like this.

through seven. Precipitation probability and amounts are also included for each 12-hour time period. In the PFM, these parameters are forecast specifically for 13 cities in Georgia. The AFM, on the other hand, averages these grid-point forecasts for each of 27 pre-defined groups of counties in our forecast area.

A more concise Selected Cities Forecast (SFT) is now being produced for 13 cities across north and middle Georgia. This table summarizes the weather, temperatures, and rain chances for these cities for the next seven days.

Warning products for severe thunderstorms, tornadoes, and flash floods remain the same.

We continue to issue Significant Weather Alerts under the "SPS" header for thunderstorms that produce strong winds, heavy rainfall, pea size hail, or excessive lightning, but are expected to remain below severe levels.

Some winter weather products that used to be issued under the non-precipitation warning (NPW) heading are now issued under the winter storm warning (WSW) header. These include Wind Chill watches, warnings and advisories, and blowing snow advisories.

For a look at these new products, go to weather.gov and click on Georgia. ☀

Students Volunteer!

Ken McMullen
Senior Meteorologist

The student volunteer program continued evolving. In March and April, we advertised the volunteer positions on our website. We limited the positions to 8, split evenly between college and high school students. In May, we selected our volunteers for the Summer and School Year seasons. We had students from Towson University, Jackson State University, UGA, Pepperell High School near Rome, and the Atlanta area.

Each volunteer was given a mentor who they worked with each time they were here. We had a forecast contest where the students had to forecast a minimum and maximum temperature for the next 24 hours as well as whether or not it was going to rain.

Most of the volunteers worked through August and then went back to school. However, three volunteers wanted to continue working with us through the school year. During the fall, we picked up two more volunteers, one was a middle school student and the other was a senior from Georgia Tech.

At least three students said that they want to pursue a career in the National Weather Service after volunteering. Our hopes are to continue to produce the same sentiments with the next group of students. ☀

Interested in becoming a student volunteer? Contact Mr. Kent McMullen at the Peachtree City WFO (770-486-1133).

Administrative Update

Deborah Connell
Administrative Assistant

Due to last year's vendor accounts and filing system improvements, 2003 has been a more effective and smooth running process in the administrative realm. The staff roster has seen a bit of upheaval, however.

In January, we bade farewell to Mr. James Blair, Jr., one of our three Hydrometeorological Technicians, who retired after 38 years of dedicated service to the NWS. Mr. Philip Grigsby arrived from Oklahoma in March to replace Mr. Blair as a Meteorologist Intern.

In the Electronics Technician ranks Mr. Gary Jones transferred to the WFO in Lincoln, Illinois. Mr. Christopher Carney, from National Reconditioning Center in Kansas City, MO, was selected to fill the vacancy.

Among forecasters, Mr. Dean Hutsell transferred to the Center Weather Service Unit (CWSU) in Jacksonville, FL. Ms. Patricia Atwell transferred from the WFO in Birmingham, AL, to replace him. Finally, Mr. Warren Rodie, Meteorologist in Charge of the Hampton CWSU, transferred to the CWSU in Boulder, CO. On December 28th, Dr. Charles West was selected from the Hampton CWSU to replace him. ☀

Staffing Overview at Year's End

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

Special Feature: GraphiCast a Home Run!

Terry Murhpy
Meteorologist

Can a picture be worth a thousand words? Based on customer comments on our new "GraphiCast", apparently so. What is "GraphiCast"? Think of how school teachers use blackboards to clear up confusing concepts by drawing diagrams; or how John Madden uses a "telestrator" to highlight important moments in a football game.

Early in 2003, our forecasters started posting a meteorological blackboard called "GraphiCast" on the website. Using arrows, lines, coloring, etc., the forecasters convey in a concise, graphical

manner as much information as possible about weather events of significance in north and central Georgia.

The GraphiCast frequently shows a radar image with annotations depicting where precipitation will be in the next couple of hours. Depending on the situation, the drawing may show who will get the most precipitation, and whether it will be rain, snow or ice. In spring and summer, thunderstorm information prevails.

Precipitation is not all that shows up on the GraphiCast. Fog, clouds, fronts and other weather phenomena can be "discussed". Whatever the situation, when the weather is active, the GraphiCast shows



New GraphiCast available on the Peachtree City NWS web page during active weather.

what we expect, where we expect it, and when it should arrive. Check our website and see what the buzz is all about! ☀

Web Work in 2002

Terry Murphy
Meteorologist

Several new features debuted on the Peachtree City NWS website in 2003. Some were new products, while others were improved services.

Early in the year the "GraphiCast" was introduced (see Special Feature above). By mid-year, the GraphiCast had become wildly popular - by far the most visited page on our site.

Digging up climate information on Georgia cities became much easier during 2003. Daily, monthly, and yearly normals are neatly organized and only one click away. An archive of past weather is also available. But the power of this new service is the ability to form a question

and search for an answer. Examples: "When was the last time Macon recorded a low temperature below 10°(F)?" ; or, "What is the longest string of consecutive days with no rain in Atlanta?" Answers to questions like these are available using the "Climate Search Assistant".

Another new service is being used by agencies involved in forestry. They can now use the web to request special "spot" forecasts needed for prescribed burns. The "Advanced Hydrologic Prediction Service" (AHPS) was introduced on the website in 2003. AHPS is a suite of information-rich products related to rivers and lakes in Georgia and across the nation.

The Graphical 7-Day Forecast also saw significant enhancement, with maps for several new weather parameters becoming available.

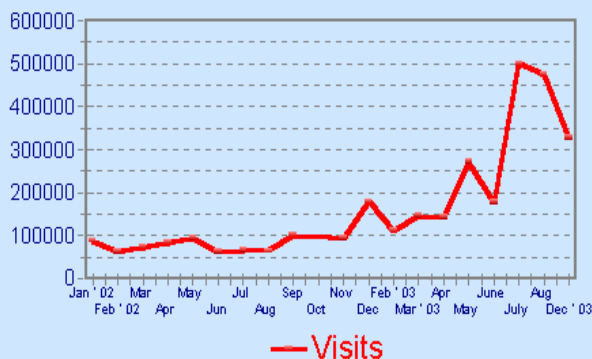
The number of visits to our website more than doubled, increasing from a monthly average of just under 100,000 in 2002 to 270,000 in 2003. July was our busiest month with just over a half million visits. The busiest day was July 22 (52,726 visits) when a wide area of the state was affected by severe thunderstorms. ☀

Top Peachtree City Web Pages for 2003

1. GraphiCast
2. Page / Product Organizer
3. Current Conditions
4. Watches/Warnings
5. Current radar pop-up page associated with "GraphiCast".

Monthly Website Visits

January 2002 - December 2003



All Systems Go!

Richard Black
Electronics Systems Analyst



New AWIPS workstations provide vivid, flat-screen monitors (including an additional screen), more workspace, and vastly improved speed over its predecessor.

This year, like many other years, we looked to improve our products and services to our customers. For our equipment, this is accomplished through hardware upgrades and replacements, software modifications, and preventive maintenance to increase system reliability. All these improve our overall product. The following are highlights from the past year for each program area.

ASOS: Significant milestones of the Automated Surface Observing Systems (ASOS) this year included the completion of

software upgrades, along with hardware upgrades of the main computer, the AWPAG precipitation gauge, and a temperature/dew point sensor replacement.

AWIPS: In 2003, AWIPS received two major software upgrades, several minor software patches. Along with these enhancements, our AWIPS workstations were completely replaced with powerful new CPUs and flat-screen LCD monitors. These advancements have provided more reliability, greater efficiency, and a smoother running forecast office.

WSR-88D Radar: The Doppler radar received a few software upgrades this year and still

maintains an impressive availability rate of 97.5%.

Upper Air: Despite being an antiquated and often-troubling system, we continue to defy the odds by having a high number of successful flights. During one monthly report period this past summer we finished first in the nation in flight statistics. Although this is one of our oldest systems, it has proven very reliable this year.

The Peachtree City WFO takes pride in its core electronics systems and is proud that these systems are available 97% of the time. This high availability rate can only be achieved by a dedicated electronics team that offers professionalism and dedication "24/7." ☀

"Peachtree City recognized five additional StormReady counties, bringing the total number of counties within our CWA to 21."

StormReady Spreads and Outreach Continues

Patricia Atwell
Meteorologist
& Barry Gooden
Warning Coord. Meteorologist

The Peachtree City WFO continued to participate in outreach and preparedness opportunities within North and Central Georgia. In 2003, Peachtree City

recognized five additional StormReady counties, bringing the total number of counties within our CWA to 21. Statewide there are now 43 recognized StormReady counties.

In the Spotter program, classes were again conducted from January through mid-March. Heading our customers' comments, we also began a "second season" of talks from September through mid-November. A total of 17 Spotter classes were held with 574 individuals attending.

During 2003, 42 office tours were hosted at the Peachtree City office, allowing 641 visitors to see first-hand forecasting techniques, warning dissemination, and preparation of weather. An Open House was held October 25th, bringing

an additional 123 people through our office. During the Open House, visitors also had the opportunity to experience the Carroll County Safe-House which was on display.

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, Great Georgia Air Show, and a special EMA Open House.

Once again, the staff assisted in conducting several courses at the Georgia Public Safety Training Center in Forsyth, including the Hazardous Weather and Flood Preparedness Course and the Flood Fight Course. ☀



Lans Rothfusz and Barry Gooden (far right) present StormReady recognition to Columbus/Muscogee County officials Riley Land (left) and Chief Waters (right).

Science & Training Hold Steady

Gary Beeley
Science and Operations Officer

A vigorous training schedule was in place at the Peachtree City WFO in 2003. A total of 1,875 hours of training were completed by forecasters and hydrometeorological technicians (HMTs). This was an average of about 82 hours per individual.

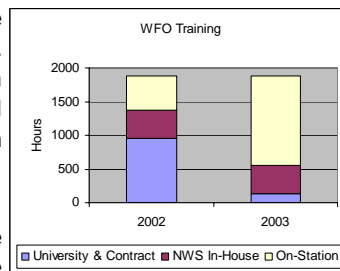
Training goals were defined in a Professional Development Training Plan for each person in October of 2002. These goals were broken down as either mandatory or elective. Forecasters were required to complete 50 hours and HMTs had a requirement of 20 hours. Nearly all completed their requirements. A variety of training methods were used as noted in the adjacent chart.

One goal of the training program was the completion of the COMET Numerical Weather Prediction course by all forecasters. Three consecutive days were scheduled for each forecaster to complete the course, take an exam, and receive a certificate. This goal was achieved.

The Weather Event Simulator (WES) continued as a vital part of science and training. The WES was used in several ways to enhance the training program, including post-storm analyses of an ice storm event and a severe weather episode. It was also used to enhance the warning program by emphasizing and sharing the best warning techniques with each forecaster.

Forecasters also gained additional knowledge of a radar signature called Mid-Altitude Radial Convergence (MARC). This feature was observed in a case which caused severe wind damage in Calhoun, Georgia in May of 2002.

Other training and science items dealt with refining the way forecasters work with the Graphical Forecast Editor (GFE) in issuing gridded forecasts of various weather elements. Several "smart tool" scripts were evaluated and made available to forecasters. New collaboration methods and requirements between NWS offices added a few wrinkles in forecast preparation processes. These new methods are being refined by forecasters each day as they continue to learn the GFE way of creating forecasts.



"A total of 1,875 hours of training were completed by (the staff, giving) an average of about 82 hours per individual."

Severe Weather

(Continued from page 3)

\$31.37 million in damage was attributed to flash floods, occurring mostly between May and early August. The most notable flash floods occurred overnight on May 7th in west central Georgia across Troup, Harris, and Muscogee counties, where damage exceeded \$10 million. Other significant flash floods occurred on June 17th, when 5 to 10 inches of rain fell across much of north and west central Georgia, and on July 1st in association with tropical storm Bill. A catastrophic flood occurred in Gilmer county on July 16th, when at least one home, a church, and other structures were swept down the Cosawatee River as a cluster of near stationary thunderstorms

dumped up to seven inches of rain in a 3-hour period.

Thunderstorm winds were responsible for the next most significant amount of weather-related damage in 2003,

followed by lightning, tornadoes, hail, heavy rain, and strong winds. There were 55 weather-related events with estimated damages \geq \$100,000 and 29 events with \geq \$250,000 in damages. ☀

Tornadoes in Peachtree City NWS Forecast Area in 2003								
Date	County	Location	Strength	Path Length (mi)	Path Width (yds)	Deaths	Injuries	Damage
05/06	Cherokee	1W Keithsburg	F1	1	50	0	0	\$10K
05/06	Madison	9NE Danielsville	F1	3	150	0	0	\$500K
05/07	Heard	5W Centralhatchee	F0	0.1	50	0	0	\$80K
05/07	Heard	4N Franklin	F0	0.2	50	0	0	\$3K
05/07	Coweta	4WSW Dresden	F0	0.1	25	0	0	\$0.5K
07/01	Morgan	8SSW Madison	F1	3	75	0	0	\$184.5K



*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