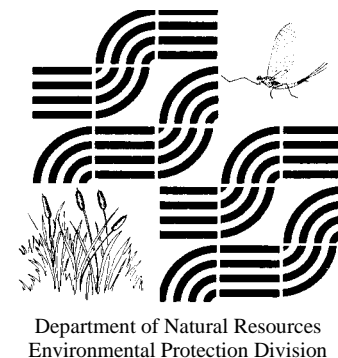


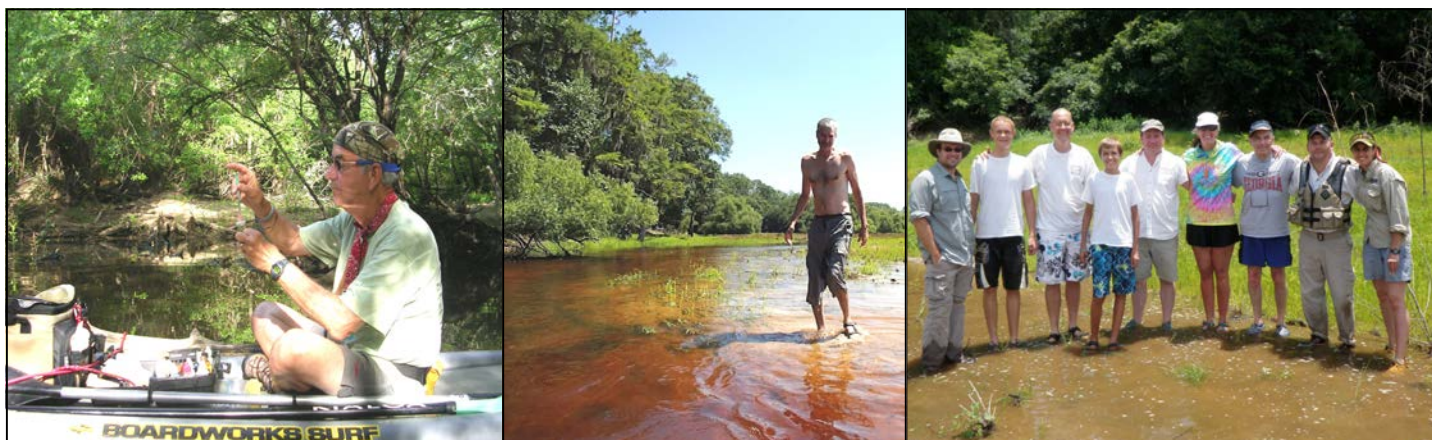
GEORGIA

Adopt-A-Stream

Volume 19, Number 4, July/August 2012
Editors: Allison Hughes, Tara Muenz



Paddle Georgia 2012: The Altamaha River



The 2012 Paddle Georgia (PG) event, sponsored by the Georgia River Network (GRN), took over 300 paddlers down a 105-mile stretch of the Altamaha River. We began the seven day journey on June 16th just up river of the Moody Forest Natural Area, continuing the paddle through the town of Jesup to our journey's end on June 22nd in the sleepy coastal town of Darien.

For the Adopt-A-Stream (AAS) trainers and coordinators, this is a major event that includes chemical monitoring certifications, on the river instruction and education, water quality sampling, and sample processing. We certainly value this opportunity to work with GRN and to meet the many citizens that experience the river with us. Preparation starts early with charting the waters, investigating the history and current status of the river, selecting sample sites, creating maps, assembling our team and getting the boats ready (and for some, paddle boards) for this weeklong adventure.

This year we were fortunate to recruit Jeremy Smith and Brandon Moody, members of EPD's Ambient Monitoring Unit, to contribute their resources and knowledge during the event. Together we created the sampling strategy, and also launched a special collaborative study examining and comparing volunteer water quality testing methods with those at the regulatory level, asking ourselves, 'do they tell us the same story?' In addition to EPD's support, we recruited AAS certified trainers, board members and PG alumni to help us with our goals for the week. Our team this year was strong and dedicated, collecting and processing many water quality samples, and certifying over thirty PG participants and teachers in AAS chemical monitoring methods. We can't thank them enough for their contributions in making this an effective and fun event. Many thanks to trainers Tom Sewell (Hopewell Middle School), Bob Bourne (AAS Board Member), Ruth Mead (Phinizy Swamp Nature Park), and Harold Harbert (EPD Outreach Unit) as well as AAS board member Steve Blackburn, his niece Jessica from Colorado, and our 'AAS groupies' Mike & Nicole DeLisle, Josh Rosen, Taylor and Tami Morris, the Newman Family, Katrina Ostrowicki, Christa Vanek and the many others that helped during the week. We can't thank you enough!

Reality of the River

The Altamaha River is one of Georgia's last remaining free flowing streams. Created by the merging of two major rivers, the Oconee and Ocmulgee, the Altamaha flows through the Coastal Plain Physiographic Province 137 miles before reaching the Atlantic Ocean. As our largest watershed in Georgia, the river drains a watershed of 14,000 square miles and is reportedly the third largest contributor of fresh water to the Atlantic Ocean from North America. Over 100 species of rare or endangered plants and animals inhabit this watershed, including the Altamaha Spiny mussel (*Elliptio spinosa*), Atlantic Sturgeon (*Acipenser oxyrinchus*), Swallow-tailed Kite (*Elanoides forficatus*) and the Franklin Tree (*Franklinia alata*). The Altamaha River receives inputs from several permitted

(continued on page 2)

Paddle Georgia 2012 Continued...

discharges stemming from paper mills, water reclamation facilities and nuclear power facilities. Some stretches of the river are on Georgia's 305(b)/303(d) list of impaired waters (refer to <http://gaepd.org/Documents/305b.html> for more information). The Altamaha River and its tributaries are listed for violations of fecal coliform bacteria, dissolved oxygen, and for not supporting fish communities due to nonpoint source pollution such as urban runoff and other sources such as municipal facilities.

Our Findings

Floating along the river along with the other paddlers, our sampling strategy targeted tributaries and sections of the mainstem that were 'listed as impaired' or had major discharges coming in that might influence the water quality. We sampled before and after these streams and inputs to determine if there were any major influences to the river. These samples were used for screening purposes to give us an idea of the water quality of the watershed and to determine if there were any sites of concern. Thirty-two tributaries and forty-four mainstem sites were sampled along the paddle. We also took samples from pipe discharges. We sampled over thirty-three water quality parameters otherwise known as 'indicators,' including pH, dissolved oxygen, air and water temperature, conductivity, nitrate, phosphate, ammonia, alkalinity, hardness, turbidity, BOD (biochemical oxygen demand), metals and *E. coli* bacteria.

Summary table of Paddle Georgia 2012 data (Min-Max) by tributaries (Trib) and mainstem (Main) sites on the Altamaha River.

PARAMETER	TRIB	MAIN
pH	5.0-8.8	6.3-7.8
Dissolved Oxygen (mg/L)	2.0-10.0	4.1-7.0
Conductivity (µs/cm)	60-5,750	100-423
Water Temperature (°C)	21.0-33.0	25.7-29.3
Turbidity (JTU)	0-30	5-150
Total Hardness (ppm)	38-425	25-120
Total Alkalinity (ppm)	40-130	40-100
<i>E. coli</i> (cfu/100 ml)	0-1,967	0-200
Salinity (ppt)	0-5	0
Metals (see AAS Website)		
Nutrients (Ammonia, Nitrate/Nitrite, TKN, TOC, Total Phosphorus (see AAS website))		
Total No. Sites Sampled	32	44

During the daily journey we interacted with many of the paddlers who often asked, 'how is the water looking today?' The table above is a brief summary of tributary and mainstem water quality values for the Altamaha River, and much more information can be found on our website at www.georgiaadoptastream.org by clicking on 'Data Views' and navigating to 'Paddle Georgia,' then '2012 Maps' or '2012 Data.'

On our website you can see a report of all the data collected by Adopt-A-Stream methods and by EPD's Ambient Monitoring Unit regulatory methods.

How do you interpret the data? A first step to understanding the data we have is to reference the State of Georgia's surface water standards or recommended levels for certain parameters. You can find these standards by accessing this online document from EPD:

<http://tinyurl.com/EPD-water-standards>

From the collected data it appeared that none of the sites violated any of these state standards. At the federal level, we did see a few sites with *E.coli* levels higher than EPA recommended levels for swimming waters (Georgia EPD does not have state standards for *E.coli*).

Overall, tributary sites had a broader range of values than the mainstem sites, which we tend to find year to



The 2012 Paddle Georgia Route from the confluence to Darien, GA. The black dots denote the daily starting and stopping points.

(continued on page 3)

Paddle Georgia 2012 Continued...

year on PG. This year, influencing the main river were a broad array of contributions from the tributaries, especially those considered 'blackwater streams,' or streams that originate from swamps and wetlands. These waters are stained from decaying organic matter and look like tea (see middle image on front page). They generally contribute higher levels of acids and carry higher levels of dissolved organic matter with little suspended sediments, and usually have lower dissolved oxygen in the warmer temperatures of the year. Many of the values that appeared higher or lower than expected can be explained by this type of river system.

Data from this event are shared with watershed organizations and the Environmental Protection Division so that sites we identified with 'hits' can be addressed as necessary. Our data was simply a snapshot of what exists within the Altamaha, and more frequent sampling would be welcomed to better understand what is occurring in regards to effects from any inputs or discharges, and to simply gather a solid base of background levels in this watershed.

Call for Volunteers in the Altamaha

Our sampling throughout the week of Paddle Georgia was a snapshot of the water quality and health of these rivers, only scratching the surface of what was occurring. To develop baseline data for the Altamaha Basin, we are looking for local volunteers to monitor sites throughout the watershed. If you are interested in adopting one of the Paddle Georgia monitoring sites or one of your own interest to help us gather much needed data, please contact the Altamaha Riverkeeper (<http://www.altamahariverkeeper.org>) or Georgia Adopt-A-Stream for more information.

**See you at Paddle Georgia 2013
on the Ogeechee River!**

For more information visit www.garivers.org



Members of EPD's Ambient Monitoring Unit
Jeremy Smith and Brandon Moody discuss
sampling strategy on the mainstem.



A small American alligator, *Alligator mississippiensis* seen along the marsh banks as we drifted into Darien and was our PG mascot for 2012.

SAVE THE DATE: CONFLUENCE 2013
Saturday, March 16th
Gwinnett Environmental & Heritage Center

Confluence is a one-day event designed to support and educate our volunteers. As the word implies, volunteers will come together from the headwater streams, the coastal estuaries and everywhere between to further educate themselves about our waterways and nonpoint source pollution. This will be a great opportunity to share experiences, knowledge and advice, as well as honor the collective efforts that have positively influenced water quality within the State of Georgia. Please let us know which topics you would like to have at Confluence 2013 by filling out this short survey by Oct. 1st:

<http://www.surveymonkey.com/s/2V8YVYS>

2013 will also be the 20th Anniversary of Georgia Adopt-A-Stream! A big celebration will be a part of this weekend with Confluence and we hope you will join us.

Get Trained in the Visual Program with Georgia Adopt-A-Stream and Rivers Alive

New this year to Georgia Adopt-A-Stream and Rivers Alive is the **Stream Habitat Survey**, a way to check on the physical health of your stream or river. The form looks at 10 parameters including riparian/buffer width, vegetative protection, stability of stream banks, flow, riffles/runs/pools, and many others. The Visual Program also includes instruction on a cross-section survey and the Wentworth pebble count. Data from the stream survey can now be entered online.

See What the New Survey is all About!

You can find the 2-page stream survey on the websites of Georgia Adopt-A-Stream or Rivers Alive. It comes with a photo interpretation field guide and of course, the training workshop!



To schedule a visual workshop in your area
call the State Office at 404-675-6240.

Please visit our calendar of events at www.GeorgiaAdoptAStream.org
for upcoming monitoring workshops and Adopt-A-Stream events.

Volume 19, Number 4, July/August 2012

The Georgia Adopt-A-Stream Newsletter is published six times per year. For more information about the Georgia Adopt-A-Stream program or to contribute to the newsletter, call or write to:

Georgia Adopt-A-Stream
Environmental Protection Division
4220 International Parkway, Suite 101
Atlanta, GA 30354
404.675.6240
www.GeorgiaAdoptAStream.org

Go Blue! Sign up for our
e-newsletter by emailing
AAS@gaepd.org or
calling 404.675.6240



Dragonfly



Riffle Beetle



Dobsonfly



Stonefly



Net Spinning Caddisfly