GEORGIA

Adopt-A-Stream

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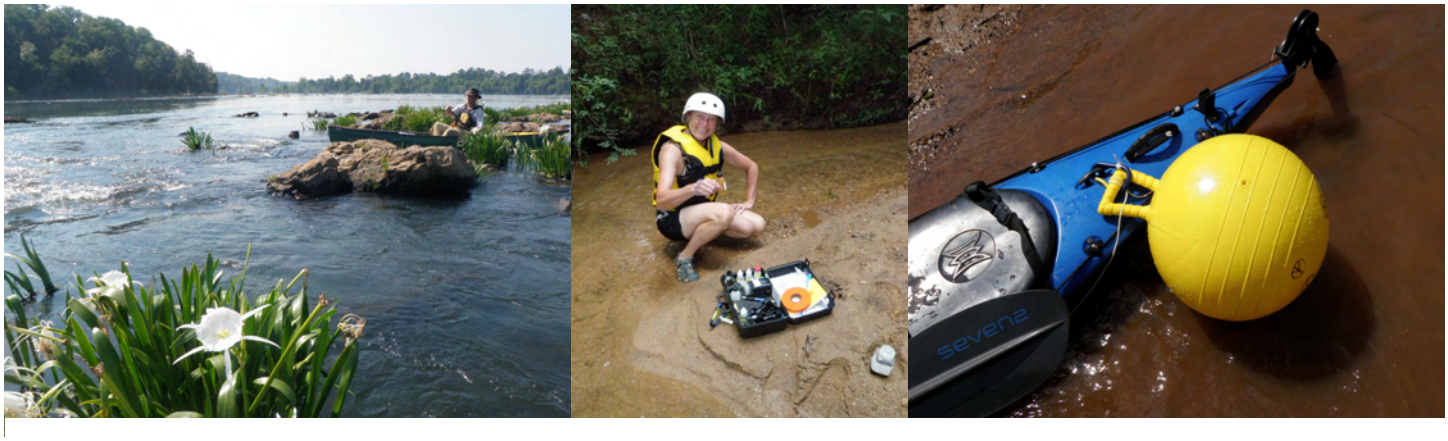
Department of Natural Resources
Environmental Protection Division

Paddle Georgia 2010: Broad and Savannah Rivers



The 2010 Paddle Georgia (PG) event, sponsored by the Georgia River Network, took over 300 paddlers down an 82-mile adventure on the beautiful Broad and Savannah rivers. The paddle occurred from June 18th through the 25th, but Georgia Adopt-A-Stream's adventure started many months before.

For the AAS trainers and coordinators, this is a major event that includes certifications, on the river instruction, water quality sampling, and long nights of sample processing. All of it however, is a worthwhile experience that we look forward to every year. As is for the Georgia River Network, preparation starts early with charting the waters, investigating the history and current status of the rivers, selecting sample sites, preparing maps, assembling our team, and lubing up the boats for this 7-day event.

This year we were fortunate to have the largest groups of helpers we've ever had, who spent many a long day (and night) wrestling big yellow buoys, collecting and processing water quality samples, and certifying over thirty PG participants in AAS chemical methods. We can't thank them enough and hope, just hope they won't remember those long nights and will want to return next year! Many thanks go to trainers Scarlett Fuller (Hall County) and Ruth Mead (Columbia County, in above image), AAS board members Bob Bourne and Steve Blackburn (and once again his niece Jessica), one of our die-hard volunteers from Fayette County Mike DeLisle, the Olive family, Outreach Unit Manager Harold Harbert, among many others. This year also presented us with the broadest range of ages volunteering for AAS; anywhere from nine on up. It was very encouraging to see everyone, especially our youth so concerned about the health of our waterways, as we look to them as the future stewards of our rivers.

Reality of the Rivers

The Broad and Savannah Rivers flow through four physiographic regions: Blue Ridge Mountains, Piedmont, Upper Coastal Plain and Lower Coastal Plain. From its headwaters to the Atlantic Ocean the Savannah River travels about 300 miles and drains a watershed of 10,577 square miles. The Broad River, one of the last free-flowing rivers in Georgia, comes to its confluence with the Savannah River at Clarks Hill/Strom Thurmond Reservoir and drains a little under 1,500 square miles. Both rivers harbor unique aquatic critters and plants including many species of fishes, namely the Bartram's Bass, *Micropterus M. coosae* and the Robust Redhorse, *Moxostoma robustum* as well as the endangered Shoal Lily, *Hymenocallis occidentalis* (pictured above). Not unique to many rivers today in Georgia is the fact that certain stretches are on Georgia's 305(b)/303(d) list of impaired waters (refer to http://gaepd.org/Documents/305b.html for more information). The Broad River is listed for violations of fecal coliform bacteria originating from nonpoint sources. The mainstem of the Savannah River, which is designated as a drinking water source, is listed in violation for its dissolved oxygen, *E. coli* and lead levels.

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Paddle Georgia Continued...

Data Findings

Because we were 'going with the flow' of the other paddlers, our sampling strategy was not on a watershed level, but rather on a linear scale. We sampled tributaries and sections of the mainstem that were 'listed,' as well as mainstem segments before and after these streams to determine if there were any major inputs or influences to the main river. These samples were used for screening purposes to capture an idea of the basic water quality of the rivers, and to see if there were any sites of concern. Thirty-nine tributaries and thirty-two mainstem sites were sampled along the paddle (others were on the lake or directly from pipe discharges). We sampled for pH, dissolved oxygen, air and water temperature, conductivity, nitrate, phosphate, ammonia, alkalinity and *E. coli* bacteria.

Summary table of Paddle Georgia data (Min-Max) by tributaries (Trib) and mainstem (Main) sites on the Broad (B) and Savannah (S) rivers.

PARAMETER	TRIB (B)	TRIB (S)	MAIN (B)	MAIN (S)
pH	6-0-7.5	6-9.2	6.7-7.9	6.4-6.8
Dissolved Oxygen (mg/L)	2.8-8.1	4.8-11.2	5.0-7.4	6.4-8.7
Conductivity (µs/cm)	30-290	40-140	60-70	40-110
Water Temperature °C	20.7-29.8	16.6-32.4	24.0-31.5	16.1-23.8
Nitrate-N (mg/L)	0-2	0-0.15	0-1.0	0-0.15
O-Phosphate (mg/L)	0.04-0.47	0.02-0.63	0.1-0.3	0.03-0.22
Ammonia (mg/L)	0-0.75	0.25-1.5	0-0.75	0-0.75
E. coli (cfu/100 ml)	0-533	0-1833	0-267	0-267

As we were sampling, paddlers had the chance to join in on the fun and ask questions such as 'how is the water looking today?' The above table is a brief summary of tributary and mainstem water quality values between the Broad and Savannah Rivers. You can see that tributary sites for both rivers had a broader range of values than the mainstem sites. We also noticed more extreme values of our parameters in the tributaries, and this was seen on the Broad River especially with higher *E. coli* and conductivity levels and lower oxygen levels. We did see that some of the listed streams were still showing signs of impact, and that many were being impacted due to streambank erosion. For more views of all the data from Paddle Georgia 2010, please visit our website at www.georgiaadoptastream.org. Click on 'Data views' and navigate to 'Paddle Georgia 2010 Maps or Data.'

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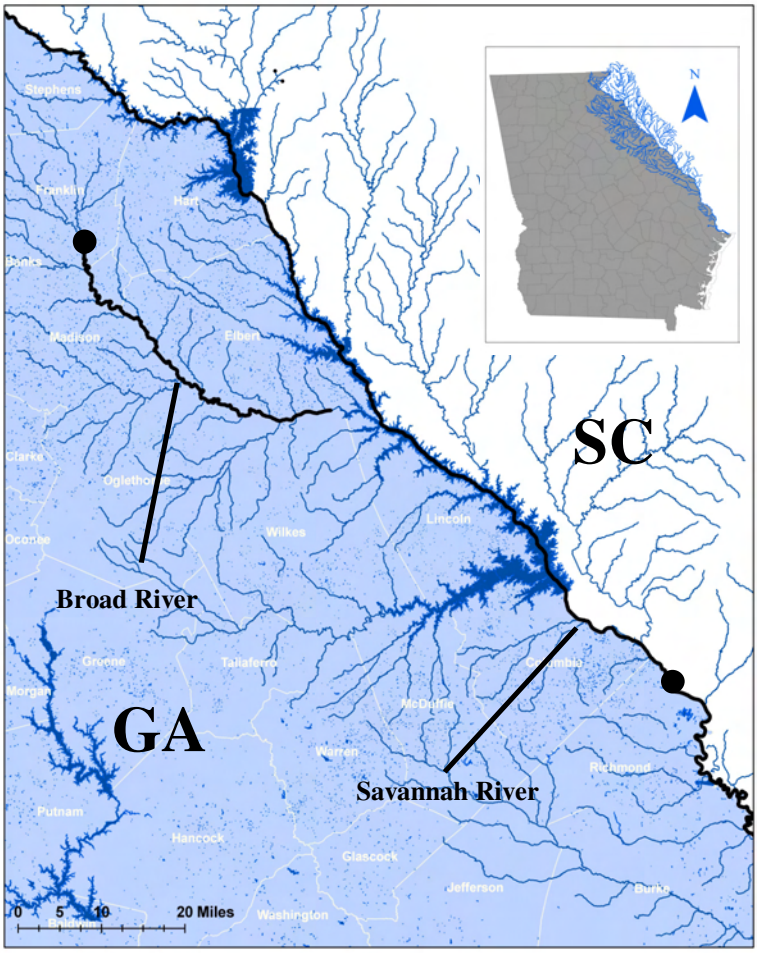

The 2010 Paddle Georgia Route from Franklin Springs to Augusta, Georgia. The black spots denote the starting and ending points.

The Olive family team Justin and Robert, pipette an *E. coli* sample onto Petrifilm growth plates.

AAS State Coordinators Tara Muenz (L) and Allison Hughes (R).

We Want You!

We are Now Accepting Nominations for the 2010 AAS Awards

Yes, we do want you, to recognize and celebrate your efforts supporting Georgia Adopt-A-Stream and water quality throughout the State. We encourage you to nominate yourself or others for any one of the seven categories listed below, so please take a moment to reflect on your activities and submit a well-deserved nomination!

Nominations should include a short description of how the volunteer(s) embodied the four goals of Adopt-A-Stream (Awareness, Data Collection, Partnerships, Tools and Training) and excelled in their volunteerism and water protection over the last year. Supporting materials are also accepted. To find last year's winners, please see our March/April 2010 newsletter.

Deadline for submissions: January 10, 2011.

Awards will be given at our volunteer conference called 'The Confluence' to be held at Gwinnett Environmental and Heritage Center on Saturday, March 26th, 2011. Winners will receive free registration to The Confluence.

VOLUNTEER AWARDS:

Volunteer of the Year: Have you gone beyond the call of duty to protect Georgia's waterways and support the AAS goals?

Extraordinary Volunteer Watershed Effort: Have you taken the watershed approach to protect Georgia's waterways?

Red Flag Award: Have you taken action to address a water quality problem at your sampling site?

Outstanding Outreach and Partnership: Have you effectively implemented AAS outreach efforts and/or created a strong network of community partnerships?

Adopt-A-Stream in Action: Have you utilized non-traditional formats (multimedia, art, website, music, You Tube, etc.) to raise awareness about water quality?

Excellence in Data Collection: Do you consistently and carefully collect AAS QA/QC data, recognizing the importance of data integrity in your monitoring program?

Nymph Award: Are you new to the AAS program in the past year and have excelled in meeting its four goals?

WATERSHED AWARDS:

These awards recognize local public utilities, government agencies, regional commissions, non-profits, and watershed organizations that have exceeded standards in implementing the four Adopt-A-Stream goals. Contact Adopt-A-Stream for more information and an application.

Award nominations are accepted through the website: www.GeorgiaAdoptAStream.org. You can also e-mail entries to AAS@gaepd.org, or send them to:

Georgia Adopt-A-Stream
Environmental Protection Division
4220 International Pkwy. Suite 101
Atlanta, GA 30354
404-675-6240

Paddle Georgia Continued...

Call for Volunteers

Our sampling throughout the week of Paddle Georgia was only a snapshot of the water quality and health of these rivers, scratching the surface of what was occurring. To develop baseline data for the Broad and Savannah Rivers, we are looking for local volunteers to monitor sites throughout the watershed. If you are interested in adopting one of our Paddle Georgia monitoring sites to help us gather much needed data, please contact AAS, the Savannah Riverkeeper (http://www.savannahriverkeeper.org) or the Broad River Watershed Association (http://www.brwa.org) for more information.

A Spiny Softshell turtle, *Apalone spinifera*, was found on the Broad River.

See you at Paddle Georgia 2011 on the Oconee River!

For more information on PG visit :

http://www.garivers.org/paddle_georgia/pghome.html

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

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

Dragonfly

Riffle Beetle

Dobsonfly

Stonefly

Net Spinning Caddisfly