

Georgia Chapter— American Fisheries Society



The Bycatch — Fall  2008

Edited by: Shannon Albeke, UGA Fisheries

We are on the web:

<http://www.uga.edu/ugafish/ga-afs/home.htm>

Fun Factoids:

- Clarks Hill Reservoir is the largest man-made lake east of the Mississippi River
- Georgia has approximately 4,000 miles of trout streams
- Georgia has [no natural lakes](#).

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SATILLA RIVER FLATHEAD CATFISH PROJECT

The Satilla River historically has been one of the premier sunfish angling destinations in Georgia, with redbreast sunfish being one of the most sought after species. That is until the flathead catfish *Pylodictis olivaris* were first discovered in the lower portion of the Satilla River in 1996. Since that time, they have expanded downstream to the freshwater-saltwater wedge and have been collected upstream of the US Highway 301 Bridge. Observed declines in the density of redbreast sunfish, channel catfish and bullhead catfish began in the early 2000's. While such factors as fishing effort and water levels can have an effect on these native fish abundances, the direct predation by flathead catfish has had devastating effects on these species.

As a result of these happenings, in 2007, the Georgia legislature funded three positions with Georgia Department of Natural Resources/Wildlife Resources Division (WRD) dedicated to reducing the Satilla's flathead catfish population and restoring the native redbreast sunfish population. The flathead catfish management

crew is searching for a combination of methods to reduce the dominance or even eliminate the flathead catfish from the Satilla River. In the past two years, the Satilla River flathead project has made tremendous strides towards reducing the abundance of flathead catfish. *Continue on page 2.*



Flathead catfish removal in the Satilla River. Justin Bythwood (Driver) and Chad Sexton (Dipper). -photo by Bert Deener

OUTDOOR ADVENTURE DAY AND JAKES DAY EVENT AT PARADISE PUBLIC FISHING AREA

A record number of visitors attended the Outdoor Adventure Day and the National Wild Turkey Federation (NWTf) "JAKES Day" event held at Paradise Public Fishing Area (PFA) on Saturday, Sept. 27, 2008. The Georgia Department of Natural Resources Wildlife Resources Division along with the NWTf hosts the event annually to celebrate National Hunting and Fishing Day (NHF Day). NWTf Regional Director Danny Sparks and Paradise PFA Manager Charles West begin planning a year in advance to

organize and promote the event. Charles West said, "The outstanding commitment and hard work from so many organization members, volunteers, and Wildlife Resources Division personnel make this event possible. Young people and their families are given a chance to experience a variety of outdoor experiences, all in one place with all the instructional help that is needed." Over sixty volunteers and an additional fifteen Wildlife Resources personnel worked this year to *Continue on page 2.*

Catfish Removal from page 1:

Between March 13th and April 23rd, 2007, a total 471 flathead catfish \geq 356 mm TL were tagged. This tagging study was used to obtain baseline information (population size, total mortality, and fishing mortality) on the Satilla River flathead population. Having an idea of how much fishing mortality flathead catfish removals are putting on the population year in and year out will help us get a better handle on how much effort is needed to suppress the flathead population while biological and/or genetic controls are developed. From April 25th to October 16th, a total of 4,399 flatheads weighing 25,357 pounds were removed from approximately 90 miles of the Satilla River. Fifty-three percent of the tagged fish were recaptured and removed. As a result, an exploitation estimate (fishing mortality) of 0.526 (or 53%) was calculated from the 2007 tagging study. Total annual mortality rates (A) were calculated at 50% from the otoliths of 484 flathead catfish. Furthermore, likelihood depletion models indicate a 40 to 52% reduction in the flathead population. In summary, the range of different mortality estimates calculated for the 2007 removal ranged from 40 to 53%. This is very encouraging considering past modeling estimates indicate significant declines in the size and number of Satilla River flathead catfish when fishing mortality rates are higher than 25%.

Similar efforts repeated in 2008 resulted in 96 flatheads being tagged from March 28th to May 8th, 2008 and a total of 3,285 flatheads weighing 9,398 pounds being removed from approximately 100 miles of the Satilla River from May 12th to October 17th. Fifty-percent of the tagged fish were recaptured and removed for 2008. As a result, an exploitation estimate (fishing mortality) of 0.50 (or 50%) was calculated from the 2008 tagging study. The average size flathead catfish harvested has dropped from 5.8 pounds down to 2.9 pounds in just the second year of the project. Biologists are currently hard at work aging another 500 otoliths and running a second depletion model on the 2008 removal data.

Spring standardized sampling efforts in 2008 did show a large increase in the catch per effort of redbreast sunfish, 57 fish/hr in 2007 to 180 fish/hr in 2008. WRD biologists caution that the majority of these fish were less than 4 inches in length and it remains to be seen if these fish will survive to harvestable sizes of 7-8 inches that angler's desire. This increase may very well be due to flathead reduction, but other such factors as water level and fishing effort may have also been just as important for the large increase in redbreast sunfish abundance.

-- Submitted by Tim Bonvechio (WRD Fisheries Biologist)

Outdoor Adventure Day from page 1:

man the different activity venues and provide assistance to the visitors. Numerous media outlets donated air time and space to provide free advertisement for this event. As a result of this effort seven hundred and thirty eight children registered to participate during the event and over six hundred more adults were in attendance.

Activities included a kids' fishing event on Lakes Cup and Saucer with a local bass club, "The Okefenokee Bass Anglers," providing assistance to beginning anglers. There was also a special event pond opened to everyone, instructional largemouth bass fishing excursions were guided by Biologist "Bert Deener", a fishing simulator sponsored by the Georgia Hunting and Fishing Federation, and BB gun ranges sponsored by the Hunter Education Association and The Tift Area 4H. The Wildlife Resources Section also provided a Laser Shot hunting simulator, a search and rescue dog demonstration, a 10-lane archery range, and a target range where youth had a chance to shoot a 20-gauge shotgun.

The Tifton Bassbusters hosted a casting contest, the ABAC Forestry Wildlife Club set up a large tent with many wildlife exhibits, and Frank Rowley provided a retriever dog demonstration. The National Wild Turkey Federation provided all participants a FREE lunch and sponsored Steve Scruggs - the "Snakemaster," which is normally a very popular attraction to the event.



A successful day for this young angler.

For more information on NHF Day in Georgia – including a complete listing of events in the state - visit the WRD website at www.georgiawildlife.com, select "General Information" and then "National Hunting and Fishing Day." For information on nationwide events, visit www.nhfd.org.

-- Charles West

President's Message

I hope all of you had a productive year and had a chance to get outside and enjoy Georgia's fisheries. I must say that it has been a pleasure serving as president of the GA AFS Chapter. Following is a brief synopsis of summer activities and future plans for 2009.

The chapter committee members met in August to discuss the Chapters' upcoming 2009 annual meeting. The meeting will be held at the Georgia National Fairgrounds in Perry, GA on January 27 and 28. As you probably noticed, the meeting format has been reduced from the customary 3-day format to 2-days. We felt this change was necessary considering the very stringent travel restrictions that have been imposed upon Georgia DNR employees, which comprise a large portion of our chapter membership. Current plans are for the meeting to run a full day on January 27 and approximately a half-day on January 28, ending near mid-day. Again due to the travel restrictions, the chapter will be supplying lunch meals on both the 27th and 28th. The January 28th meal will replace the customary evening banquet with awards presentations and the raffle occurring during this meal. For those needing accommodations during the course of the meeting a block of rooms has been reserved at the nearby Microtel Inn and Suites. Room rates are \$59 for singles, \$69 for doubles, and \$75 for suites. I strongly encourage everyone to plan on attending despite the current travel situation. You should already have seen the first call for papers and I encourage individuals to prepare and present project updates and research results at this year's meeting. I am excited about the meeting and look forward to having a wide variety of presentations. **It will be extremely helpful in the planning process for individuals to take advantage of the pre-registration process. Please register early!**

During the annual meeting this year, the GA Chapter will need to elect two new officers, Pres-Elect and Sec./Treasurer. If you know of any good candidates please submit nominations to Joe Slaughter at jeslaugh@southernco.com.

If you know of an individual deserving recognition for their contributions towards fisheries research and management, please take the time to submit a formal nomination. The three highest awards that are typically presented by the GA Chapter are the "Career Contributions", "Fishery Worker of the Year", and the "Distinguished Service to AFS". Nominations should be submitted to Steven Patrick at stevep@uga.edu no later than December 15th.

We are also still looking for a volunteer to take over the reigns of managing the GA AFS website. If you are interested in helping with this or have any ideas please contact David Higginbotham at HIGGINBD@warnell.uga.edu.

I look forward to seeing everyone at the meeting in January.

-- Don Harrison

How do land-based activities influence contaminants in our rivers?

I recently completed my Master's of Science under Jim Peterson in the Fisheries program at the Warnell School of Forestry and Natural Resources. My research focused on how land-based activities influenced the types and amounts of contaminants found in river water. I sampled water from the Ogeechee River and the main tributaries in the Altamaha River watershed (Oconee, Ocmulgee, and Ohoopsee Rivers) over two years during low (fall season) and high (spring season) stream-flow periods. River water was analyzed for organic contaminants including legacy-use organochlorine (OC) chemicals (OC pesticides and polychlorinated biphenyls) and current-use perfluorinated compounds (PFCs).

OC chemicals like PCBs and pesticides like DDT were used heavily from the 1940s – 1970s and are stable in nature, thus are still detected today. OC chemicals are lipophilic, which causes them to accumulate in organisms and magnify through food webs. PFCs are a group of fully fluorinated organic molecules that have the unique properties to repel both oil and water, thus their use in commercial and industrial applications. PFCs are found in a variety of every-day products such as Teflon, coating on fast food wrappers, and stain guards for carpets and textiles.

Concentrations for OC chemicals and PFCs ranged from 0 – 114 ng/L and 0 – 47 ng/L, respectively, which are comparable to the surface waters of relatively low impacted areas. The concentrations of chemicals found in the coastal rivers of Georgia are not currently at toxic levels, but it is necessary to understand how these stable chemicals behave in aquatic systems to recognize the impact to aquatic biota and the potential for biomag-

nification which may affect the people who consume fish from impacted waters. To understand how these chemicals enter riverine systems, chemical concentrations were related to land-use and environmental variables with hierarchical linear models.

Urban land cover influenced PFC concentrations in the river while agricultural land-use influenced OC chemical concentrations in the river water. Samples near an urban area or with a high percentage of urban in the riparian area of the stream had higher concentrations of PFCs. Run-off from row crop agricultural fields was a strong source for legacy-use OC chemicals as OC concentrations increased in the water column with an increase in turbidity and river discharge in areas with a high percentage of row crop agriculture within riparian area of the stream.

Prior to this work, little was known about these chemicals in Georgia's coastal rivers. We have shown how an understanding of the spatial distribution of these chemicals and their relationship to land use characteristics has helped us to focus on likely sources and begin to characterize relevant spatial and temporal scales at which to improve our future understanding of ecosystem level effects of PFC and OC contamination. Future work on where PFCs occur in the system (surface water, suspended sediments, bed sediment) will further aid our understanding of their behavior in the ecosystem, of where they enter the food web and the types of organisms they are likely to affect.

— By *Becky Fauver*

Thoughts from the President: Daniel Farrae

Regardless of political affiliation or preferences, I hope everyone uses this new aura of “change” to encourage positive interactions with nature. As professionals and scientists, I believe we should be the flag-bearers and role models for the average citizen. If we don't set a positive example, how can we expect others to treat nature respectfully?

Small efforts by individuals can result in large changes because of many people acting together for one cause. Something as small as picking up a piece of litter on the sidewalk and throwing it away may incite others to do the same. I am not accusing anybody of not doing the small things, but I'm sure if you thought hard you could think of more ways to make a difference. Trying to use less water, turning lights off in rooms as you leave, turning computers off overnight, and carpooling are just some suggestions of ways to improve our use of power and natural resources.

A sign of a good sportsman is one who leaves nature cleaner than he or she found it. But why must that be limited to sportsmen and the natural environment? I think we

should strive to clean our urban environments as well and to be responsible conservationists all the time, not just when we are fishing or hunting.

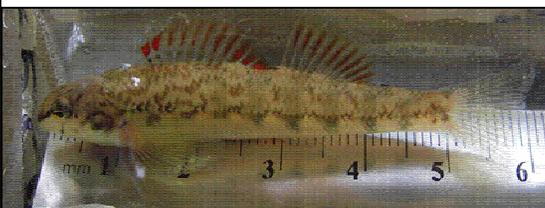
So, I ask you to strive to set the positive example other people may need to ignite their action. I find that many people talk about keeping the environment clean and are often model citizens with their own trash, but will walk right by litter without picking it up. I would prefer not to close with a cliché, but I will do it anyway: Remember that actions speak louder than words. If these positive interactions with our environment spread like a wildfire, then we will see actual **change**, rather than just hearing about it constantly through political rhetoric.

Development of Stream Fish Sampling Protocol

Just because you don't collect them doesn't mean they're not there! These words sum up the results of my master's research with the Georgia Cooperative Fish and Wildlife Unit and the University of Georgia (under the direction of Dr. Jim Peterson). The goals of my project were to develop and evaluate sampling protocols for stream fish in wadeable streams, and use the information gained to make recommendations for sampling at-risk fishes. Because many agencies and consultants use sampling data to provide information on the distribution or population size of fish (especially federally protected fish), it is important to use data with low error (bias) and low variance. My research demonstrated how incomplete capture, or the failure to collect 100% of the individuals available, can bias fish sampling data.



(L to R) Jason Meador, Megan Hagler, Alison Price, and Jill Olin sample fish using a backpack electrofisher.



Cherokee darter (*Etheostoma scotti*)

I completed my field work in the Upper Coosa River Basin in Georgia and sampled at 31 sites throughout the Etowah, Coosawattee, Oostanaula, and Conasauga sub-basins. At each site, my crew and I sampled fish within block netted areas using both backpack electrofishing and seining with electrofishing. All fish were marked with a fin clip and returned to the stream, and each stream was resampled the following day. The ratio of marked fish to recaptured fish was used to predict the proportion of fish that were sampled on the

first day. We also collected extensive data on habitat conditions of sampling that may influence catchability of fish, such as wood density, substrate composition, or turbidity. This information was used to estimate capture efficiency (our ability to sample) for each sampling method under specific conditions.

Our results indicated that sampling efficiency, under average conditions, is fairly low for most species groups (less than 30%) and varied with fish species, fish length, habitat characteristics, and method. Because catchability of fish was not constant across sampling conditions and species (or even between methods), failure to account for this incomplete capture introduces error into data analyses. The resulting models created in this study can be used to adjust stream sampling data for incomplete capture to help managers reduce bias or error in analyses. Stay tuned for published information regarding sampling protocol recommendations of at-risk fish species!

— By Alison Price



(L to R) Will Bickerstaff, Matt Mundy, and Abby Farakesh measure in-stream habitat.

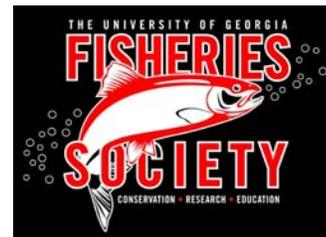
Catfish Sacrificed to Support UGA Fisheries

The UGA-AFS subunit hosted their annual fish fry on October 25, 2008, at Flinchum's Phoenix in Whitehall Forest (owned by the Warnell School of Forestry and Natural Resources). Over 150 members of the Athens community feasted on fried catfish, French fries, cole slaw, baked beans, hush puppies and several delicious desserts. In addition, a generous helping of raffle prizes added to the excitement of the evening. Raffle prizes were donated by Aquatic Ecosystems, Mrs. Barbara Trotter, Bass Pro Shops, Blue Heron Glass Art, Ms. Cindy Downs, Mr. Duncan Elkins, Extreme Gloves, Forestry Suppliers, Franklin's Gun Shop, Fun Stuff Pottery, Mr. Gary Sundin, Half Moon Outfitters, Helter Skeletons, Kinnucan's, Mrs. Natasha Ruiz, MCM Publishing, Odonata Jewelry Designs, Orvis, Patagonia, QDMA, Capt. Spud Woodward, Mr. Mike Bednarski, the Tennessee Aquarium, Terrapin Brewing Company, Trout Unlimited, Unicoi Outfitters, Wal-Mart, and Zoom Bait Company! The most coveted raffle prize of the night was a football signed by coach Mark Richt and many members of the 2008 UGA football team. This event raised nearly \$1,400 for the chapter, which will be used to support club activities, help with community outreach efforts, host seminar speakers, and pay for refreshments at chapter meetings and events. UGA-AFS would like to sincerely thank all those that helped make the fish fry a success, as well as those who attended!

— By Kelly Robinson

Check out UGA Fisheries at:

<http://ugafish.org>



2009 Annual Meeting of GA AFS

Plan now to attend the 2009 Annual Meeting of the Georgia Chapter American Fisheries Society being held January 27-28, 2009 at The Georgia National Fairground's Roquemore Conference Center, located just off I-75 in Perry, GA. For driving directions, visit the following web site, <http://www.gnfa.com/>. For those needing accommodations, rooms can be reserved at the nearby Microtel Inn and Suites. Please make your room reservations no later than January 15th to guarantee a room at the nightly rates of \$59/single, \$69/double, and \$75/suite by calling 478-987-4004 and mention the GA-AFS group.

The Georgia AFS Chapter meeting provides a great opportunity for interaction among professionals working in various fisheries fields. I hope you will take the time to attend this year's meeting, and invite someone who has not attended an AFS meeting before. If you know someone working on issues that affect fisheries, encourage them to attend and make a presentation as well. **Please pre-register to help us plan a great meeting and save the chapter some money (form at the end of this document)**. The early registration deadline is January 9th, 2009. After January 9th registration cost will increase by \$5/person. See the attached form for registration costs and to pre-register.

If you would like to make a presentation at this year's meeting, please send your name, contact information, and title and abstract (if available) to Steven Patrick (stevep@uga.edu) by December 15, 2008. Call Steven at 706/754-2318 with any questions.

Also, nominations are now open for Chapter officers and awards. At this year's meeting we will need to elect two new officers, Pres-Elect and Sec./Treasurer. **If know of any good candidates please submit nominations to Joe Slaughter at jeslaugh@southernco.com by December 15, 2008.**

We are also soliciting nominations for several Chapter awards, "Career Contributions Award" and a "Fisheries Worker of the Year Award", to be presented at our annual meeting. The "Career Contributions Award" is meant to honor individuals that have made numerous contributions towards the advancement of fisheries research and/or management over the span of their career. "Fisheries Worker of the Year" is presented to an individual that has made a significant impact on fisheries research or management during the past year. "Distinguished Service Awards" and "Certificates of Appreciation" can also be presented to deserving individuals. **Please send award nominations that detail the nominee's accomplishments to Steven Patrick (stevep@uga.edu) by December 15, 2008.**

You can contact me if you have any questions about the meeting or the GA Chapter. See you in January.

Don Harrison

Chapter President

Phone 912-285-6094



GEORGIA CHAPTER OF THE AMERICAN FISHERIES SOCIETY

2009 Annual Meeting Georgia National Fairgrounds Roquemore Conference Center Perry, Georgia January 27-28, 2009

Pre-Registration Instructions:

- 1) Saves \$5.00 over registering at the door.
- 2) Please fill out one pre-registration form per meeting attendee
- 2) Pre-Registration Deadline: **January 9, 2009**
- 4) Mail completed form(s) and payment (check, **NO** cash) to:

Joel Fleming
GA DNR
22814 Hwy 144
Richmond Hill, GA 31324

Name: _____

Affiliation: _____

E-Mail Address: _____

Payment Schedule:

Regular Registration (\$40) _____; includes social, meeting, breaks, and lunches

Student Registration (\$25) _____; includes social, meeting, breaks, and lunches

Retired Members (\$30) _____; includes social, meeting, breaks, and lunches

GA-AFS Dues (\$5) _____; included in your National Dues if you are a member

Extra Banquet Lunch **Only** (\$15) _____; banquet only (for spouse, friends, family, etc.)

Total Due _____; **Make Check Payable to: GA-AFS**

Day(s) You Will Attend Meeting _____; Tuesday, Jan 27th, _____ Wednesday, Jan 28th

Will you be attending the Student Professional mixer on January 27th? _____

Please Fill Out One Form Per Attendee

Remember to make your own motel reservations!