

# Under the Dock

February 2022



Newsletter of the Georgia Chapter of the  
American Fisheries Society



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## **Mark Your Calendar**

- **February 18**
  - Knauss Fellowship application due
- **March 1**
  - Shrimp Industry Scholarship application is due
- **March 31**
  - Georgia Fish Art entries are due
- **May 16 - 20**
  - Joint Aquatic Sciences Meeting in Grand Rapids, MI
- **August 21 - 25**
  - AFS National Meeting in Spokane, WA

***The newsletter is interactive - click on anything underlined or highlighted for more information and click on a laptop image for a video***



**Don't forget to nominate someone for the Chapter Spotlight**

**Professional Spotlight Nomination Form**  
**<https://forms.gle/T4cwW4A1zxkmzs7X6>**

**Student Spotlight Nomination Form**  
**<https://forms.gle/Xger4SyZozZx8fUg7>**

## **OUR MISSION**

**The mission of the American Fisheries Society and the Georgia Chapter is to improve the conservation and sustainability of fishery resources and aquatic ecosystems by advancing fisheries and aquatic science and promoting the development of fisheries professionals.**

**You can help support our mission by becoming a member of Georgia Chapter AFS, joining the American Fisheries Society, becoming a Georgia AFS Sponsor, donating to our annual fundraiser, or participating in our annual meeting. Visit our website for more info.**

**<https://gaafs.org/>**

We welcome a broad range of submissions that address research and ideas relevant to marine and freshwater finfish and shellfish and their respective fisheries and environments. Submissions are due on the 23rd of each month unless told otherwise.

Contact Rebecca Brown  
(georgiaafs@gmail.com) if you have questions. We also welcome suggestions for an aquatic species to highlight, safety tips, and ideas for the section *Did You Know*.



# DOCKSIDE

## HOW DO YOU INSPIRE THE NEXT GENERATION?

By Rebecca Brown and Jim Page



Have you ever watched it snow and pondered about how each snowflake binds together with all of the other snowflakes to create an enchanting landscape? The Georgia Chapter of the American Fisheries Society (Chapter) is made up of unique individuals that work together to strengthen the fisheries profession, advance fisheries science, and conserve our fisheries resources.

Several people submitted amazing recommendations for our *Chapter Mission Board*. As I added each of the submitted ideas to the board I began to see how as individuals we collectively contribute to the success of our mission. This year's *Chapter Mission Board* consists of what we are committed to continuing to support as well as new ideas to strengthen our profession and promote conservation of our fishery resources.

### Strengthen the Fisheries Profession

Success and inspiration come from interactions with others. Our Chapter strives to strengthen the fisheries profession by providing opportunities for fisheries professionals and students to explore new possibilities, collaborate with others, and enhance their knowledge and skills. We have some amazing

members who are passionate about what they do and want to inspire the next generation of fisheries professionals. Specific examples of how we currently seek to strengthen the fisheries profession include:

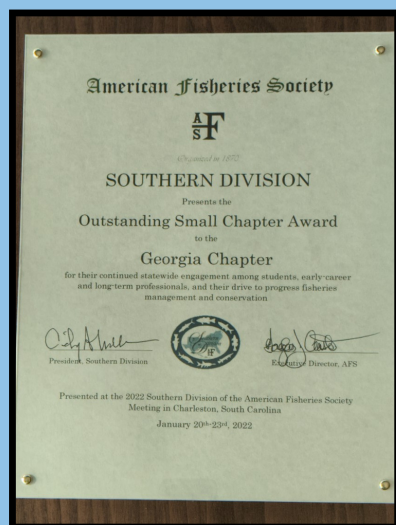
- Each year our Chapter organizes an annual meeting for fisheries professionals and students to gather, network, and share their research. Graduate and undergraduate students are encouraged to present their research at the annual meeting.
- The Continuing Education Committee selects training workshops that helps individuals and meets the needs of the profession. Our training workshops are open to all fisheries professionals and students.
- The Chapter sponsors a travel stipend grant for undergraduates pursuing a fisheries career to attend the annual meeting.
- Fisheries students who are members of the Chapter can apply for the Chapter's academic scholarship.
- The Fisheries Career page on the Chapter's website is designed to provide information for current and prospective fisheries students.
- The Chapter is committed to increasing diversity, equity, and inclusion in the Chapter, as well as the fisheries profession.
- The Chapter Executive Committee (EXCOM) continues to provide opportunities for members to sharpen their leadership skills



thorough volunteering to chair a committee, lead a Chapter project, or serve as a Chapter officer.

Though the Chapter has been busy carrying out these responsibilities, we are continually looking at additional ways we can improve to better meet the needs of our members. Beyond the aforementioned current efforts, additional ideas that have been mentioned and are being considered by Chapter leaders include the following:

- A suggestion submitted for the Chapter to consider is the formation of a mentoring program for both professionals and fisheries students. The program could connect young professionals with veterans and connect fisheries students with professionals. And it was proposed that the fisheries professionals do not necessarily need to work in Georgia.
- It has been suggested the Chapter sponsor a competitive grant to provide funding for fisheries-related projects in Georgia that help further the mission of the Chapter. The grant will be only available to our members and the money can be used to get a project started or to supplement funding from other sources.



*At the 2022 Southern Division of AFS meeting the Chapter was presented with the SDAFS Outstanding Small Chapter Award for our work in 2021*

We certainly appreciate these suggestions, and we strongly encourage all members to take an active role in identifying, recommending, developing, and implementing ideas that will better meet the needs of our members.

## Conserving Our Fisheries Resources

Just as healthy aquatic ecosystems are important for healthy fish populations, healthy fish populations are equally as important for healthy aquatic ecosystems. Healthy fish populations need to be sustainable, and fisheries research provides us information to guide decisions to ensure fisheries are sustainable. Knowledge is key to effective sustainability, and it is important that knowledge be shared. Our Chapter strongly believes that we must share our fisheries knowledge with local communities, a responsibility carried out through aquatic education outreach programs or other conservation programs that promote the sustainable use of our aquatic resources using sound science. Examples of educational outreach methods are Chapter has employed include:

- An educational workbook created by the Chapter aquatic outreach team to educate children and young adults about aquatic nuisance species. The second edition of the workbook goes to print soon and will be available for fisheries professionals and aquatic educators to use. This workbook will also be available electronically for the public to download. Supplemental resources for aquatic learning opportunities are available on the Chapter website.
- Monetary support provided by the Chapter to the Go Fish Education Center classroom to



purchase supplies needed to teach kids and visitors about Georgia's fisheries resources.

- Promotion of the Georgia Fish Art contest sponsored by the Georgia DNR Go Fish Education Center. Using art, this contest ignites children's imagination while teaching them about fish, aquatic conservation, and fishing. We encourage members to share information about this art opportunity with family and friends across the state.
- Participation in community events, including CoastFest. Our Chapter has participated in large events like CoastFest in the past, whereby 5-10K people have the opportunity to visit the Chapter display tent. For the Coastfest 2022 event, Our tent will focus on teaching about aquatic nuisance species in Georgia.
- Advertising and encouragement of members to participate in the Trout Unlimited #CLEANMYWATER campaign initiated by the Upper Chattahoochee Chapter of Trout Unlimited.



While these are some current outreach efforts, we are continually seeking additional ways we can better promote our Chapter and encourage folks to engage in enjoying our vast waters and the fisheries they offer. Some new ideas that have been mentioned and are under consideration and development include:



- Seeking ways to aid environmental education facilities, including the McDuffie Environmental Education Center (MEEC). The Center has a full-time curator and the Chapter will be asking how we can help with their fisheries education programs.
- The Chapter will seek ways to help support the Georgia DNR Becoming an Outdoors Woman (BOW) workshop. The BOW workshop introduces recreational fishing to participants who are new to fishing or are wanting to work on their angling skills. Programs like BOW not only promote good stewardship of our aquatic resources but can also promote diversity within the fisheries profession.
- This year some members are searching for ways to raise money to purchase adaptive fishing equipment that can be used by people with disabilities at Georgia DNR Kids Fishing Events or fishing camps.
- The Chapter has been asked to consider hosting a C.A.S.T. for Kids event. These events are designed to provide children with special needs, ages 6 – 18, the opportunity to enjoy a quality outdoor recreational experience through the sport of fishing.

These are just some of the ways that we can pursue educating people, and certainly, there are countless more ideas that many of you may



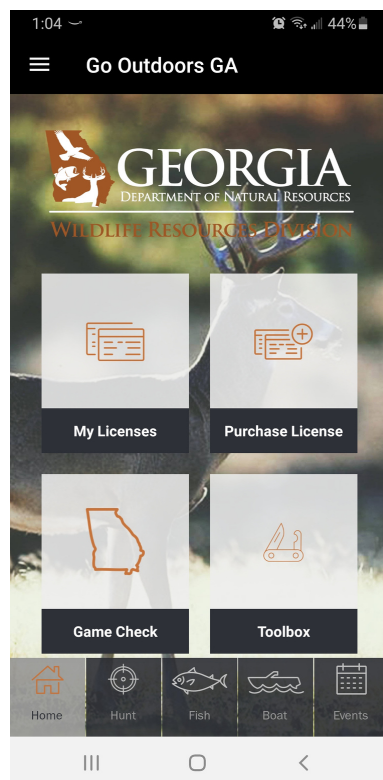
have, which we encourage you to share with us. However, idea development is just the start: **COMMITMENT TO ACTION** is the next critical step. Just as sustainability in fisheries requires a plan and significant effort, so too is the case with education and outreach efforts. Outreach and education efforts cannot be effectively done by just a few....*it requires all of us* to come together and participate if we are to maximize our success in sharing knowledge and teaching others.

Our Chapter's success is the sum of all our efforts. Just like the snowflakes floating down from the sky above quietly building a winter wonderland our members are doing what they can to help the Chapter achieve its mission.

Did you see something from the list above that you are passionate about and want to offer your help? Do you have an idea for an aquatic outreach project in your community you think the Chapter may be able to help with? Contact us at [georgiaaafs@gmail.com](mailto:georgiaaafs@gmail.com)



UGA Fisheries student sharing her knowledge of fish at the Crayfish Creek Restoration Site



Do you have this app on your phone?

[Go Outdoors GA](#)

## HELP STOP THE SPREAD OF AQUATIC NUISANCE SPECIES

**CLEAN.DRAIN.DRY.**

**CLEAN**

- Boats, trailers, and gear
- Remove all weeds, mud, and hitchhiking contaminants from axels, wheels, undercarriage, motor, prop, nets, and gear before leaving boat landing

**DRAIN**

- Water from boat, bilge, motor, and live well
- Remove drain plug and open all water draining devices
- Trash unused bait

**DRY**

- Everything at least five days before going to other waters
- (Or) Decontaminate with high pressure water (120 F or warmer)

**STOP INVASIVE SPECIES!** LEARN MORE AT [CLEANDRAINDRY.ORG](http://CLEANDRAINDRY.ORG)

Great Lakes RESTORATION

CLEAN DRAIN DRY INITIATIVE

STOP AQUATIC HITCHHIKERS!



# Georgia AFS 2022 Mission Board

## Outreach

Aquatic Nuisance Species:  
What Are They and How Can We  
Prevent Them?



Aquatic Nuisance Species:  
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Prevent Them?



### Under the Dock

January 2022



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The  
MEEC



COASTFEST  
2022

INSPIRE

Dedication

mentorship

Training

GEORGIA FISH  
ART CONTEST

UGA Fisheries  
Society

Diversity



CADNR  
BOW



Stewardship

TECHNOLOGY

COMMUNITY

INCLUSION

COMMITMENT



# NEWS & UPDATES

## Georgia DNR Career Academy

The Georgia Department of Natural Resources (DNR) is looking for the next generation of DNR employees who will care for Georgia's natural and cultural resources. This summer, DNR invites **high school students** to a week-long summer camp where students will have the opportunity to explore future career options, receive training and education, and make connections with current DNR employees. Attendees will work alongside field professionals and receive hands-on training from game wardens, park managers, and wildlife, fisheries, and marine technicians while traveling across the state visiting wildlife management areas, state parks, fish hatcheries, historic sites, and Georgia's coast.

Students will stay overnight at the Charlie Elliott Wildlife Center located in Mansfield, Ga., and the Jekyll 4-H Center on Jekyll Island. Lodging and food are included in the total cost. Students may also choose to earn Dual Enrollment credit that can be used in Fish and Wildlife and Conservation Law Enforcement programs at many technical colleges.



Students will have the opportunity to learn about careers in:

- Habitat stewardship
- Law enforcement
- State parks hospitality
- Fisheries & wildlife management
- Coastal conservation and more

### Cost

The cost for the DNR Career Academy is \$100 and includes all meals and lodging.

Share this information with anyone you think will be interested

<https://gadnr.org/CareerAcademy>

### GA DNR WRD Confirms New State Record Shoal Bass

From GA DNR press release: <https://georgiawildlife.com/new-state-record-shoal-bass-caught-chattahoochee-river>

Joseph Matthew McWhorter of Lanett, AL is the proud holder of the new state record shoal bass.

His catch, caught on Dec. 23 on the Chattahoochee River near Columbus, weighed 8 lb, 5 oz, and replaces the 1977 record (8 lb, 3 oz), according to the Georgia Department of Natural Resources' Wildlife Resources Division (WRD).

Shoal Bass (*Micropterus cataractae*), designated as the official state riverine sportfish species, are native to the Chattahoochee and Flint River basins; and introduced in the Ocmulgee and Oconee rivers. They have an upper jaw that does not extend beyond the eyes, unlike the largemouth bass, and the dorsal fin is continuous and not deeply notched. They are most like the redeye bass but do not have any red coloration in the fins or pale margins on the tail. Unlike smallmouth bass, they usually have a large dark spot at the base of the tail. The average adult is between 12–24 inches. Shoal bass are usually found around current breaks near flowing water. This can be in the middle of a big shoal, in a deep-water bend of the river with large boulders, or on the bank behind a tree in the water.



For fishing tips and information, be sure to check out the Angler Resources page at <https://georgiawildlife.com/fishing/angler-resources>.

Information about state-record fish, including an application and rules, can be found at <https://georgiawildlife.com/fishing/recordprogram/rules> or in the [current Sport Fishing Regulations Guidebook](#).



### **GA DNR's Coastal Resources Division creates commercial fisheries scholarship at Coastal Pines Technical College**

From GA DNR CRD press release: <https://coastalgadnr.org/dnrs-coastal-resources-division-creates-commercial-fisheries-scholarship-brunswick-college>

The Georgia Department of Natural Resources (DNR) and Coastal Pines Technical College Foundation announced a new scholarship and endowment program to invest in the next generation of Georgia's commercial fishermen.

The "Georgia Commercial Fishing Sustainability and Resilience Endowment" and the "Georgia Commercial Fishing Scholarship," funded by DNR's Coastal Resources Division (CRD), will aid Coastal Pines Technical College students enrolled in the college's Basic Commercial Fisherman Program. Qualified students can apply for financial aid to cover tuition, equipment, training, and commercial fishing licenses, according to an agreement signed between the foundation and CRD in December 2021.

"There is a growing concern from commercial fishing vessel owners and dock owners about the lack of trained crew to replace the industry's participants as they retire and leave the fishery," said Carolyn Belcher, CRD's chief of marine fisheries. "With this new scholarship and endowment, our goal is to incentivize students to pursue careers in commercial fishing across the Georgia coast."

Funding for the endowment and scholarship comes from a 2019 U.S. Commerce Department's aid allocation for a fishery failure that occurred during Georgia's 2013 shrimp season. During that season, commercial shrimpers saw a 58 percent reduction in harvest, prompting then-Gov. Nathan Deal to request federal aid.

Julie Califf, a CRD fisheries data specialist, helped oversee CRD's disbursement of \$1.06 million in fishery failure aid from the Commerce Department. While much of the disbursement was direct aid to affected fishermen, she noted the funds could also be used to educate and recruit new industry members.

"One of the things federal rules let you do with the money was job training, so it seemed like a natural fit," Califf said. "At the time, Coastal Pines Technical College had just started a program to educate students in commercial fishing, and we saw a need to help fund some of the equipment and other financial hurdles."





The Go Fish Education Center (GFEC) is operated by the Georgia Department of Natural Resources, Wildlife Resources Division. GFEC is home to a 200,000-gallon outdoor aquarium, housing over 50 species of native Georgia fish and reptiles that visitors can explore and learn about Georgia's aquatic ecosystems. In addition to viewing the fish in the aquarium, visitors can also observe the hatchery through the viewing windows. The GFEC classroom hosts several classes and workshops throughout the year. The casting pond is a great place to take the kids or first-time anglers.

<https://gofisheducationcenter.com/>

During the winter months, GFEC stocks rainbow trout into the center's casting pond. This is a rare opportunity for our visitors to catch and release rainbow trout in the middle Georgia area during the months of December, January, and February (Fridays, Saturdays, and Sundays). This should create an exciting trout angling experience for visitors to the Go Fish Education Center.

During the month of March on Fridays, Saturdays, and Sundays, visitors are allowed to harvest a predetermined number of trout per person from the Go Fish casting pond. A fishing license and trout stamp are required in order to participate in the harvest.

Fishing poles and bait are provided with paid admission, but if preferred, visitors are welcome to bring their own equipment and bait.



Kiyan Dwight (age 9) of Fort Valley, GA is learning about fishing while visiting GFEC

## Don't Forget About the Georgia Fish Art Contest

Got a young artist residing in your home? Be sure to encourage them to enter Wildlife Forever's annual Fish Art contest. This contest is open to kids in Grades K–12, but the deadline for entries is March 31st—and you have to enter to win!

Students across the United States and internationally have the opportunity to win prizes and recognition while learning about fish species, behaviors, aquatic habitats, and conservation. Using art, this contest ignites children's imagination while teaching them about fish and fishing.

The Fish Art Contest offers many different award categories to recognize our contestants' unique talents and to focus on important conservation topics and issues.

To enter, young artists create an original illustration of their chosen fish species from the Official Fish List. An essay, story, or poem based on species behavior, habitat, and/or conservation needs is also awarded.

More information about this annual competition: <https://www.wildlifeever.org/home/state-fish-art/how-to-enter-contest-2/>



# *Thank you for your Support!*

## **GAAFS 2022 Sponsors**

Click on image to visit website



# Georgia Power

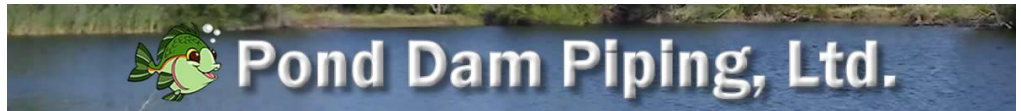
*The University of Georgia*



SCHOOL OF FORESTRY & NATURAL RESOURCES



GEORGIA  
AQUARIUM



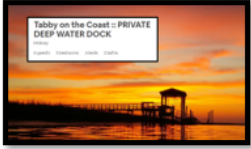
Marine Extension and  
Georgia Sea Grant  
**UNIVERSITY OF GEORGIA**



# Thank you for your Support!

## GAAFS 2022 Fundraising Donors

Click on image to visit website







The diamondback terrapin (*Malaclemys terrapin*) is the only estuarine turtle found in North America and has been listed as a species of concern in the state of Georgia since 2003. A Species of concern are those species that are more susceptible to becoming threatened or endangered without additional conservation actions. Terrapins in Georgia have three primary conservation concerns: habitat degradation, vehicular mortality, and bycatch in the blue crab fishery. My research focused on mitigating the bycatch of diamondback

terrapin in blue crab pots fished in Georgia waters through the addition of Terrapin Excluder Devices (TEDs).

I come from a background in marine invertebrates from research I did as an undergrad and wanted to continue in graduate school.

While investigating potential research ideas, I came across the Georgia blue crab management plan that outlined issues the fishery faces. After speaking with Carolyn Belcher and Mark Dodd about the prioritization of the blue crab management issues, we landed on mitigation of diamondback terrapin bycatch. Diamondback terrapin can survive in a submerged crab pot for only about four hours before drowning. Limiting this bycatch is important because crab

pots have the potential to kill 15% of the terrapin population annually. Not only can crab pots reduce the populations of terrapin, but they also skew the remaining population to be more female. Bycatch mortality in crab pots is generally skewed towards males and young females, causing a shift in the size and age distributions and shifting to a more female-dominant sex ratio. Based on this research, we plan to propose a rules change to the blue crab fishery, recommending TEDs be required on crab pots in Georgia.





To best promote this recommendation, I designed my study around the blue crab fishery seeking to understand the impact terrapin excluders have on crab catch. The underlying principle is that if TEDs do not negatively impact blue crab catch, the rules change will be better received by commercial and recreational fishers. My research design consisted of setting three different trap types: one control and two different excluder devices. The first was provided by GADNR and is a commonly found excluder with dimensions of 5cm x 15 cm. The other was provided by SCDNR and is a modified design optimized for terrapin reduction, and was 5.1-6.4 cm x 7.5 cm. Each of the three trap types was fished for 25 consecutive days in five different creeks in the Savannah area. I took blue crab carapace width and length measurements and calculated catch per unit effort for the three trap types to see how excluders affected crab size and catch rates.



Like most research projects, mine had its fair share of setbacks, most of which came in the early stages of the project. With my research taking place during the Covid-19 pandemic, there were issues with shipping and getting research equipment on time. Most of the crab pots and floats that we needed were on backorder with very long shipping times. We were also limited to a smaller number of people on the boat to help process blue crab catch. Even with these setbacks, I was still able to get the data I needed to meet my study objectives.

*Kris just completed his Master's in Science at Savannah State University. He was Georgia Sea Grant's first State Fellow and during his fellowship year with Gray's Reef National Marine Sanctuary he contributed to advancing science, policy planning, and resource protection. Kris is also active in the Black in Marine Science group and worked as a groundfish observer in the North Pacific.*





# Q&A with Bryant Bowen



Bryant Bowen is the Georgia Department of Natural Resources Stream Survey Team Program Manager. Bryant grew up in Washington County, Georgia just south of the town of Tennille. His family's land is the headwaters of the Ohoopsee River not too far from the Balls Ferry Ramp on the Oconee River. As a young lad, Bryant spent many days fishing, setting traps, and hunting.

These days when Bryant is not working you will find him spending time with his family. He likes to fish, hunt, and tend to his garden. Bryant's appetite for a good hot sauce has led him to make his own. And some might not know this, but Bryant likes to collect fish art.



Bryant received his first degree from Georgia College & State University (GC&SU) in Milledgeville in Biology & Environmental Sciences. He then moved to Athens where he earned an interdisciplinary degree specializing in Marine Fisheries from The University of Georgia. Later he landed a research assistantship to attend graduate school at The University of Southern Mississippi in Hattiesburg where he earned his M.S. in Biological Sciences.

## **What inspired you to pursue a career in fisheries science?**

I had grandiose ideas of saving the environment when starting my undergraduate studies. After a few years in, I realized that this was a very broad idea and I probably needed to focus on a more specific field. I had enjoyed my undergraduate vertebrate classes and had an ornithology professor at (GC&SU) almost talk me into working with raptors, but my lifelong love of fishes and being on the water took over in the end. Fishes are so diverse; there are more than thirty-two thousand species of fish, more than all the other vertebrates combined. This has always interested me, and I figured trying to encounter as many species as possible, would keep me busy for a career.



### **What did you do for your graduate research?**

I earned a Graduate Research Assistantship with Dr. Steve Ross at The University of Southern Mississippi in Hattiesburg, MS, working on the Gulf Sturgeon Research Team. This job paid my out-of-state tuition and provided money to try to survive on while I finished my master's thesis. The job also helped me learn more about anadromous fishes and their annual migrations and habitat requirements. I will always cherish those days chasing Gulf Sturgeon in the Pascagoula Basin and Mississippi Sound. My Master's thesis focused on the phylogenetic relationships of North American shad species and the genetic population structure of Alabama Shad in North America.



### **Did you have any internships/jobs that prepared you for a job as a fisheries biologist?**

One day, 21 years ago, I walked into Cecil Jennings' office looking for some sort of experience. I was looking for volunteer opportunities, but there was a technician position open with limited hours for the summer. I was able to join UGA's Cooperative Extension Unit as a technician. This job solidified my interest in pursuing a fisheries career and helped me gain some valuable skills and experience necessary for the field. Interestingly enough, the majority of field work

required for this job occurred on the Oconee River near my old stomping grounds. I'll always be grateful to Dr. Jennings for helping me obtain my first real on-the-job experience.



### **What are some of your responsibilities with Georgia DNR?**

- Member of the Stream Survey Team which is a small group of technicians, biologists, and seasonal workers who monitor the health of Georgia's wadeable streams by surveying fish communities.
- Help organize and plan statewide collecting and lab testing of fish our anglers consume. These data are published in GADNR's Fish Consumption Guidelines.
- Assist with statewide Black Bass Conservation
- Assist with statewide molecular studies coordination
- Verify and archive angler submissions for Georgia's Black Bass Slam
- Assist with statewide Environmental Review Coordination







### **What skills are needed for your job? How did you acquire these skills?**

- People and communication skills – adaptability, kindness
- Read/write/public speaking/presentation skills
- Fisheries Techniques
- Knowledge of fish distribution
- Fish collection - How to collect fish using multiple techniques
- Fish ID
- Knowledge of conservation and habitat needs of species
- Interpreting molecular results for management decisions
- Familiarity with hydrology and knowing how water moves across the landscape
- Mechanical skills
- Equipment maintenance/mobilization/operation
- First aid skills

Most of my boating, equipment operation, and maintenance skills developed while growing up in the country near the family farm. You can also pick these skills up with part-time jobs and other volunteer opportunities. Excellent people skills come from years of interacting with diverse audiences, but good people skills can start with a meeting and/or working with new people and expanding your network. Attending

professional meetings like the Georgia Chapter AFS annual meeting is a great opportunity to develop your people skills.

Whether we took advantage of it or not, reading and writing and being a good public speaker all begin in high school. Furthering your education beyond this will also help to expand your abilities to convey technical information to any crowd. Local civil clubs and church classes offer great opportunities to work on your people and public speaking skills outside of the skills you gain pursuing your education. Your studies at college will provide you with the scientific and technical skills you need to succeed in your career interests.



### **What do you find most rewarding and most challenging working as a fisheries biologist with Georgia DNR?**

Being able to experience all kinds of beautiful and diverse habitats associated with the amazing water bodies we manage is rewarding. It is rewarding to know that you are helping to conserve and promote the natural resources of Georgia for future generations. It's also rewarding to help people learn about the state's wildlife resources. The variety of work that a typical fisheries biologist does from day to day can vary greatly, and I find that satisfying. Working with other conservation partners,

biologists and local communities are also rewarding and encourages me to think bigger and broader.

Prioritizing my work and deciding how to focus my energy can be challenging with all the different plates spinning at any one time.

### **What is your favorite memory from your career so far?**

This field is filled with many amazing opportunities that create lasting memories. If I had to choose some that stand out, I would pick the memory I have from knowing that my graduate research work contributed to stopping a reservoir from being constructed on gulf sturgeon spawning grounds. I will also always remember collecting and finding new species of fish on a survey in Honduras and the amazing habitats we encountered along the way. The work we are conducting now on our native black bass species is becoming a favorite memory as well.



### **Give an example of when you had to think outside the box to solve a problem/issue.**

There have been many instances in my career where I had to think outside of the box to overcome funding and staffing shortages. We have had to share person-hours and equipment with other programs or sections to get the job done on many occasions. However, one of my favorite examples of “thinking out of the box” was in the field. I was helping a fellow lab mate on a research survey expedition in Honduras documenting the diversity of freshwater fishes in the country. Not much was known about the freshwater fish fauna, and he was going to add to that knowledge for his dissertation. Our daily routine was to go out and sample at first light and make sure to be heading home way before dark as things were volatile in the country, especially for foreigners. One evening after sampling all day and driving the 4-cylinder diesel Landcruiser -which we bought for \$600-, through multiple creeks and rivers, we were heading back in and our Landcruiser broke down on the side of a very busy highway leading into town. It was getting close to dark, so as you can imagine, I was getting very nervous and anxious as to the outcome of the situation. Luckily my upbringings kicked in and I jumped out of the truck to see if I could find anything wrong with the engine, etc. After a few minutes of looking and a few close calls from traffic going by, I figured out what was wrong and was able to take my bootlaces out of my boots to fabricate a new throttle linkage to replace the one we had shredded from all the off-roading we did that day. I tied those things up as tight as I could and that got us back home for the night. We took the truck to the shop the next day and the mechanic was amazed that I came up with that fix.





### What is your advice to students thinking about pursuing a career in fisheries science?

- Learn as many tools as you can.
- Start getting experience as soon as possible. Most job applicants have degrees on their applications, but the ones that get the job offers also have experience.
- I would also advise students pursuing graduate school to look for and concentrate on finding a major professor and lab that is conducting the type of research that interests you and one with a proven record. Don't get hung up on the specific university to attend, rather who your major professor and lab mates will be.

### If money was no object, what is one project that you would like to work on?

I can remember this like it was yesterday! I was gathering information in the UGA library for a report on the fastest fish in the ocean for one of my marine fisheries classes. I was gathering information on sailfish and Dr. Gene Helfman walked in. I hadn't taken his class yet but knew kind of who he was so I approached him to introduce myself and see what he knew about pelagic species graduate opportunities. It wasn't very far into the conversation when he said, "You're going to need very deep pockets and a very well-funded program to pursue research with pelagic species. Not many people are lucky enough to be able to do this type of research." I wasn't able to land a graduate research position with pelagic fishes, but my interest in highly migratory pelagic fishes is one of the reasons I got into this field; they have always amazed me with their long migratory routes and ability to swim very fast.



### What is your favorite fish? Why?

There is no way I can pick one favorite fish. I will always have a love for anadromous species. Their huge migration routes through the gauntlet and diverse habitat requirements needed to complete their life cycle will always amaze me. They are also key biological indicators of ecosystem health, making them critical species for our watersheds. I am also growing very fond of Georgia's native black species. I have seen some amazing places in Georgia chasing after them.





## Chapter Spotlight

Paula Marcinek

Paula is currently an aquatic biologist with the Freshwater Biodiversity Program, Georgia Department of Natural Resources. She has worked for GA DNR since 2008; first as the biologist with the Stream Survey Team for 9 years; now in her current position for the past 5 years. While Paula served as the Chapter's fundraising chair she created a strategy that we still use today as to how we seek fundraising donations to increase the amount of money we can raise to support our aquatic education outreach projects, student scholarships, habitat restoration projects, and continuing education workshops.



### What got you first interested in fisheries science?

*Like many in our field, I had a fascination with water, streams, and nature since childhood. As an undergraduate, I was working in a soil lab when a graduate student asked me to help collect samples for his stream research. I left the earthworms and never looked back. But what really sealed my love of fishes and aquatic biodiversity, was working as a technician for Dr. Mary Freeman, U.S. Geological Survey. She introduced me to fish taxonomy, diversity, and conservation issues. She imbued in me a passion for the often-overlooked, non-game fishes.*

### Where did you go to school and what did you study?

*I began at Rollins College, a small private college in Florida. I transferred my 3rd year to take advantage of the Hope Scholarship and earned both a B.S. and M.S. at the Odum School of Ecology, University of Georgia. My master's research involved characterizing the variation of fish assemblages and species abundance in the upper Flint River shoals.*

### What advice would you give to someone pursuing a profession in fisheries science?

*Schooling is a good foundation but garners as much hands-on experience as possible. As an undergraduate, volunteer or look for paid positions in research labs. Take advantage of internships, seasonal employment, and volunteer opportunities with government agencies and non-profits. Not only will you strengthen your base knowledge, but you'll also start forming professional relationships.*





# Chapter Spotlight Continued

## Describe your current job responsibilities?

*My job duties are almost as diverse as the state's fishes! Broadly, I help manage aquatic species conservation and Program logistics. A lot of my time is spent providing reviews of and recommendations for projects impacting threatened and endangered species and their habitats such as bridge replacements, hydropower facilities, water intakes, and discharges. I coordinate conservation and restoration activities with other agencies such as the Fish and Wildlife Service and NOAA and other sections and programs within GADNR. I also plan and execute field studies and surveys for population assessments of rare fishes. I'm the Program's liaison to the Georgia Aquatic Connectivity Team and the Robust Redhorse Conservation Committee. I also work with the Special Permits Unit to review applications for aquatic Scientific Collection Permits. And of course, administrative tasks such as approving time, grant proposal & report writing, and much more!*

## Describe one or two projects you are currently working on as part of your current position.

*I spend a lot of my time, directly and indirectly, working on Robust Redhorse conservation. In 2018 our team implanted acoustic tags with a 10-year life span into 11 Savannah River individuals. We're building a long-term data set of a highly migratory, long-lived species and seeing site affinity during both the spawning and non-spawning periods. One day, once the fish passage is achieved at the New Savannah Bluff Lock and Dam, we hope to track their migration to historic spawning grounds in the Augusta Shoals.*



Photo by Alan Cressler

## What do you most enjoy about your current position and what do you find most challenging?

*I enjoy collaborating across agencies to achieve common goals. For instance, I'm currently working with colleagues at the GA Dept of Transportation, Fish and Wildlife Service, Forest Service, and UGA River Basin Center to remove fish barriers, a dam and culvert, in the Etowah Watershed. It's a lot of coordination and logistics, but extremely rewarding to accomplish big, inter-disciplinary restoration projects.*

*Field work is the best part of my job, but also the most challenging. The increasingly erratic and extreme weather events have been hindering our field efforts. We haven't been able to accomplish Robust Redhorse spawning surveys since 2018 due to consistently high, spring flows. It's hard to keep making plans only to cancel them and then pivot your energy to other tasks. But not having recent data hinders our ability to accurately assess the status of populations.*





## Chapter Spotlight Continued

**Describe the most rewarding experience you have had during your career.**

*Participation in the Robust Redhorse Conservation Committee continues to bolster my motivation and optimism toward positive conservation outcomes. I'm constantly amazed at the dedication and passion that this diverse group of stakeholders brings to the front lines of conservation.*



**What is your favorite fish and why?**

*The HARDEST question! So many darters, minnows, and madtoms to choose from! If I must pick one, I will say American Eels because they have the most intriguing life history and longest spawning migration.*

**What is your favorite quote?**

*"The beginning of wisdom is to call things by their proper name." -- Confucius*



**What is something about yourself that others may be surprised to know about you?**

*There is a life-sized, cardboard cutout of me at the Go Fish Education Center in Perry. I have a collection of photos of friends and colleagues posing with "me". If you are at the Center, be sure to visit and email me a photo!*



*Not many people know Paula helps her husband Clay and his family manage a sustainably certified farm in Monroe, GA*



# DID YOU KNOW

Artist: Karin Zeller

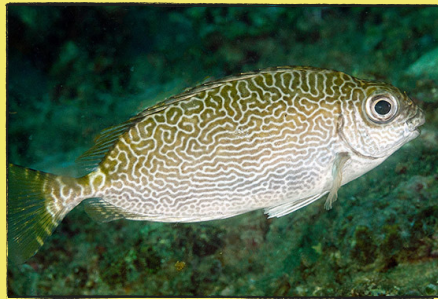
## Ichthyoallyeinotoxism

Ichthyoallyeinotoxism, also known as hallucinogenic fish inebriation, possibly comes from eating certain tropical fish. It is still unclear as to whether or not the fish produces hallucinogenic toxins themselves or it is by the marine algae in their diet. One such fish is the Salema porgy (*Sarpa salpa*). The Salema porgy is a type of sea bream native to the East Atlantic and parts of the Mediterranean, is known as the "fish that makes dreams". Some say the Ancient Romans knew this and actually used the fish as a recreational drug.



*Sarpa salpa*  
Salema porgy  
"Dream fish"

East Atlantic and Mediterranean



*Siganus spinus*  
Scribbled rabbitfish  
"The fish that enebriates"

Indo-Pacific region



*Mulloidichthys flavolineatus*  
Yellow striped goatfish  
"The chief of ghosts"

Pacific and Indian Ocean

## Ciguatera: a different type of fish poisoning

Ciguatera is a type of fish poisoning that can also cause hallucinations. Ciguatera fish poisoning is the most frequently reported seafood-toxin illness in the world and is caused by a toxin (ciguatoxin) found in tropical or subtropical fish during certain times of the year. It produces a myriad of gastrointestinal, neurologic, and/or cardiovascular symptoms which last days to weeks, or even months.

The source of the toxin responsible for ciguatera fish poisoning is derived from benthic dinoflagellates of the genus *Gambierdiscus*, growing predominantly in association with macroalgae in coral reefs in tropical and subtropical climates. The toxin is transferred through the food web as the algae is consumed by herbivorous fish, which are consumed by carnivorous fish, which are in turn consumed by humans.





## COFFEE BREAK

### Do fish get sunburned?

Middle and long U-V wavelengths can penetrate water for a few centimeters, particularly in water of high clarity. Cultured salmonids are especially vulnerable if exposed to long periods of direct sunlight. Koi fish in backyard ponds and water gardens are particularly susceptible to sunburn.



Direct sunlight can damage fish eyes, so use your shadow or boat placement to keep fish eyes shaded when out of the water.

[https://www.ifishillinois.org/catch\\_release/](https://www.ifishillinois.org/catch_release/)

## BUBBA'S VIDEO PICK

### Cold weather makes the best bass fishing

Pro Angler Brian Latimer shares his expertise



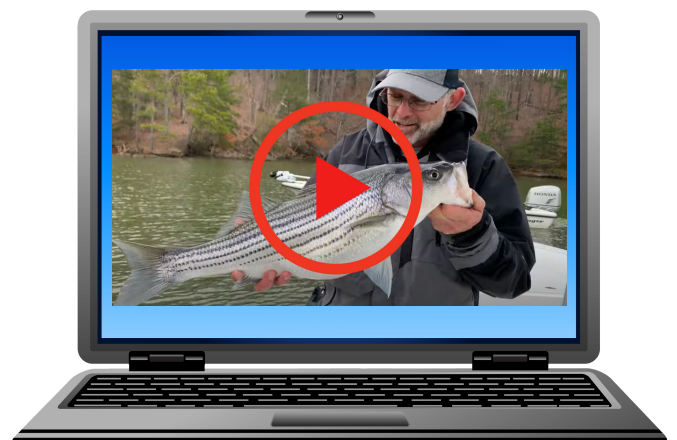
## BUBBA RECOMMENDS

Are you looking for a fishing adventure on Lake Lanier?



Captain Mack Farr has over thirty years of professional fishing experience. He is considered an expert on Striped Bass fishing on Georgia's Lake Lanier and throughout the waters of the southeast.

His Umbrella Rigs and famous Chipmunk and Super Jigs are used by winning professionals in tournaments from Georgia to California. His books and videos are widely considered the best instructional tools available for those considering learning or enhancing their skills.



*Click on logo above to visit his website*



## Safety Tip

from Bubba Bass



### Carbon Monoxide

The colorless, odorless gas carbon monoxide (CO) is one of the most dangerous poisons that is life-threatening and is often overlooked by boaters. The most common source of CO is a running engine. It is a common misconception that in order to be poisoned with carbon monoxide, you have to be in an enclosed space. The truth is, you can be poisoned even if you are out in the open air.

- Know where and how CO may accumulate in and around your boat.
- While electrofishing the exhaust from the generator should be facing away from people
- Traveling at slow speeds or idling in the water can cause CO to build up around the boat

Educate all passengers about the signs and symptoms of CO poisoning. Carbon monoxide poisoning can occur suddenly or gradually, so it's important to be alert to the signs and symptoms and to call for emergency medical assistance if you notice any of them.

- Headache
- Confusion
- Fatigue
- Seizures
- Dizziness or loss of consciousness
- Nausea



**Marine  
Carbon  
Monoxide  
Detector**

More information: <https://www.cdc.gov/niosh/topics/coboating/>

## Bubba's Friends

### Bonnethead Shark (*Sphyrna tiburo*)



The bonnethead (also known as the shovelhead shark) is the smallest of the hammerhead genus. There are many interesting facts about the bonnethead. How many did you know?

- They are found in tropical and subtropical waters on both coasts of North America
- They are viviparous with a yolk-sac placenta
- They have the shortest gestation period of any shark species (4 - 5 months)
- Rarely seen swimming alone, they are usually observed swimming in groups of up to 15
- The female can store sperm for up to 4 months
- Baby sharks are called pups, and bonnethead litter size is 4 - 16 pups
- Their nostrils are located close to the eyes, near the ends of their flattened spade-shaped head
- They feed upon crabs, shrimp, octopi, bivalves, and small fish



## Fin and Games

\_\_\_\_\_ feed the oceans, lakes and rivers. Find the answer by solving the puzzle.

Mystery word is:

1	2	3	4	5	6	7

- The seventh letter of the word is the symbol for element number 16
- The third letter of the word is the first vowel of the alphabet
- The fourth letter of the word rhymes with a popular beverage served hot or cold
- The second letter of the word is the first letter in the name of the invasive snail that lays pink eggs and can grow to the size of a baseball
- The fifth letter of the word is found twice in pompano, once in flounder, and never in tripletail
- The sixth letter of the word is found in mitigating and migrating, but not pirate and fishing
- The first letter of the word is the first letter of two of the three things you should always do after you take your boat out of the water – especially waters invaded by hydrilla and zebra mussels

*Answer on last page*

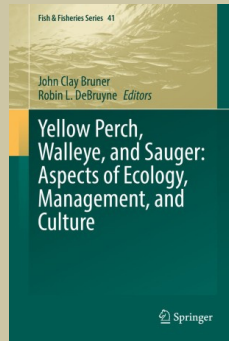


**Props!**



# The Book Shelf

## PROFESSIONAL RESOURCE SECTION



### Yellow Perch, Walleye, and Sauger: Aspects of Ecology, Management, and Culture

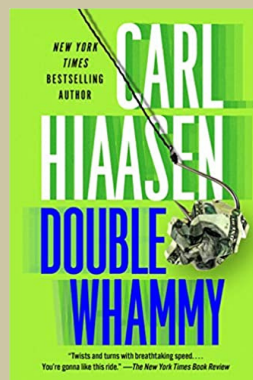
Editors: John Clay Bruner, Robin L. DeBruyne

<https://link.springer.com/book/10.1007/978-3-030-80678-1>

[Amazon Link](#)



## FICTIONAL SECTION



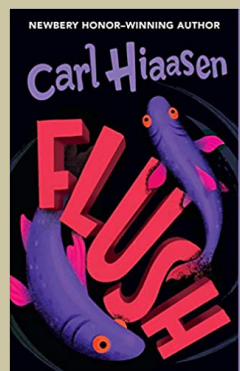
### Double Whammy By Carl Hiaasen

RJ Decker is hired by Dennis Gault to provide incriminating evidence against a suspected cheating bass fisherman. The plot roams along the eastern seaboard of Florida and into Louisiana.

[Amazon Link](#)



## YOUNG ADULT SECTION



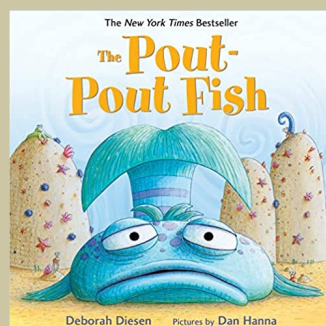
### Flush By Carl Hiaasen

A hilarious, high-stakes adventure involving crooked casino boats, floating fish, toxic beaches, and one kid determined to get justice.

[Amazon Link](#)



## CHILDREN'S SECTION



### The Pout-Pout Fish By Deborah Diesen

Named by Time Magazine as one of the Ten Best Children's Books of 2008.

[Amazon Link](#)



# FISHY NEWS AROUND THE WORLD

## The Fish Site

### HOW HEAT SHOCK THERAPY CAN CREATE A PARADIGM SHIFT IN AQUACULTURE

My objective in this article is to challenge pathologists, immunologists and farmers by asking for a critical analysis on the application of a simple temperature manipulation, hyperthermia, to boost the innate immune system of fish.

## Science

### CLIMATE CHANGE AND EXPANDING INVASIVE SPECIES DRIVE WIDESPREAD DECLINES OF NATIVE TROUT IN THE NORTHERN ROCKY MOUNTAINS, USA

In a new study published in Science Advances, University of Montana researchers found that climate change drives native trout declines by reducing stream habitat and facilitating the expansion of invasive trout species.

## Science

### SMALLER FISH SPECIES IN A WARM AND OXYGEN-POOR HUMBOLDT CURRENT SYSTEM

Researchers at Kiel University (CAU), together with colleagues from Germany, Canada, the USA, and France, have reconstructed environmental conditions of the warm period 125,000 years ago (Eemian interglacial) using sediment samples from the Humboldt Current System off Peru. They were able to show that, at warmer temperatures, mainly smaller, goby-like fish species became dominant and pushed back important food fish such as the anchovy (*Engraulis ringens*).

## Nature (University of Ljubljana)

### GENETIC AND CORRELATIVE LIGHT AND ELECTRON MICROSCOPY EVIDENCE FOR THE UNIQUE DIFFERENTIATION PATHWAY OF ERYTHROPHORES IN BROWN TROUT SKIN

Possible mechanisms regarding erythrophore origin are proposed and discussed. To the best of our knowledge, this is the first study to evaluate pigment cell types in the black and red spots of brown trout skin using the advanced CLEM approach together with gene expression profiling.

## Oregon State University

### RESEARCHERS DEVELOP AUTOMATED METHOD TO IDENTIFY FISH CALLS UNDERWATER

The method takes advantage of data collected by underwater microphones known as hydrophones and provides an efficient and inexpensive way to understand changes in the marine environment due to climate change and other human-caused influences, said researchers from Oregon State's Cooperative Institute for Marine Ecosystem and Resource Studies.

## Phys.org

### LEAF OYSTERS: THE UNSUNG HEROES OF ESTUARIES ARE DISAPPEARING

In Australia, 99% of shellfish reefs have been described as "functionally extinct," meaning the habitat these reefs previously provided has now been lost.



# AFS INFORMATION



## **What Do Fish Mean to Us? Perspectives Above and Below the Water Preliminary Call for Proposals – Symposia, Workshops, and Innovative Sessions**

Our theme, “What do fish mean to us?” seeks to examine the ways that people value fish and fisheries from a variety of perspectives. We expect to develop a program that includes symposia that cover topics of marine, estuarine, and freshwater fisheries management; commercial, subsistence, and sport fishing; cultural and historical roles of fish and fisheries; impacts on water and fish populations from energy, resource extraction, and land use; native and nonnative fisheries; the intersection of traditional cultural knowledge and western research practices; and the role of the many publics who rely on or enjoy aquatic resources. Spokane’s location in the intermountain west is uniquely positioned to offer a program that tackles all these issues.

The Spokane Program Committee invites proposals for symposia, pre-conference workshops and continuing education courses, and innovative sessions that support the theme and look to advance the fisheries profession.

### **Are you a member of the American Fisheries Society?**

- Membership to the Georgia Chapter is separate from being a member of the American Fisheries Society (AFS). Please visit the AFS membership website to learn more about being part of the largest professional society of fisheries scientists in the world.



<https://fisheries.org/membership/types-of-membership/>

Some benefits for becoming a member of AFS:

- Free online and mobile app access to AFS publications
- Discounts on books in the AFS bookstore
- Discounted registration fees
- Opportunities for AFS travel grants
- Attend continuing education courses at reduced registration rates
- Access to online webinars
- Able to vote on Society and Chapter business



Learn more about AFS: <https://fisheries.org/about/>

**Click on the laptop to watch a video**

# SUGGESTIONS? LET MINNOW!

**You can contribute. We need your input. Help keep the GA AFS members connected.**

Are you working on an interesting project you'd like to share with other Georgia AFS members? Do you have news to share with colleagues? Please make note of upcoming events, projects, personnel changes, issues, or anything else of interest to other Georgia AFS members, and pass them on to us for inclusion in the next newsletter.

Do you have any pictures you want to share with us to use on our website or newsletter? We are always looking for fish pictures, pictures of you working, aquatic scenic pictures, etc.

Do you have someone you want to nominate for the professional or student spotlight?

Have you caught a fish recently you want to submit for our "Props!" page? We also welcome immediate family members pictures of fish they recently caught.

You can send your nominations, requests, pictures, suggestions, and comments to Rebecca Brown at [georgiaafs@gmail.com](mailto:georgiaafs@gmail.com).

## Stay Connected

### GAAFS Website

[gaafs.org](http://gaafs.org)

### Facebook

[facebook.com/groups/georgiaafs.org](https://facebook.com/groups/georgiaafs.org)

### Twitter

@GeorgiaAfs

### Instagram

@georgiaafs

### **Newsletter Editorial Board**

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