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## AMERICAN FISHERIES SOCIETY

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## Summer 2016 NEWSLETTER

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### **President's Message**

Dear Colleagues,

Summer, as always, has come upon us so quickly here in North Carolina that it was almost over by the time I realized it. The heady, frenetic pace of spring fieldwork has given way to those long, hot days of mid summer when the mind wanders to thoughts of autumn, football and....frantically trying to complete this year's fieldwork. I have been doing my best to forgo those worries this summer and now that my son is old enough, I have been trying to take some time to enjoy some of the fantastic aquatic resources available in western North Carolina with him. During the many hours we've spent idling along the New River I've had a chance to appreciate first hand the restorative power of our natural resources. The kid is at the age where he is an absolute information sponge and it is very cool to see him bring his own version of science outreach to the new people, young and old that he meets at each boat ramp.

Speaking of continuing education, I would like to extend our sincere best wishes for a productive meeting to our colleagues taking a break from the heat, slime and scales to represent the North Carolina Chapter at the American Fisheries Society National Meetings in Kansas City later this month. I am sure that our excellent student representatives will be bringing home all of the awards and making us proud of their work and the outstanding programs and opportunities available to young fisheries and aquatic science professionals in North Carolina.

Speaking of meetings, president-elect Corey Oakley and I have been brainstorming on ideas for a 2017 meeting venue and are trying to find a venue in eastern North Carolina that would facilitate participation by our colleagues working in marine and estuarine systems. This year we were hoping for an estuarine destination and Corey has been talking to venues in the New Bern area about hosting NCAFS in 2017. I am excited at the prospect of exploring one of North Carolina's great historic towns and I hope to see everyone in New Bern next February.

Finally, we are excited to announce that the North Carolina and Virginia AFS chapters, along with the North Carolina Wildlife Resources Commission and Virginia Department of Game and Inland Fisheries are collaborating to sponsor an Aquatic Plants workshop at John H. Kerr Lake on 22 September 2016 (see page 11 of the newsletter for more information). This event will be designed with fisheries and aquatic habitat managers in mind and will focus on strategies for cultivating and managing aquatic plants. There will also be information about identifying and controlling exotic macrophytes. Sounds like an interesting and enjoyable day.

As we look forward to the end of another summer I hope that everyone is having a productive and safe year and I wish you good health and the best of luck in all of your fisheries endeavors.

Regards,

Michael Gangloff

*Submitted by Mike Gangloff, NCAFS President*

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## **Treasury Report, Summer 2016**

Quite simply, the financial health of the Chapter couldn't be better! Balances of the Chapter's financial accounts as of August 12, 2016 are:

1. Robust Redhorse Conservation Committee -- \$8,796.51;
2. NCAFS checking -- \$6,018.86;
3. NCAFS PayPal -- \$192.99;
4. NCAFS Edward D. Jones Account 1 (Ichthus Fund) -- \$30,385.94; and
5. NCAFS Edward D. Jones Account 2 -- \$41,215.33.

However, the two mutual fund accounts, like those held by many investors, have been disappointingly stagnant during the past two years with minimal gains offset by slight losses. There is good news -- in less than six months, we have recouped the \$3,218.00 that was donated to the environmental education Little Tennessee River Snorkeling Project ([Little Tennessee River Snorkeling Project](#)). Since February 2016, decreases

in the Ichthus Fund have resulted from the awarding of \$600 to Lisa Hollensead (University of NC-Wilmington) for the Best Student Paper Award at the 2016 Annual Meeting and the awarding of \$1,200 for three \$400 Student Travel Awards to Tiffany Penland, Ani Popp, and Brendan Runde (NC State University; NCSU) to attend and present papers at the 2016 National AFS conference in Kansas City, MO.

There has been minimal Chapter income since the 2016 Annual Meeting - \$911.60 was received from AFS as annual rebates for dues collected between January 01, and December 31, 2015. Recent expenses have been:

1. Donation to Go Fund Me for Pat Rakes -- \$250;
2. Donation to the Southern Division of AFS for the Jimmie Pigg Memorial Outstanding Student Achievement Award Fund in memory of Melissa Kay Kemp Coughlan -- \$500;
3. Payment to AFS for plaques, awards, and certificates -- \$125; and
4. Expenses incurred for the 2016 Annual Meeting -- \$7,756.50.

**NCAFS Membership:  
Join or Renew Today**

*[Click here to sign up or pay now](#)*

As a reminder to existing NCAFS members and those who are reading this newsletter, but who are not AFS or NCAFS members, the annual dues for both societies will expire on December 31, 2016. You may pay your 2017 state chapter dues directly to AFS when you renew your 2017 AFS membership or you can send the \$7.00 membership fee directly to the NCAFS Chapter using PayPal, check, or cash. If you use PayPal, please bear in mind that NCAFS receives only \$6.50 of the \$7.00 dues, PayPal keeps the other 50¢ as a handling fee. As of August 2016, our Chapter membership stands at 139 of which 87 members are also AFS members. If you are not a member of either AFS or NCAFS, please consider joining one or both of the societies. For \$7.00 you can't even purchase a 6-pack of a regular brand of beer much less a microbrew! Think about it. I hope you will consider membership in AFS and NCAFS in the year ahead.

*Submitted by Bryn H. Tracy, NCAFS Secretary/Treasurer*

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## **An Amazing Experience! – 2016 Shad in the Classroom**

This year, the 27 classes at 23 different schools participating in Shad in the Classroom did a great job hatching American Shad eggs. The classes consisted of 8 elementary, 13 middle, and 6 high school classes. Ben Ricks (NC Wildlife Resources Commission; NCWRC) and Dr. Heather Evans (NCSU) were guest lecturers at the teacher training. During training, teachers are provided information about American Shad life history, restoration, and management. They received equipment and instructions for hatching shad eggs in their classrooms and learned ways to incorporate shad and aquatic

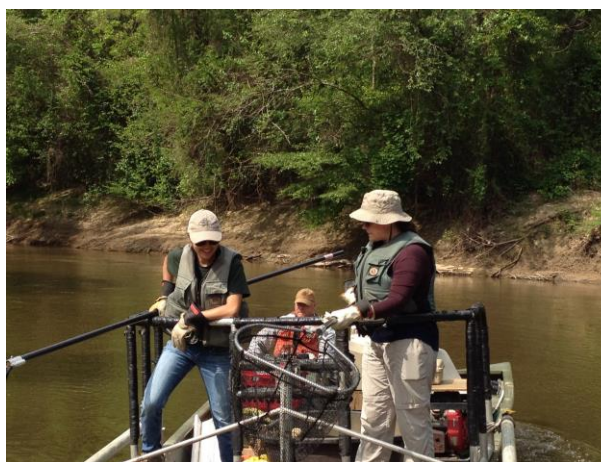
ecology into their curriculum. At the 2016 workshop, teachers participated in shad printing (Gyotaku) and shad genetic and watershed exercises.

American Shad eggs were generously provided by Stephen Jackson and staff at the US Fish and Wildlife Service's (USFWS) Edenton National Fish Hatchery. Classes received their eggs in April and raised them for one week, while conducting multiple lessons based around the American Shad, exposing students to important science and math concepts. Three classes chose to hatch their shad in water from the Neuse River (as opposed to municipal water) this year. Twenty-three of the classes released their larval American Shad in the Neuse River basin, while the other four released their fish in the Roanoke River.

"I think the students gain a much better understanding of their watershed and things that affect the watershed by having this hands-on experience. I think they also gain a better understanding of what it might be like to be a fisheries or wildlife biologist from meeting people involved in those fields such as Casey Grieshaber (NCSU), our fish dissection helper, CC King from the NCWRC, and the rangers at the Eno and Neuse Rivers State Parks."

An overall theme reported this year from the teachers is that the students are much more aware of the organisms, the rivers, and the watersheds around them and the impacts that humans have on these resources. We received great feedback on the program from both students and teachers throughout the 2016 program year.

Although there are many valuable educational aspects to the program, the fish anatomy, morphology, and dissection lessons continued to be a favorite! We appreciate that the NCSU Student Fisheries Society and the NCWRC generously provided their time and expertise to this aspect of the program. Thirteen students, post-docs, researchers, and educators from the Chapter and NCWRC volunteered to conduct these lessons: Ani Popp, Casey Grieshaber, Casey Williams, Gus Engman, Jennifer Archambault, Dr. Jesse Fischer, Kayelyn Simmons, Kevin Hining, Mike Campbell, Spencer Gardner, Stephanie Buhler, Tiffany Penland, and Tomas Ivasauskas. Because of these volunteers and the generosity of fish donations (over 250 fish – Thank You Dr. Rich Noble, Dr. Phil Doerr, Dr. Jim Rice and fellow NCSU anglers, Tiffany Penland, Ani Popp, and Spencer Gardner, and multiple NCWRC fish hatcheries) we were able to facilitate all 19 of the requested dissection lectures (551 students).



*Ben Ricks and Kayla Herrera (both with NCWRC) demonstrating boat electrofishing at Smithfield boat ramp (along with: Stacey Feken, Albemarle-Pamlico National Estuary Partnership) (photograph by D. Pender)*



We received invaluable assistance from partners and volunteers helping with the deliveries of eggs, attendance at releases, and educational lectures. In addition, CC King (NCWRC) conducted an aquatic macroinvertebrate lesson on the Eno River and Ben Ricks conducted an electrofishing demonstration on the Neuse River. Working with this program is a positive experience for all involved.

Melissa Dowland, Megan Chesser (both with NC Museum of Natural Sciences), and I give a big thank you to all of the many volunteers, particularly the NCAFS Chapter, the NCSU Student Fisheries Society, and the NCWRC! If you would like to be involved next year, please contact Danielle at [danielle.pender@naturalsciences.org](mailto:danielle.pender@naturalsciences.org).



*Vance Charter School release at the Roanoke River (photograph by D. Pender)*



*Fish dissection and anatomy lesson at Walkertown Middle School (photograph by Brad Rhew)*

“Dissection is an experience that the students would never have.”

“The dissection really adds to the experience because kids get to see parts of the fish that they never really think about. Like the swim bladder – they never before wondered how a fish can go up and down and stay upright in the water. If they ever noticed that fish have different shapes of fins, they certainly never wondered why.”

“It was an amazing experience. Gave the students an opportunity to understand the anatomy of fish and how their body parts/adaptations help them with survival.”



*Kevin Hining (NCWRC) fish dissection and anatomy lesson at Walkertown Middle School (photograph by Brad Rhew)*

*Submitted by Danielle Pender, Shad in the Classroom Program Specialist,  
NC Museum of Natural Science, Education Section*

## The Legacy Behind the Logo

Have you ever wondered about the history of our logo? I'm not talking about the latest version, updated circa 2014 by then President-elect Brena Jones to include the red AFS logo with digital photographs of a Fantail Darter perched inquisitively atop the state and a Roanoke Logperch peering cautiously out from amongst the rubble (Figure 1A). I am talking about the original logo *circa* 1992 with two Fantail Darters on the look-out, which graced our first newsletter in September 1992 (<http://nc.fisheries.org/wp-content/uploads/2016/02/September-1992.pdf>) (Figure 1B), and which has been photocopied an untold number of times by the Chapter's secretaries and newsletter editors. Have you ever thought about who may have drawn it? And why Fantail Darters? Well, I have.

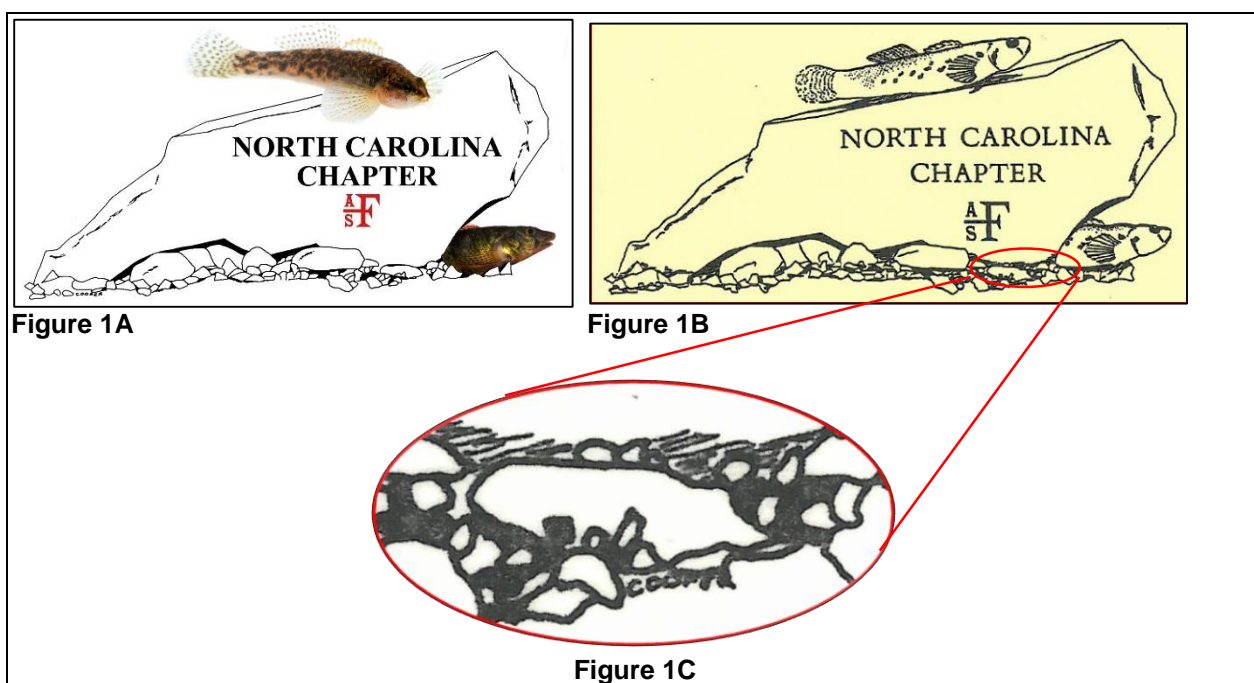


Figure 1. Chapter logos, present (1A) and past (1B and 1C).

While purging some of the Chapter's Secretary/Treasurer files this past winter, I came across several drawings that were submitted in a "Design the Logo" contest in February of 1992. I looked at the original winning drawing and my eyes were drawn to very tiny lettering just below the gravel and to the left of the bottommost Fantail Darter (Figure 1C). I immediately recognized the name: Cooper! The logo had been drawn by Dr. John E. Cooper -- one of the founding members of the Chapter. But why Fantail Darters, and why by Dr. Cooper? Only recently, did I figure this all out -- or at least tried to. For those of you who did not know Dr. Cooper or his legacy, let me tell you a little bit about him.

Dr. John E. Cooper was born on November 17, 1929. He served in the U.S. Marine Corps, received his Bachelor of Science from Johns Hopkins University in 1957, his Masters of Science in Zoology from the University of Kentucky (UK) in 1968, and his PhD in Zoology and Ecology from the University of Kentucky in 1975.

In 1974, he began working at the North Carolina State Museum of Natural Sciences (now known as the North Carolina Museum of Natural Sciences, NCSM) in Raleigh as the Director of Research and Collections. During his tenure at NCSM he held various positions. In the spring of 2014 he retired from his position as Research Curator of Crustaceans.

Prior to working at NCSM, he was a field technician in a rodent ecology project at John Hopkins University, worked at the Reptile House at the Baltimore Zoo, was a biology teacher at Baltimore City College, a teaching assistant at UK, an Assistant and Associate Professor of Biology at the Community College of Baltimore, and, for a short period of time, affiliated with the Institute of Coastal and Marine Resources at East Carolina University in Greenville, NC.

Dr. Cooper loved to write. He authored or co-authored technical articles, as well as notes and articles for the lay naturalist, especially on topics pertaining to speleology in Virginia, Maryland, Alabama, and Kentucky and even the Hodag (Cooper 1963). By the time he received his BS, he already had published 18 papers; by the time he earned his MS, he had published 112 more, and by the time he received his PhD he had 146 publications on his resume. During his professional career, he contributed an additional 102 articles ([Bibliography of Dr. John E. Cooper](#)). Throughout his career he never strayed physically or scientifically far from caves and their unique fauna. In fact, most of his articles were about caves and cave-associated fauna.

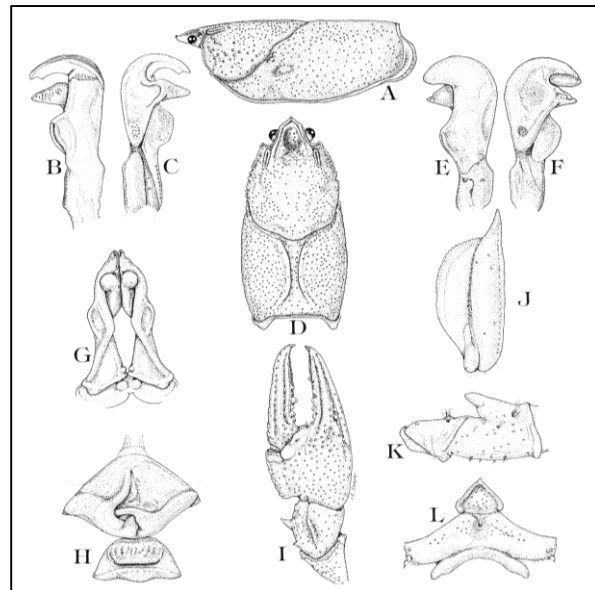
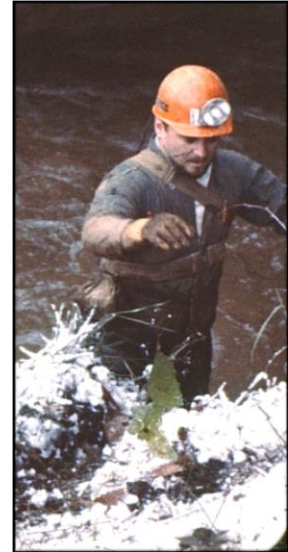


Figure 2. Illustrations of *Cambarus (Cambarus) davidi* Cooper, 2000 by John E. Cooper, *Proceedings of the Biological Society of Washington*. 113:431-442.



While at the NCSM, he described 25% (10 out of 40 known species) of North Carolina's indigenous crayfish fauna, publishing prodigiously in the *Proceedings of the Biological Society of Washington* and as a staunch, longtime supporter of the *Journal of the North Carolina Academy of Sciences*. His illustrations of crayfish were remarkable (Figure 2). And, oh by the way, he also published 23 papers on fish, including nine species summaries in the *Atlas of North American Freshwater Fishes*, and described (with Dr. R. A. Kuehne) *Speoplatyrhinus poulsoni*, the Alabama Cavefish.

He did not spend all of his time writing because, while at NCSM, Dr. Cooper identified 7,809 catalogued lots within the crustacean database

(<http://naturalsciences.org/research-collections/invertebrates-collection>). He

also deposited a ton of material into the NCSM collection, starting with collections that he made in the 1960s. Currently, there are over 300 localities in the database from where he collected crustaceans.

Characteristic of a true and “old-school” professional, Dr. Cooper always took the time and effort to thank those who had provided him with specimens in the acknowledgements, in the species distributions, and in the original species descriptions. He was generous with his time with me and never took issue with how many specimens I brought to him for identifications that were the by-catch of DWR's wadeable stream fish community assessment program. Many of the lots I brought him represented new species, undescribed and unresolved taxonomically challenging species, and new distributional records. Often when I walked over from my office to the Museum bringing him more specimens, I would encounter Dr. Cooper taking his morning or afternoon stroll around the complex, puffing away on his ever-present pipe. From our frequent e-mail exchanges, I kept a file of many of my favorite Dr. Cooper phrases. He was cynical at times, but I enjoyed our good-natured back and forth banter.

#### My Favorite Dr. Cooper Expressions

“Going beyond the pail”

“Thanks again for your interest, perspicacity, fortitude, and all-round good guyness”

“That just goes to show you that there's a certain symmetry in something or other”

“More on *Barbicambarus cornutus*, for your edification. I have yet to finish the article, and have no idea where to publish it if I ever do! I just like to write ----.”

“Ergo, this is all good stuff.”

“I've complied with your request that the 50,000+ crayfish you brought in, um yesterday, be identified by today. I labored, um, all night, fortified only by caffeine and ethanol fumes. YOU OWE ME BIG TIME, FELLA!!”

Hey, guy, you got your priorities all mixed up. You pay us \$5 per crayfish to curate your collections. Of course, you never pay up. Just wait'll the bill comes due; you'll have to hock every *Pimephales* and *Elassoma* you come across.





So why Fantail Darters? Why not crayfish? Well, NCAFS is primarily a fisheries management and conservation organization, but we have recently “widened our seine” to be more inclusive of those studying invertebrates such as crayfish, snails, and freshwater mussels; imperiled aquatic species; and aquatic toxicology issues. To my knowledge, Dr. Cooper never published on darters, although there was a John E. Cooper who published two papers on Logperch, Fantail Darter, and Rainbow Darter in 1978 and

1979 in the American Midland Naturalist and in the Transactions of the American Fisheries Society. But, he was affiliated with Appalachian Environmental Laboratory and the University of Maryland, Frostburg. Perhaps Dr. Cooper just thought it was fitting to design a logo that had a Fantail Darter, one of North Carolina’s more widely distributed darters, perched atop and under the Ol’ North State looking outward to see what’s coming down the riffle, be it prey or pollution, and to protect the cavity where the next generation’s eggs have been laid. I don’t know the true answer, but I do miss the chance of asking Dr. Cooper about it.

Sadly, Dr. Cooper (aka Doc or Coop) passed away on August 28, 2015. I had the fortunate opportunity to work with him for the past 20 years. His contribution to North Carolina and the southeastern United States fauna, whether living in streams, ditches, caves, or swamps, will not be forgotten. Thanks, Doc, for going beyond the pail!

*Submitted by Bryn H. Tracy, NC Division of Water Resources and Secretary/Treasurer NC AFS, with special thanks to Jeff Beane, David Cooper, Gabriela Hogue, Jamie Smith, and Emily Tracy who contributed material and/or reviewed this contribution.*

#### **Crayfish and Fish Species Described by Dr. John E. Cooper**

*Cambarus (Aviticambarus) veitchorum* Cooper and Cooper 1997

*Cambarus (Cambarus) lenati*, Cooper 2000

*Cambarus (Cambarus) davidi* Cooper 2000

*Cambarus (Depressicambarus) doughertyensis* Cooper and Skelton 2003

*Cambarus (Jugicambarus) tuckasegee* Cooper and Schofield 2002

*Cambarus (Puncticambarus) johni* Cooper 2006

*Cambarus (Puncticambarus) hystricosus* Cooper 2003

*Cambarus (Puncticambarus) aldermanorum* Cooper and Price 2010

*Cambarus (Puncticambarus) brimleyorum* Cooper 2006

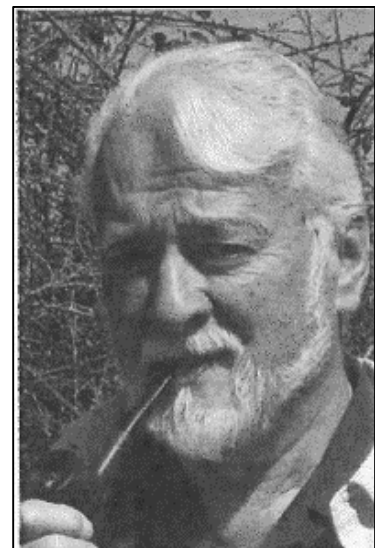
*Cambarus (Puncticambarus) hobbsorum* Cooper 2001

*Orconectes (Procericambarus) carolinensis* Cooper and Cooper 1995

*Orconectes (Orconectes) sheltae* Cooper and Cooper 1997

*Procambarus (Ortmannicus) braswelli* Cooper 1998

*Speoplatyrhinus poulsoni* Cooper and Kuehne 1974



## NC Chapter Represented at 7th World Fisheries Congress in Korea

It was a long flight, but somebody had to do it! Tom Kwak (NC Cooperative Fish and Wildlife Research Unit) attended the [7th World Fisheries Congress in Busan, South Korea](#), May 23-27, 2016. The meeting was attended by over 1,000 delegates from 60 countries spanning six continents — including one from NCAFS! This is an important gathering for global fisheries science that only occurs every four years.



*Tom at the Jagalchi Fish Market in Busan, South Korea. So many interesting fishes and invertebrates -- including skates, hagfish, snakeheads, and eels!*



*Tom Kwak joins fellow Cooperative Research Unit scientists (L-R) Mark Rogers, Scott Bonar, Donna Parrish (program chair), and Craig Paukert, at the 7th World Fisheries Congress in Busan, South Korea.*

Tom presented an invited symposium paper on freshwater mussel climate change impact and authored another on documenting climate change impacts on inland fishes. He also organized a walking tour of the Busan fish market and cultural center — talk about fish and cultural diversity (see photo)! This conference traditionally emphasized global marine fisheries, but recent organizers have encouraged greater focus on inland systems. The 8th World Fisheries Congress is being planned for Australia in 2020 — so start saving your data and dollars now and plan to attend!

*Submitted by Tom Kwak, NC Cooperative Fish and Wildlife Research Unit*

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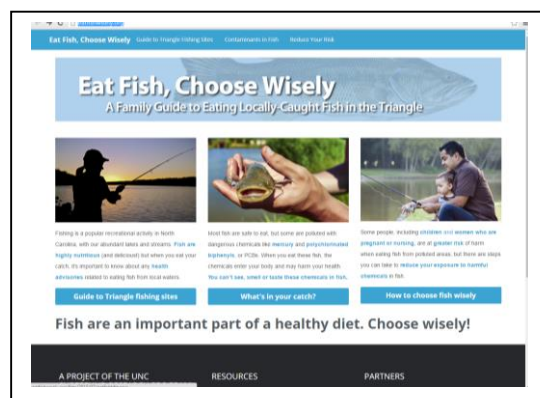
## Fish Consumption Information – Two New Tools Improve Communication About Contamination in Fish

Click on the links below to check out new resources on fish consumption advisories in North Carolina. Resources include maps to find locations to catch fish that are safe to eat, recommended serving sizes and recipes, as well as information on the pollutants of concern in North Carolina and their health effects.

NC State University Statewide Fish Consumption Web Resources  
<https://appliedecology.cals.ncsu.edu/fish-consumption/>



UNC Fish Consumption information on Triangle Fishes <http://eatfishwisely.org/>



## Aquatic Vegetation as a Management Tool Workshop

The Virginia and North Carolina Chapters of the American Fisheries Society will be hosting an [Aquatic Vegetation as a Management Tool workshop](#) at the Visitor Assistance Center at John H. Kerr Reservoir on Thursday, September 22nd. This one-day workshop will cover topics such as species of native aquatic vegetation to introduce or establish for fisheries enhancement in lake or reservoir systems, optimum aquatic vegetation coverage necessary for fisheries benefits, and strategies that reservoir managers can utilize to manage desired aquatic vegetation. Instructors for the workshop will be Mark Fowlkes (NCWRC) and Dr. Rob Richardson (NCSTU). The workshop will take place from 9:00 am – 5:00 pm and consist of a morning classroom session and an afternoon field session on Kerr Reservoir to observe ongoing vegetation

projects. **Participation in the workshop will be limited to the first 40 people that register.** Lunch and snacks will be provided. There is a \$25 fee for attending the workshop to cover the cost of food and workshop materials. If you would like to register for this workshop, please contact the following individuals:

**For VA Chapter members** - Aaron Bunch – [Aaron.Bunch@dgif.virginia.gov](mailto:Aaron.Bunch@dgif.virginia.gov)

**For NC Chapter members** - Chris Wood – [chris.wood@ncwildlife.org](mailto:chris.wood@ncwildlife.org)

[Directions to Visitors Assistance Center at John H. Kerr Reservoir](#)

Address for Visitors Assistance Center:

1930 Mays Chapel Rd.

Boydton, VA 23917

**Lodging options in Virginia** - [Best Western Plus](#) and [Comfort Inn and Suites](#)

**Lodging options in North Carolina** [Hampton Inn in Henderson](#) and [Sleep Inn](#)

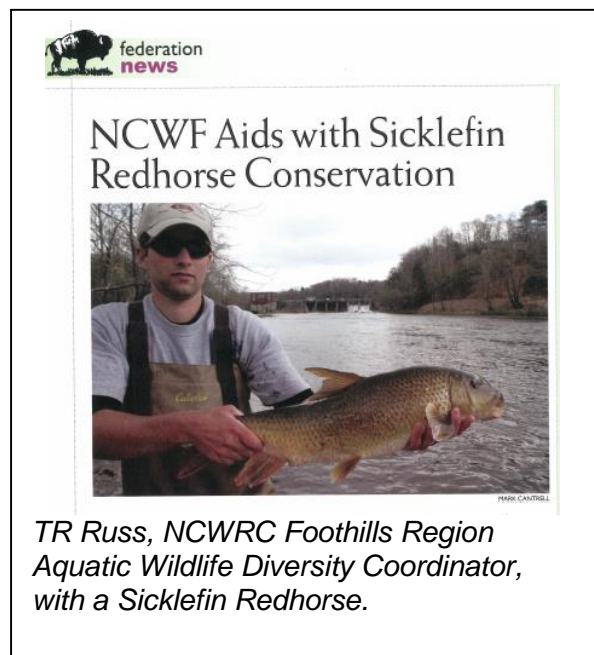
*Submitted by Chris Wood, NCAFS Education and Outreach Committee Chair*

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### **NC Wildlife Federation Aids with Sicklefin Redhorse Conservation**

Click on the link and scroll down to page 10 to view the story.

[NCWF Spring Journal](#)





## Call to Action!

If you want to contribute, have a story idea or would like us to include something in next quarter's newsletter, e-mail Kevin Hining [kevin.hining@ncwildlife.org](mailto:kevin.hining@ncwildlife.org) or give him a call at 336-877-1087. Also, if you want to become more involved with one of the many great NCAFS committees then please check the link below for information about each one, contacts, etc., <http://nc.fisheries.org/who-we-are/committees/>

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## Valuable Links

The [American Fisheries Society Home Page](#) offers a wealth of links to assist you in your fishy endeavors. Information on ordering AFS books, annual meetings, chapter links and joining the AFS can be found there.

[Click to view dates & deadlines](#)

**UPCOMING MEETINGS**  
In Fisheries & Ecology

This and [archived NCAFS newsletters](#), along with links, [chapter information](#), and [upcoming meetings](#), can be found on the [NCAFS website](#).

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