



### President's Message

I wish to thank everyone who volunteered their time in organizing the 2010 SCAFS/SCFWA annual meeting. In these tougher times, the generosity and concern provided by the entire membership was impressive. The meeting was held in February at the Fort Johnson SCDNR auditorium. The reception/awards dinner was graciously provided by the South Carolina Aquarium. The generosity and time of the entire staff was greatly appreciated. Additionally, our partnership with SCFWA was an important component to this year's success.

New officers were elected at the 2010 business meeting. Incoming President is Shane Boring. Shane is a long-time member of SCAFS and an excellent fisheries ecologist. He will make a great contribution to the membership. Liz Osier has agreed to continue as Secretary-Treasurer. Liz is a professional freshwater ecologist with SCDNR and has done an outstanding job over the last two years in this position. We are extremely grateful that she has offered to continue working with us.

On a more fisheries-related note, I have been summoned to work on the Deep Water Horizon oil spill in the Gulf of Mexico. It is hard to describe the massive amount of effort required to limit the affected area and begin to assess the impacts. A vast array of habitat types and associated species are impacted by this spill. To understand how far-reaching the impacts may be will require effort well beyond the Gulf. To this end, we should begin to discuss what we can do to prepare to understand the effects along our own South Carolina coast. Prior to oil coming to our geographic area, we should have in-place those background measures that allow us to determine what the impacts to our resources may be. As you think about this, I suggest we consider a forum, perhaps via email, perhaps as a

separate meeting, to share ideas about how best to anticipate our data needs. If you have any thoughts, please let me know.

I look forward to working with everyone this year. Please feel free to contact me anytime with ideas you may have to improve our chapter. Additionally, thank you for your continued membership.

Anna Toline  
SC-AFS President



### Fall Workshop 2009

The 2009 Fall Workshop was entitled "River Restoration and Fish Passage" and was cosponsored by the SCFWA. The workshop was held on November 19 at Hobcaw Barony Discovery Center in Georgetown, SC, and was a huge success with nearly 30 attending. Presentation from the workshop are on our website.

The subject of the 2010 workshop will be "Freshwater Mussel Conservation and Restoration Challenges." Stay tuned for specific dates, venue and registration information.



### Bayless Award for Best Professional Paper Kevin Kubach, South Carolina DNR

Kevin Kubach was announced as the winner of the 2009 Bayless Award at our Annual Meeting on February 9-10, 2010 at the SCDNR Fort Johnson Marine Lab in Charleston. The award was for Kevin's presentation "What's out there? Estimating

statewide stream conditions in the South Carolina Stream Assessment,” co-authored with Mark Scott (SCDNR) and presented at the 2009 SC-AFS annual meeting held at the Clemson Outdoor Lab.



The Bayless Award was created in honor of Jack D. Bayless, to recognize the best South Carolina presentation/paper given at each annual chapter meeting. Each year, volunteer judges evaluate presentations in the following categories:

- Significance to aquaculture and fisheries,
- Experimental design and analysis,
- Organization,
- Presentation, and
- Quality of visual aids.

Presenters are scored on a scale of one to four, four being excellent, for each category. The presenter with the highest total score receives the award. Any members interested in volunteering as judges for the next annual meeting, or joining the Awards Committee, should contact SC-AFS President or President-elect.



## Conservationist of the Year Award

Fred C. (Fritz) Rohde was recognized as the Conservationist of the Year at the 2010 Annual Meeting social on February 9, 2010 at the South Carolina Aquarium. Fritz is the lead author of the recently published [Freshwater Fishes of South Carolina \(Belle W Baruch Library in Marine Science\)](#), 2009, by Fred C. Rohde, Rudolf G. Arndt, Jeffrey W. Foltz, and Joseph M. Quattro. He is also co-author of an earlier book: [Freshwater Fishes of the Carolinas, Virginia, Maryland, and Delaware](#) by Fred C. Rohde and others. Both books have extended our knowledge of the freshwater fishes of the area and have provided clear and ready access for field researchers and authors.

The Conservationist of the Year Award is presented periodically at the annual SC-AFS meeting. This is the most prestigious award bestowed by the SC-AFS Chapter and it recognizes outstanding contributions in the conservation of South Carolina fishery resources. Chris McDonough is accepting nominations for the Conservationist of the Year Award and you can contact him at [McDonoughC@dnr.sc.gov](mailto:McDonoughC@dnr.sc.gov).



## Report of the joint SC-AFS and SCFWA Annual Meeting

The annual meeting this last February was held at the SCDNR Fort Johnson Marine Laboratory in Charleston. The 2010 meeting was organized with the South Carolina Fisheries Workers Association. Special thanks to everyone who helped organize the meeting, especially Elizabeth Osier, Marcel Reichert, Anna Toline, Al Crosby, David Wilkins and Pam Corwin. We also appreciate those who pitched in at the meeting to keep things running smoothly.

The meeting was opened with a welcome by Jeanne Riley, President of the SC-AFS. Anna Toline, SC-AFS President Elect served as Program Chair. The program consisted of eighteen presentations, seven of those by students.

Our business meeting was held on February 9. New offices were elected (see Page 8). Cecil Jennings, President of the Southern Division of AFS updated the chapter on regional matters.

Awards were announced at the social. The 2010 “Best Poster Award” went to Corbett Norwood for “Habitat Movement of American Shad in the Santee Cooper Lakes System.” The SC-AFS Jack Bayless Award for Best Professional Paper at our 2009 annual meeting went to Kevin Kubach (SCDNR) for his presentation “What’s out there? Estimating statewide stream conditions in the South Carolina Stream Assessment,” co-authored with Mark Scott (SCDNR). Thanks goes to all volunteers who served as judges for the 2009 annual award. Congratulations to all recipients!

A wonderful social and dinner were held at the South Carolina Aquarium. Many thanks to the aquarium for providing the food, drinks and venue, and thanks to the many aquarium staff who provided tours. The social included a raffle that helped to offset meeting costs. Thanks to David Wilkins and Pam Corwin and the team of volunteers who worked hard to make the raffle a success. We appreciate all the sponsors of the meeting, including Entrix, Inc. and Kleinschmidt Associates for donating travel funds. Thanks to all the members of SC-AFS and SCFWA for their efforts in organizing the annual meeting!

◇◇ Speakers and poster presenters at our annual meeting on February 9-10, 2009 at the SCDNR Fort Johnson Marine Resources Research Institute, Charleston, SC. ◇◇

### Presentations

**Tanya Darden\*, Matt Walker, Karl Brenkert, Justin Yost and Mike Denson;** SC Department of Natural Resources. Population genetics of cobia – management implications along the southeast United States coast.

**Jim Bulak;** SC Department of Natural Resources. Use of gill nets to monitor striped bass in reservoirs.

**Anna Toline\*, Leo Lentsch and Michelle Johnson;** ENTRIX, Inc. Modeling effects of climate change on endangered species habitat.

**Barbara Taylor\* and Jim Bulak;** SC Department of Natural Resources. The benthos of upper Lake Marion: a preponderance of molluscs.

**Ben L. Carswell\* and Cecil A. Jennings;** Georgia Cooperative Fish and Wildlife Research Unit. Does water level management of brackish impoundments on the Combahee River affect a resident population of gulf pipefish (*Syngnathus scovelli*)?

**Jessica A. Stephen;** University of South Carolina and SC Department of Natural Resources-MRRI. Effects of minimum size limit regulations on exploited fish populations.

**Joseph C. Ballenger;** SC Department of Natural Resources-MRD. What can reproductive traits indicate about life history strategies: a case study with sheepshead in Chesapeake Bay?  
**Kelly F. Robinson\* and Cecil A. Jennings;** University of Georgia. Production of estuarine-use functional guilds of fishes in managed impoundments in coastal South Carolina.

**Kelly F. Robinson\* and Cecil A. Jennings;** University of Georgia. Production of estuarine-use functional guilds of fishes in managed impoundments in coastal South Carolina.

**Bryan Dansen;** SC Department of Natural Resources-MARMAP. Estimating black sea bass reproductive productivity on artificial and natural reefs off the Atlantic coast of the Southeastern United States.

**Chuck Tucker;** SC Department of Natural Resources. Spawning by the gulf flounder (*Paralichthys albigutta*) off the South Carolina coast.

**Paulette P. Mikell;** SC Department of Natural Resources. Postlarval gag ingress monitoring in the southeast US Atlantic.

**Daryl Weldon;** SC Department of Natural Resources. Effect of density on growth and survivorship of Pacific white shrimp (*Litopenaeus vannamei*) in a biofloc system.

**Jason Haveman;** SC Department of Natural Resources. Input considerations for the sustainable production of Pacific white shrimp (*Litopenaeus vannamei*) in a hyperintensive, minimal-exchange raceway.

**Edward Durant;** SC Department of Natural Resources. Cumulative physical and biochemical characteristics of a minimal exchange, supersensitive Pacific white shrimp (*Litopenaeus vannamei*) aquaculture system.

**Steve Arnott\* Bill Roumillat, John Archambault, Joy Gerhard;** College of Charleston and SCDNR , Tanya Darden, and Mike Denson; SC Department of Natural Resources. Synchrony in the dynamics of red drum populations along the South Carolina coastline.

**Christopher McDonough;** SC Department of Natural Resources. Estimating the size and age composition of B-2 fish (caught and released alive) in the recreational fishery for red drum and spotted seatrout in South Carolina.

**Julia Byrd\*, Brad Floyd, Eric Hiltz, Marcel Reichert and Mark Collins;** SC Department of Natural Resources-MRD. Characterization of the mudminnow (*Fundulus heteroclitus*) fishery in South Carolina.

**Nancy J. Brown-Peterson, David M. Wyanski\*, Susan K. Lowerre-Barbieri, Francisco Saborido-Rey, Jonna Tomkiewicz and Beverly J. Macewicz;** University of Southern Mississippi, SC Department of Natural Resources, Florida Fish and Wildlife Conservation Commission, Instituto de Investigaciones Marinas, Technical University of Denmark, National Marine Fisheries Service. A standardized terminology for describing reproductive development in fishes.

## Posters

**Beth Cushman, Tanya Harding and Bill Post;** SC Department of Natural Resources. American shad population recovery in the Edisto River, South Carolina: using genetics to characterize population dynamics and stocking contribution.

**Megan R. Kent, Craig L. Browdy and John W. Leffler;** College of Charleston and SC Department of Natural Resources-MRRI. Can Pacific white shrimp (*Litopenaeus vannamei*) consume and digest suspended biofloc microalgal species?

**Corbett Norwood;** SC Department of Natural Resources. Habitat Movement of American Shad in the Santee Cooper Lakes System.

**John W. Leffler\*, Gloria Seaborn, Ed Wirth and Craig L. Browdy;** SC Department of Natural Resources-MRRI. Human and health benefits and risks associated with consumption of farmed and wild shrimp and red drum.

**Julia Byrd\*, Brad Floyd, Eric Hiltz, Marcel Reichert and Mark Collins;** SC Department of Natural Resources-MRD. Characterization of the mudminnow (*Fundulus heteroclitus*) fishery in South Carolina.



## Reports From our Membership

### **Restoration of the Turquoise Darter to Six Mile Creek, Pickens County, South Carolina** by JW Foltz ([jwfoltz@clemson.edu](mailto:jwfoltz@clemson.edu)), K. Kubach, S. Irwin and J. DeLong.

The turquoise darter (*Etheostoma inscriptum*) is one of many darter (Percidae) species native to the southeastern United States, in particular the Altamaha, Savannah, and Edisto River systems in Georgia, South Carolina, and North Carolina (Rohde et al., 1994). It is considered a high conservation priority species by the South Carolina Dept of Natural Resources.

(<http://www.dnr.sc.gov/cwcs/pdfhigh/Other.pdf>)

Among the streams of the upper Savannah River drainage containing *E. inscriptum* is Twelve Mile Creek, part of the Seneca Hydrologic Unit (United States Geological Survey unit number 03060101) in Pickens County, South Carolina. As evident in numerous collection records (see Fig 2a), turquoise darters have historically been present in Twelve Mile Creek and most of the other sampled streams in this portion of their native range.

Six Mile Creek is within the Seneca Hydrologic Unit in Pickens County and is the fourth order main channel of the next drainage northwest of Twelve Mile Creek (Fig 2b). This warmwater stream originates near the town of Six Mile, South Carolina, and flows southwest until it reaches the impoundment Lake Issaqueena in the Clemson University Experimental Forest.

More than 30 years of sampling in Six Mile Creek never resulted in the capture of any species of darter. Darters were probably extirpated during the period from 1830 to 1930 when cotton fields and other crops covered 80% of Pickens County. The land was so terribly managed that the U.S. Government acquired it under the Bankhead-Jones Farm Tenant Act. Eventually Clemson University would come to own this land due to the tireless efforts of Dr. George H. Aull.

Six Mile Creek was chosen for a re-introduction effort for the turquoise darter which has been stocked every February since 2003 (Kubach 2003;

<http://people.clemson.edu/~jwfoltz/Research/reports/darter/thesis/kubach.pdf>). Initial stocking density was based upon habitat use data from Jay DeLong's M.S. Thesis (DeLong, J. M. 1991. Habitat abundance relationships of three benthic fishes in a South Carolina mountain stream. Unpubl. M. S. Thesis. Department of Aquaculture, Fisheries, and Wildlife. Clemson University, Clemson, South Carolina.).

Nearby Prater's Creek is the source population.

Eighteen riffles were sampled using Leslie Depletion Analysis in 2008. Average darter density was 0.37 darters per square meter of riffle (Irwin 2009;

<http://people.clemson.edu/~jwfoltz/Research/reports/darter/thesis/Irwin.pdf>). Every riffle in the Clemson Forest has turquoise darters residing on them. Recent stockings have been made for the purpose of additional genetic diversity.



Figure 1. A male turquoise darter

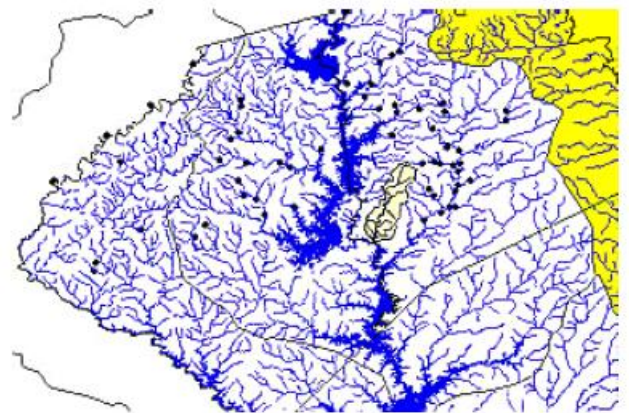


Fig 2a. The "Seneca" 8-digit HUC showing historic turquoise darter collections.

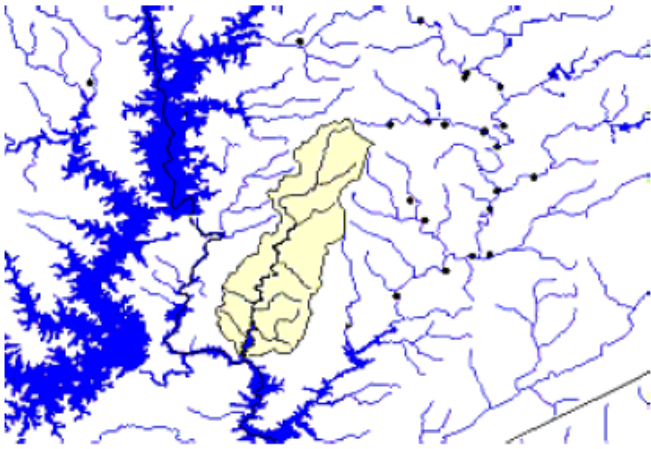


Fig 2b. Six Mile Creek - a 14-digit HUC.



Figure 3. Jeff Foltz, Kevin Kubach and Lorianne Riggins release turquoise darters into Six Mile Creek in 2009.

## SCAFS Officers

### PRESIDENT

Anna Toline  
843-545-0216  
[president@scafs.org](mailto:president@scafs.org)

### PRESIDENT-ELECT

Shane Boring  
803-462-5625  
[president-elect@scafs.org](mailto:president-elect@scafs.org)

### SECRETARY/TREASURER

Elizabeth Osier  
843-661-4767  
[secretary@scafs.org](mailto:secretary@scafs.org)

### PAST-PRESIDENT

Jeanne Riley  
803-561-4076  
[pastpresident@scafs.org](mailto:pastpresident@scafs.org)

### Membership

Dues to:  
Elizabeth Osier  
SCDNR  
2007 Pisgah Road  
Florence, SC 29501

### Microscope Available for Student Use

A compound microscope donated to the SCAFS Chapter is available for student use. For more information, please contact Marcel Reichert at [ReichertM@dnr.sc.gov](mailto:ReichertM@dnr.sc.gov).

### AFS Book Warehouse

AFS books are available by contacting the orders department operated by Books International.

Five ways to order:

- AFS online bookstore: [www.afsbooks.org](http://www.afsbooks.org)
- Phone: 703-661-1570

- Fax: 703-996-1010
- E-mail: [bimail@presswarehouse.com](mailto:bimail@presswarehouse.com)
- Mail: American Fisheries Society  
c/o Books International  
PO Box 605  
Herndon, VA 20172

The August 2009 Edition of the Southern Division AFS newsletter is now available on the SDAFS web site at <http://www.sdafs.org>. Download your copy now!

### Meetings

**South Carolina Water Resources Conference -**  
October 13-14, 2010 in Columbia, South Carolina.

**2011 Southern Division of AFS Spring Meeting -**  
January 13 - 16, 2011 in Tampa, Florida.

**64th Annual Conference of the Southeastern Association of Fish & Wildlife Agencies (SEAFWA) -** October 17 – 20, 2010 in Biloxi, Mississippi.

**140th Annual Meeting of the American Fisheries Society -** September 9-16, 2010 in Pittsburgh, Pennsylvania.

## South Carolina Chapter of the American Fisheries Society

### Conservationist of the Year Award

The Conservationist of the Year Award recognizes outstanding contributions in the conservation of South Carolina fisheries resources. It is one of the most prestigious awards bestowed by the SC AFS Chapter. This award is generally presented each spring and nominations are accepted until December 31 of the previous year.

Nominations can be made by electronic submission to the president of the SC-AFS at [president@scafs.org](mailto:president@scafs.org).

#### Conservationist of the Year Award nomination form

Date:

Nominated by (name):

Affiliation:

Phone number:

E-mail address:

Relationship with nominee:

Nominee (name):

Address:

Affiliation:

Why should this nominee be considered for the Conservationist of the Year Award?

Provide a short description of the nominee's professional career and accomplishments, in particular where they pertain to the Conservationist of the Year Award.

Provide a website or publication information that may assist the award committee in their decision (if available).