



NEWSLETTER

JUNE 2003

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We would appreciate your comments on this electronic version of the NC Chapter Newsletter. Please send all responses to Joe Hightower (jhightower@ncsu.edu)

President's Message

What comes around, goes around.
Or
Have you mentored anyone lately?

At some point in our lives, professional or personal, we should think about whether we are giving more or taking more. Are you taking up space or opening new spaces; do you consume more resources than you create; are you a student or a teacher? If you're a professional biologist with a college degree or currently pursuing that degree, you've probably been influenced, encouraged, and supported by a mentor. Early in our education and careers, we primarily sit on the receiving end of the mentorship table, but as we advance and grow as biologists and individuals, we should consider passing on the gift that some one gave us when we needed it.

Mentorship need not be formal, as in the student–advisor relationship. There are people around us, perhaps younger, less experienced, or new to the job, that could benefit greatly by some guidance, advice, and encouragement. Opportunities to provide mentorship surround us in the field of fisheries and aquatic science, and our AFS state chapter provides even more. It's up to all of us to provide that mentorship for unselfish reasons, and it's our responsibility to contribute to the future of our science and environment.

I've benefited tremendously from the generosity of my mentors throughout my education and career. Specifically, my two graduate advisors, Larry Larimore and Tom Waters, have been instrumental in shaping me as a scientist, professional, and a person. But there have been many other individuals that served as mentors informally – no big deal, just good colleagues, sharing their time, thoughts, and concern. People like Gary Warren, a former boss in an undergraduate job sorting fish and picking bugs, and Rich Noble, who facilitated hiring me at the NC Coop Unit, and stuck around long enough to make sure I wouldn't screw it up after the hire, have also had a big part in getting me to this present stage of my career. Graduate students may serve as mentors to each other and pass on that support to the new cohort behind them. There's really no excuse not to pass it on.

Jim Martin, a most eloquent speaker, former Fisheries Chief for Oregon, and current Science Director at Pure Fishing, urges us not to miss the opportunity to let our mentors know how they've changed our lives. I further suggest that we honor them by sharing their gift of mentorship to us with others. The top line of this President's Message is to think about mentoring those around you for unselfish reasons and to do the right thing for our science, chapter, and resources. But the bottom line is to think about mentoring for the personal rewards to yourself – you can't lose!

Tom Kwak

NCSU Student Subunit Report

Please check out the sub-unit web page at http://www.ncsu.edu/stud_orgs/sfs/ to learn more about our group and upcoming activities. The sub-unit list serve is the best way to stay up to date on fisheries related happenings at NCSU. Directions on how to subscribe are available at the web site.

Contact Alesia Read (anread@unity.ncsu.edu) if you have any questions about Sub-unit events.

Submitted by Alesia Read, Student Subunit President

Environmental Concerns Committee

The Environmental Concerns Committee is working towards developing a North Carolina position paper or resolution on sedimentation. We are working closely with the Parent Society's policy on sedimentation, and are evaluating the best medium to address this issue. We are also working on a possible action item to get at addressing some of the issues that are identified.

In addition, we are evaluating the feasibility of tackling additional items this year, with consideration of a particular issue's "urgency". Other potential issues being considered are a salt water fishing license, beach re-nourishment, clearing and snagging, and floodplain mining. We are also examining the possibility of working on various issues with other societies or chapters.

Committee organizational news: We have had some Committee membership changes. As I indicated in the March Newsletter, Bryn Tracy has joined the Committee. Bryn is employed by the N.C. Division of Water Quality, Biological Assessment Unit. The Committee is pleased to have him as a member. Dave McHenry has also generously agreed to not only serve as a Committee member, but as the new Chair. Therefore, I am stepping down as Chair but will remain a Committee member, and Dave will continue as Chair for the remainder of the year. Dave is employed by the N.C. Wildlife Resources Commission, Division of Inland Fisheries and formerly worked for Weyerhaeuser. The Committee is very excited to have Dave as their new Chair, and I think that he will serve the Chapter well. Judy Ratcliffe, Pete Rand, and Chris Taylor will also remain as Committee members. However, unfortunately, Duane Harrell is stepping off of the Committee. We appreciate Duane's contribution over these past few years, and we will miss him. I appreciate the determination and hard work of all of the Committee members!

If Chapter members would like to participate in addressing any of the issues discussed above or have any other ideas or suggestions please contact Dave McHenry

at E-mail: david.mchenry@ncwildlife.org or use the comment form on the new web page.

Submitted by Danielle Pender, Past Environmental Concerns Committee Chair

News from around North Carolina

AFS News from President Fred Harris – Pre-registrations and hotel reservations for the annual meeting indicate the Quebec City meeting will be well attended. We have an outstanding technical program and I hope many of our chapter members will be able to attend.

We plan to officially announce the establishment of the Fisheries Conservation Foundation in Quebec City. Gus is making the final edits on the bylaws and the Foundation should become a reality in the next few weeks. Several substantial contributors have already committed to provide financial support and recruit other supporters. The Foundation will function as an outreach arm of AFS to further our resource conservation mission. Efforts are underway to come up with a significant initial project that will help us attract additional funding.

AFS sponsored an interesting and informative symposium in Boise, Idaho that continued our efforts to define the roles of propagated fish in resource management. The proceedings publication will be available within the next 12 months.

We increased the number of Hutton scholars this year to 55. Two of last years students and their mentors were recognized by the US Forest Service, our largest financial supporter, at the annual Rise to the Future Awards ceremony in Washington, DC. Both students were outstanding individuals and following the ceremony other agencies expressed interest in supporting the program.

North Carolina Museum of Natural Sciences and Progress Energy Redhorse Survey News from Wayne Starnes and John Crutchfield - Despite the high flows that thwarted effective sampling on the Robust Redhorse Conservation Committee's annual spring survey of the Pee Dee, these conditions actually made some good things possible in the hunt for another rare redhorse, the undescribed Carolina redhorse. In late April, a team of Progress Energy and North Carolina Museum of Natural Sciences researchers, including John Crutchfield, Mike Swing, and Vann Stancil from Progress, and Wayne Starnes, Gabriela Hogue, and Dave Hewitt from the Museum, were able to navigate electroshocking boats well up the Little River tributary to the Pee Dee, in upper

Blewett Falls Reservoir, thanks to the increased flows. There, about 5-6 miles above the mouth, they confirmed the presence of Carolina redhorses in spawning condition. It was suspected that a population represented by a few individuals captured by Progress Energy in upper reaches of Blewett Falls over the last couple years might be using Little River as a spawning stream.



Undescrbed Carolina redhorse from the Little River tributary of the Pee Dee near Troy, NC.

Moreover, a separate population was discovered further up the Little River in two small impoundments in Montgomery County south of Troy. These impoundments were visited twice in late April-early May by Progress Energy, Museum folks, and Bob Jenkins of Roanoke College, Virginia. There appears to be a population of undetermined size composed of very large individuals in these reservoirs. In fact, several individuals exceeded any previously known lengths and weights for the species from the Pee Dee basin or the only other known population of any size in the lower Deep River of the Cape Fear basin. It is apparently a much larger species than previously thought, with one female tipping the scales at 6.6 pounds. As such, it may well represent North America's largest undescrbed vertebrate! Presumably, these populations are using river reaches upstream of the impoundments for spawning and future survey efforts will be directed at documenting this. No young individuals were documented from these populations and an effort needs to be made to determine whether they are currently recruiting.

2004 NCAFS Meeting News from Mallory Martin, NCWRC – Plans are being made to hold the 2004 Chapter meeting in Asheville, NC. More details will be coming in the September newsletter.

Fish Passage News from Joe Hightower, NCSU - Over a 10-week period this spring, Ben Ricks and Joe Hightower evaluated the effectiveness of a fishway on Black Creek, a blackwater tributary of the Neuse River just downstream of Smithfield. The fishway is a pre-fabricated Denil (steep-pass) ladder installed on the low-head Holts Lake dam. It is one of two in North Carolina and the only one to be evaluated thus far. A 4X4X8 ft

trap constructed at the top of the ladder retained any fish passing over the dam.

Three days each week, habitat variables were recorded and any fish found in the trap were processed. A total of 949 gizzard shad or an average of 13.6/day used the fishway during February-May. The number of fish using the ladder appears to be well correlated with stream discharge. High discharge levels may encourage fish to move upstream or cause the water level to rise up the ladder and facilitate passage.



Holts Lake dam fishway.

In addition to gizzard shad, the fishway was also used by two American shad and one golden shiner. This fishway was obtained by Mike Wicker of the U.S. Fish and Wildlife Service and installed by the dam owner. Given the number of small dams on North Carolina streams, the use of a fishway could reconnect fish with previously inaccessible upstream habitats and contribute to the restoration of migratory fish populations.

North Carolina Museum of Natural Sciences and USGS Stream Survey News from Wayne Starnes and Tom Cuffney - The NCSM crew has shifted to field work of a very different sort. They are currently collaborating with the USGS, Water Resources Division, North Carolina District Office in Raleigh in a study of streams in the Triangle-Triad area looking at the effects of urban intensity on aquatic communities. These studies will eventually entail modeling fish and benthos data in conjunction with analyses of multiple aspects of land use and human populations in the watersheds. Sampling of those streams is ongoing. Following completion of the urban streams surveys this summer, NCSM folks hope to return to occasional exploratory sampling for Carolina redhorses in the Pee Dee and Cape Fear basins. Anyone who can spare a day and an electroshocking boat for these efforts from time to time will be greatly appreciated.

Raleigh Aquarium Society News from Gerald Pottern
A presentation by Brandon Berry entitled *Native*

Brackish and Marine Fishes Suitable for Aquarium Keeping will be given on Thursday, August 7.

The Raleigh Aquarium Society meets at 7:30 pm on the first Thursday each month at the NCSU Vet School. [Exception: no Meeting July 3]. Each monthly meeting includes a speaker or discussion group, raffle of aquarium supplies, fish & plant trading, and refreshments. Attendance at monthly meetings is free. The Vet School is beside the State Fairgrounds at the corner of Hillsborough Street (NC-54) and Blue Ridge Road in western Raleigh. Go downstairs past the library (under the whale), straight through two sets of doors, then into first lecture room on the right. We are looking for speakers for our monthly meetings this year. The club's main focus is keeping and propagating fish and plants in aquaria, but we're also interested in general aquatic ecology, fish natural history, conservation, aquaculture, ponds, diving & collecting trips, and related fishy topics. Please come to a meeting, and contact Gerald Pottern at 919-556-8845 or gpottern@RJGAcarolina.com if you have ideas for a program.

A Couple of News Items from Dani Wise, NCSU – A Stream course titled “Natural Rivers: Mechanisms, Morphology and Management” is being offered by Dr. Richard Hey. The Course will be taught October 20-24, 2003 in Asheville, NC. Names are currently being accepted for enrollment and a \$500 deposit is required. Please contact Tammy Winfrey, 336-750-0522, Fax 336-750-0177, or pvtw@triad.rr.com for more information.

Stream mitigation guidelines are available on the web! A workgroup consisting of representatives from U.S. Army Corps of Engineers, Wilmington District (District), North Carolina Division of Water Quality (DWQ), U.S. Environmental Protection Agency, Region IV (EPA), Natural Resources Conservation Service (NRCS) and the North Carolina Wildlife Resources Commission (WRC) prepared The Stream Mitigation Guidelines to have joint and consistent, District and DWQ stream mitigation guidance for the regulated community of North Carolina. http://www.saw.usace.army.mil/wetlands/Mitigation/stream_mitigation.html

AFS InfoBase News from Aaron Lerner - The American Fisheries Society (AFS) is pleased to announce its newest service – Fisheries InfoBase. Fisheries InfoBase adds an additional 10 years (1988-1997) of our journal articles to the existing AFS online database (1998-current). AFS Journals Online contains electronic versions of the complete contents of the four AFS journals:

- Transactions of the American Fisheries Society,
- North American Journal of Fisheries Management,

- North American Journal of Aquaculture (formerly the Progressive Fish-Culturist),
- Journal of Aquatic Animal Health,

Fisheries InfoBase is available immediately as a separate subscription, running through December 2003. 2003 rates are \$15.00 for individual subscribers, and \$190.00 for libraries and institutions. (2004 rates will be \$25.00 for individuals and \$380.00 for libraries and institutions). You may search, access, and download all full-text articles from all four AFS journals from the years 1988-1997. You have unlimited access to the database during the term of your subscription. Please go to http://www.fisheries.org/publications/afs_journal.shtml for additional details and to subscribe.

Pirate Perch Reproduction News forwarded by Gerald Pottern

– Until recently the reproductive behavior of the pirate perch (*Aphredoderus sayanus*) has remained a mystery and the subject of much speculation. The urogenital pore in pirate perch, swamp fish, and cave fishes (order Aphredoderiformes) is located just behind the gills, and in the cavefish *Amblyopsis* the eggs are drawn from the urogenital pore forward into the gill cavity, where they are brooded until hatching. Many ichthyologists have presumed that pirate perch probably do something similar, brooding eggs either in the gill chamber or mouth, except that: 1) there is no published report describing a pirate perch spawning event; 2) no live pirate perch has been found with eggs in the mouth or gill cavity; 3) spawnings in aquaria have resulted in eggs either scattered about the bottom or in a clump of plants or debris; and 4) the volume of eggs produced exceeds the volume of the mouth and gill cavities.

Finally, William J. Poly of the California Academy of Sciences and James E. Wetzel of Southern Illinois University observed aquarium spawnings by several pairs collected from the Cache River basin in southern Illinois, and have captured the event on film. In the April 2003 issue of *Ichthyological Exploration of Freshwaters* (Vol 14: 2, p 151-158) the authors report that pirate perch eggs and sperm are drawn by opercular pumping from the urogenital pore into the gill cavity, probably along two thoracic gooves on either side of a central knob immediately anterior to the urogenital pore. The pumping effect is created by rhythmic gill flaring, apparently similar to the behavior used when coughing out food or debris. The margin of each branchiostegal membrane (the gill flap) is curled inward, which may assist this process and prevent loss of eggs or sperm. The gametes are drawn past the gills, into the mouth, and then blown out of the mouth into the spawning substrate, often among fine root mats of trees. The breeding pair is oriented side-by-side, and repeatedly push their snouts into the spawning substrate prior to and during spawning. The male's cloud of sperm is released while the female is

ejecting eggs from her mouth. The eggs are non-adhesive and demersal, and no nest-building or parental care was observed. The authors have termed this unique method “transbranchial spawning”, describe the morphological features and behaviors associated with it, and discuss its possible evolutionary significance among the cavefishes.

Spotlight on Students and Young Professionals

Justin James, Hutton Junior Fisheries Biology Program Summer Intern, Progress Energy - Justin James, a rising junior at Cary Senior High, will be working in the Progress Energy’s Environmental Services Section this summer. Justin will be working with Progress Energy under the Hutton Junior Fisheries Biologist Program sponsored by the American Fisheries Society (AFS). Justin was selected as the Hutton student from a field of high school candidates in North Carolina. The Hutton Junior Fisheries Biology Program is a mentoring program for high school students designed to stimulate interest in pursuing a career in fisheries science among groups underrepresented in the fisheries professions, including minorities and women.



Justin James, future fishery biologist!

Students selected for the program are matched with a professional mentor for a summer-long, hands-on experience in a marine or freshwater setting. Mike Swing, of Progress Energy and an NCAFS Chapter member, will serve as Justin’s mentor. Justin will help with field data collection at various power plant sites in the Carolinas as well as associated laboratory duties. A scholarship is

awarded to each student accepted into the program. Progress Energy provided a \$3,000 grant to support a Hutton student. This is the second year that Progress Energy has sponsored a Hutton student.

Alesia Read, MS Student, NCSU - Alesia is a MS candidate under Dr. Joe Hightower and current Student Subunit President. Alesia was born and raised in New York then (wisely) moved to the Raleigh area. She earned a BS in Biology (Minor in Chemistry and a concentration in Marine Science) from The University of North Carolina at Chapel Hill in 1998. As an undergraduate, she received a fellowship that allowed her to participate in a blue crab study at the Institute of Marine Sciences in Morehead City, NC. She was also able to participate in a study-abroad program in Iceland, where the main economic stay of the country revolves around fisheries. While there, Alesia learned about the

difficult social and economic issues that arise when managing fisheries by setting quotas and limits.

After graduation, Alesia worked for 1.5 years as a fisheries technician at Mote Marine Laboratory in Sarasota, Florida. She participated in the snook and red snapper stock enhancement projects, including much experience in the use of coded wire and visible implant elastomer tags. She also organized an annual snook tournament that allowed for public participation in the Mote research program. (Maybe she will organize a bowfin tournament up here...)

Alesia's experiences as an undergrad and at Mote led Alesia to pursue a career in fisheries science, and she began her graduate program at NCSU in the fall of 2001. The overall goal of Alesia's thesis research is to develop a protocol, based on field studies and GIS analyses, for evaluating the quality of spawning and nursery habitat for American shad. The specific application will be in the upper Roanoke basin (upstream of Kerr dam), where fish passage is being considered as part of the FERC relicensing of the Roanoke Rapids and Gaston dams.



Alesia holding an American shad collected during a recent Virginia Department of Game and Inland Fisheries electrofishing survey on the Nottoway River.

Alesia has a longstanding professional interest in Marine Protected Areas. During 2002, she was able to spend time working for The Nature Conservancy in St. Croix, USVI, on a proposed marine park. Other professional interests include educational outreach and teaching. She has served as a Departmental Ambassador for the Office of International Scholar and Student Services, and has participated in the Scientist in the Classroom Program. When not working (or volunteering), her hobbies include camping, hiking, and scuba diving.

After completing her MS program, Alesia plans to work toward a PhD in the general area of fisheries management and would someday like to teach at the college level. She hopes to be remain involved in Environmental Education or Policy or, even better, both.

Steve Fraley, NCWRC Aquatic Nongame Biologist, Mountain Region - Steve was born and raised near Rogersville, TN and graduated high school 1983. He earned BS (1994) and MS (1998) degrees from UT-Knoxville, studying ichthyology and aquatic entomology under Dr. David Etnier. Steve worked in Dr. Etnier's lab as an undergraduate research participant, primarily processing and cataloging fish samples for the UT Museum of Ichthyology and caddisflies for the UT caddisfly collection. Steve also studied malacology with Dr. Paul Parmalee. Steve's interest in aquatic macroinvertebrates led to a thesis project dealing with assessment of stream improvements using macroinvertebrate community assessment.



Steve Fraley, NCWRC Aquatic Nongame Biologist

Steve also worked with Conservation Fisheries, Inc., Knoxville, TN doing surveys for and assisting with captive propagation of rare fishes. He has worked for Fish and Wildlife Associates, Whittier, NC and during graduate school began contract work for the Tennessee Valley Authority. Steve was hired as a permanent TVA employee in January 2000 and stayed there through August 2002, when he accepted the position with the NCWRC as non-game aquatic biologist for the Mountain Region. Steve's responsibilities with the NCWRC include monitoring and managing for non-game aquatic species (fishes, mollusks, and crayfishes) in the New, Catawba, Broad, upper Savannah, Watauga, French Broad, Little Tennessee, and Hiwassee river basins in NC. This includes monitoring the population status of listed and other non-game species, providing technical guidance and input for permit reviews, hydropower relicensing, and other opportunities for non-game aquatic species conservation. Highlights of recent work include: surveys to update the status of several rare species in the region; assisting DWQ with modifying water quality rules for waters that support federal T&E species; helping to facilitate a project to reintroduce extirpated fishes to the recovering Pigeon River; and working with game fish biologists, other agencies, and university personnel to assess the impacts of delayed harvest trout

stocking on sensitive non-game species. Steve lives in the Fines Creek community in Haywood Co. He is married to the former Nancy Dagley, who is employed by the TVA as Natural Areas Coordinator. These days, Steve spends his off time gardening, battling the multiflora rose that has about taken over their home, and fishing.

Steve's professional affiliations include: Freshwater Mollusk Conservation Society, TN Chapter AFS (move membership soon to NC), North American Benthological Society, Southeastern Fishes Council, and Carolina Area Benthological Workers (informal).

Meetings of Interest

133rd Annual Meeting of the AFS – Aug. 10-14, 2003
Quebec City, Quebec, Canada. Worldwide decline of wild fish populations.

http://www.fapaq.gouv.qc.ca/fr/AFS_congres/accueil.htm

AFS Early Life History Section 27th Annual Larval Fish Conference – Aug. 20-23, 2003, Santa Cruz, CA.
<http://www.lfc2003.com>.

Fourth World Fisheries Congress – May 2-6, 2004, Vancouver, British Columbia. Reconciling fisheries with conservation: The challenge of managing aquatic ecosystems. <http://www.worldfisheries2004.org>.

If you are aware of meeting information that would be beneficial to the membership of the NCAFS, please send it to the newsletter editor for inclusion in the next newsletter. djcoughl@duke-energy.com

Employment Opportunities

Fishery related jobs can be found on the AFS web site at: <http://www.fisheries.org/jobs.html>. This site also offers links to job postings on non-AFS web sites.

If you have a fishery-related job opening and would like to post it in the next NCAFS Newsletter, please send your announcement to the newsletter editor. djcoughl@duke-energy.com

Valuable Links – Courtesy of AFS

The American Fisheries Society Home Page offers a wealth of links to assist you in your fishery endeavors. Information on ordering AFS books, public outreach, annual meetings, chapter links and joining the AFS can be found at <http://www.fisheries.org/>. Additional links can be found courtesy of Dr. Mike Allen and the Southern Division, AFS. <http://www.sdafs.org/links/msallen1.htm>