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President's Message

Spring and summer mark the busiest time of year for a fisheries biologist. For the past few months many of us have been in waders, wet suits, and on boats more than in the office. I'm confident Chapter members are working hard and staying safe while collecting the data that drive conservation and management efforts across the State. I appreciate all the valuable time our members volunteer to make our Chapter such a success. I feel we owe a special thanks to Jerry Finke for all the hard work he has unselfishly offered over the years working as our Web master. Jerry is now stepping down, but Kim Sparks has graciously offered her services to take on this important task. Expect a new Web site in the upcoming months as Kim and the Education and Outreach Committee work together to develop an updated site with a fresh look.

Congratulations to the Student Fisheries Society at NCSU for winning the AFS Outstanding Student Subunit award for the second year in a row. This is an amazing accomplishment! Our Chapter is lucky to have such an amazing and dedicated group of students to work with. Congratulations to officers Patrick Cooney, Gus Engman, Jake Hughs, and Katie Pierson, and all other NCSU Student Fisheries Society members for a job well done. I wish I could be in St. Paul when you receive the award, but please take plenty of pictures so we can celebrate again in the next newsletter!

The 2012 AFS annual meeting is fast approaching scheduled for August 19-23 in St. Paul, Minnesota. Remember that students are eligible for \$200-400 travel awards from NCAFS. For more information see

President's Message (continued)

<http://www.sdafs.org/ncafs/Awards.htm> The dates have also been set for the 2013 SDAFS annual meeting in Nashville, TN, February 7-10, 2013. Since this venue is so close, I hope to see many NC students and professionals in Nashville. Lastly, NCAFS President Elect Dr. Greg Cope is working hard to organize the 2013 NCAFS annual meeting. It isn't too early to volunteer for program development, organizing abstracts, etc. Contact Greg if you are interested in volunteering. It's a lot of work organizing our annual meetings so Greg would love to hear from you.

On behalf of the NCAFS Executive Committee, thanks for all your hard work and enjoy the remainder of the field season.

Chris Wood

Secretary-Treasurer's Report

[June 2012 Treasury Report](#)

Submitted by Julie Harris, Secretary-Treasurer

Environmental Concerns Committee

At the Chapter's annual 2012 business meeting, the ECC reported about NC Senate Bill 709 which would promote onshore and offshore gas and oil exploration and extraction in North Carolina, including hydraulic fracturing or "fracking" for natural gas primarily in the shale deposit under the Deep River Basin. The ECC in coordination with the Chapter President sent a letter to Governor Beverly Perdue, President Pro Tempore of the Senate Phil Berger, and Speaker of the House of Representatives Thom Tillis that encouraged careful consideration of the potential ramifications of oil and gas mining on the state's economically important fisheries. Comparable comments were sent to the NC Department of Environment and Natural Resources (NCDENR) which was charged with studying the environmental implications of shale gas and oil mining. The comments are posted on the chapter's ECC website link.

The NCDENR completed its study of hydraulic fracturing and concluded that it is environmentally safe with safeguards, though much information is needed to better predict its potential ramifications (see press release and Environmental Assessment links at <http://portal.ncdenr.org/web/opa/shale-gas-news-releases>.) According to the report, flow back water from wells in North Carolina may be chemically different from

Pennsylvania where it is often high in bromide, chloride, total dissolved solids, and other pollutants, but there is no way of assessing this until drilling occurs in our state. The report also concludes that there is insufficient information to predict impacts on fish.

In addition to the NCDENR study, the US Geological Survey also concluded an assessment of the gas reserve in the Deep River Basin and estimated that it could supply the state with 5.6 years of natural gas at 2010 consumption rates (<http://portal.ncdenr.org/web/opa/shale-gas-news-releases>).

The legislature passed modified energy bill legislation during the current session and has begun the process of developing rules to allow gas mining to begin by 2014.

In addition to reporting about “fracking” legislation, the Chapter was informed at the 2012 business meeting that Dr. Derek Aday has agreed to assume the ECC Chair. I wish to reiterate my appreciation for his “taking-of-the-reigns” and wish him well with the experience. Additionally, I regretfully neglected to, but now want to express my gratitude to present and past committee members and Chapter members for their ideas, knowledge, and support over the years. I believe that our efforts resulted in some valuable contributions to the Chapter.

With that, I’ll step aside.

Thank you

Dave McHenry, Past-Chair ECC

NCSU Student Subunit Report
(Spring Semester 2012)

The current officers of the Student Fisheries Society at North Carolina State University, the student subunit of the North Carolina American Fisheries Society, are Patrick Cooney and Gus Engman, co-presidents, Kelsey Lincoln as treasurer, Dan Brown as secretary, and undergraduate vice-president Gretchen Stokes. Current membership is approximately 20 students, with a number of faculty and professionals that regularly participate and join monthly meetings.

Our January meeting speaker was Dr. Ken Pollock. It was a great talk about angler telephone interviews in Western Australia. A yearly tradition in January found the Student Fisheries Society members judging incredible science projects at three local elementary schools (the future is bright if these kids are any indication of scientific potential).

We led off the semester by joining with the Leopold Wildlife Club in cooking a wild game feast for over 100 people. We fried up a huge pile of fish to go with the wild game spread, and people should keep an eye out for this event next January. Cooking contests included great prizes, and Patrick Cooney brought home first prize in the Fish category with personally harvested ingredients from the coastal, piedmont, and mountain regions of North Carolina (Pecan and Herb Encrusted Brook, Brown, and Rainbow Trout).

At our February meeting, Ed Corey joined us from North Carolina State Parks to talk about research opportunities in the State Parks. These lands represent a true treasure to our state and to our research objectives. We had impressive attendance not only in person, but also via our online webcasting through *Elluminate*.

Many of us attended and presented at the North Carolina American Fisheries Society meeting in Raleigh (SFS members gave half of the oral presentations). This year, we focused on getting undergraduate students involved. Matt Stilwell gave an excellent talk on professionals providing key opportunities to undergraduates, and an entire class of undergraduates attended a session of the meeting to learn about current research. As many of you know, our yearly fundraiser took place at this event and it was met with overwhelming support. The dedicated support of our donors and our ticket purchasers have allowed for continued excellence in our outreach activities and our travel awards for students presenting at meetings. We send a huge thank you to all who participated, especially Kim Baker who is an incredible supporter and believer in our group.



SFS President Patrick Cooney reviews excellent donors who support the student's fundraiser.



SFS dedicated members had a great. time making the student fundraiser a success



A few of the lucky winners of great prizes given away during the NCSU student raffle/auction.

With spring came the start of many field sessions and many more outreach activities. We participated with three water-body clean ups. Lake Raleigh on Centennial Campus of NCSU has become a pet project of our group for classes. We have noticed an accumulation of trash and helped clean up on a beautiful Saturday morning. We also organized a cleanup on another Saturday morning of our adopted section of Rocky Branch Creek on the Main Campus. Finally, we participated in our continued effort to help clean up the Neuse River.

At our March meeting, we heard from Wilson Laney with the US Fish and Wildlife Service about ongoing research and the listing of the Atlantic sturgeon. Wilson is a

regular attendee of our meetings and it was nice to have him presenting his expertise to the group.

Our last meeting of the school year in April was a little different; we screened a documentary titled Red Gold that discusses the Pebble Mine in Alaska, and the possible impacts on the world's largest Sockeye Salmon population residing in Bristol Bay. We had a lively discussion following the film, and are wondering what the impacts of fracking will have on North Carolina's stream environments.

Just as the school year ended, a large group of fisheries students took a camping trip to Kerr Lake and demonstrated we can catch fish without using electricity or nets. A group also participated in a weekend long summer camp at Yates Mill Pond for high school students from all of North Carolina to learn about fisheries opportunities available at NCSU.

At the end of May, The Student Fisheries Society conducted a fish assessment of Rockingham Lake near Reidsville, NC. Several graduate students trained other graduate and undergraduate students in methods commonly used in lake assessments, and a formal report was provided to the community with management strategies. With differing research projects and expertise in school, a shared project with SFS provided a perfect opportunity to reach common goals and discover each person's unique abilities.

Next up, a group will help with the NCSU Fisheries and Wildlife Summer Camp with field sampling in Lake Mickey, amongst other outreach events where we teach youngsters how to fish.

Enjoy the beginnings of Summer, and we invite all to join our SFS Facebook Group that serves as a forum for pictures, updates, discussion, and to network with alumni and professionals. To learn more and keep up to date with SFS, please join this group (North Carolina State University Student Fisheries Society), visit our NCSU website (clubs.ncsu.edu/sfs/), and also join our e-mail listserv (instructions on website). If you are out in the field, or away from Raleigh, we hope to see you on Elluminate for our September meeting where Bryn Tracy will discuss all things fishy in North Carolina, otherwise we will see you in person.

Finally, congratulations to all of the recipients of awards:

*At the Southern Division Meeting in Biloxi, Mississippi, the **Student Fisheries Society** was awarded the Outstanding Student Subunit Award for the 5th year running. Congrats to current and previous members for this great achievement.

***Kim Baker** was awarded the Lifetime Service Award and a coveted plunger for his continuous support of the Student Fisheries Society in raising money to help cover the costs of outreach activities and student travel to present research materials.



Kim Baker joyfully receives the “coveted plunger”!

***Tim Ellis** was awarded the second *Joseph E. and Robin C. Hightower Student Award* in Fisheries and Wildlife Sciences ([read about his research](#) in the News & Observer).

***Dr. Julie Cooney** was announced the recipient of the *Kenneth R. Keller Award* for excellence in doctoral research. She received her award at the spring banquet of Gamma Sigma Delta on April 25, 2012.



Dr. Julie Harris-Cooney with her Kenneth R. Keller Award.

***Will Smith** was awarded the Richard Noble Outstanding Student Presentation Award for his presentation about hurricane disturbance on tropical diadromous fishes at the North Carolina Chapter meeting.

***Patrick Cooney** was just recently awarded the winner of the Student Writing Contest by the Parent Society of the American Fisheries Society with a piece about gobies climbing waterfalls in Puerto Rico. Writing has always been a strong attribute of the NCSU SFS, where previous members Tamara Pandolfo and Steve Midway were awarded in this same contest, and Steve Midway, Dana Sackett, and Patrick Cooney currently write weekly fisheries posts at www.TheFisheriesBlog.blogspot.com.

Submitted by Patrick Cooney and Gus Engman, SFS co-presidents

News from Around North Carolina

North Carolina's Imperiled Fish Fauna, Part VIII
Submitted by Bryn H. Tracy, Fred C. (Fritz) Rohde, Wayne C. Starnes, and
Stephen J. Fraley
on behalf of the NCWRC's Scientific Council of Fishes

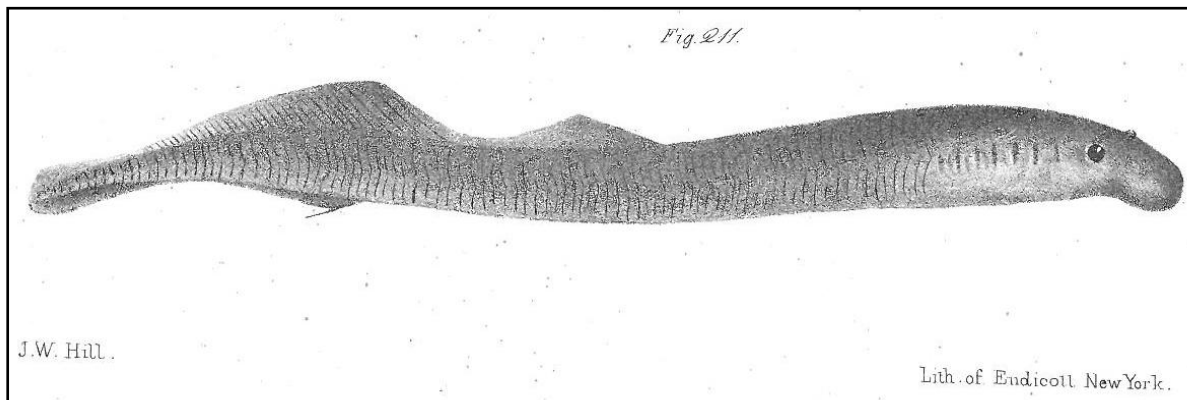
As mentioned in the Chapter's 2010-2012 newsletters, there are approximately 215 indigenous, described, and undescribed species of strictly freshwater fishes in North Carolina. Of these, 26% are considered imperiled as state or federally listed: Endangered (17), Threatened (17), or Special Concern (22) (Harris et al. 2010). It is the responsibility of the 15 member Scientific Council on Freshwater Fishes to submit its recommendations to the Nongame Advisory Committee of the North Carolina Wildlife Resources Commission (NCWRC) if changes in imperilment classifications for any species are warranted. To communicate our findings with the chapter membership, this is the 8th of 16 planned articles on the species that the Council believes have become more imperiled since the last listing in 2006. Thus acquainted, it is hoped that chapter members can serve as additional "eyes and ears" to expand our vigilance for these rare or highly localized fishes.

American Brook Lamprey, *Lampetra appendix* (DeKay 1842)
Current Status: Threatened, Proposed Status: Endangered



Original photograph by J. Abatemarco of the NJ Department of Environmental Protection, Bureau of Freshwater & Biological Monitoring (<http://www.state.nj.us/dep/wms/bfbm/fishpicturessite.html>); photo-enhanced by F. C. Rohde.

Type Specimen and Type Locality – The American Brook Lamprey was described by James E. DeKay in 1842 based upon specimens received from Providence, Rhode Island and the Hudson River, New York (DeKay 1842). At that time, the common name of the species was Small Lamprey. And, as was often the practice in those days, an exact type locality was not designated. The syntypes are apparently lost. In the 1900s, many earlier accounts of this species referred to it as *Lampetra lamottenii*, described by Charles Lesueur in 1827 from specimens collected near Mine Lamotte in Missouri. These syntypes were also lost and, since the Least Brook Lamprey, *L. aepyptera*, also occurs in that region of Missouri, Bailey (1980) judged *lamottenii* to be unidentifiable and reapplied the next oldest applicable name, *appendix*.



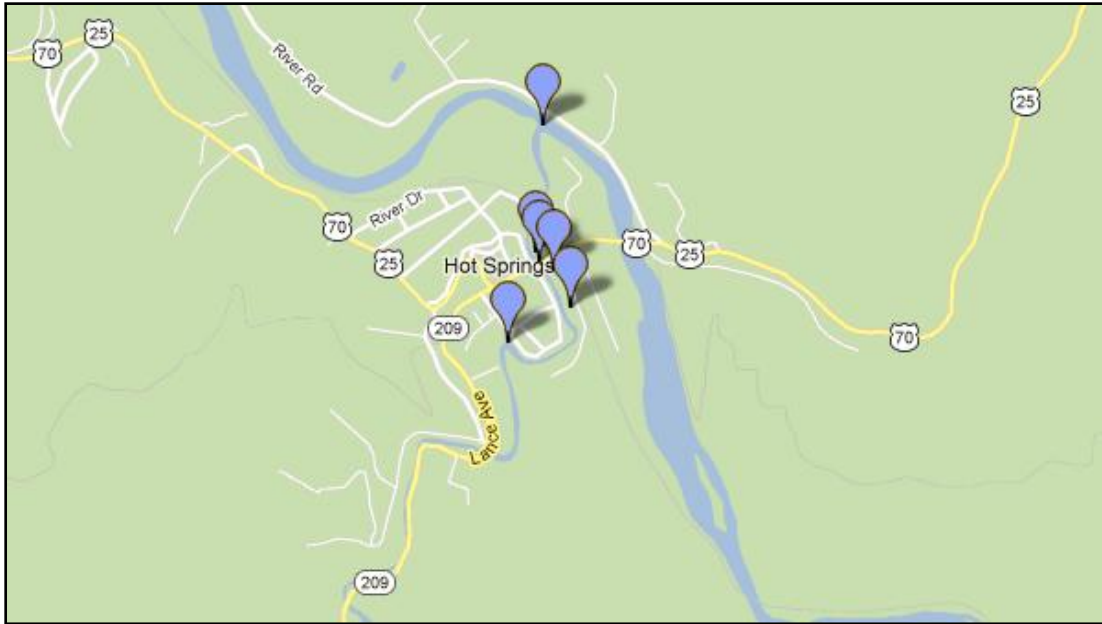
Original illustration of the American Brook Lamprey (Plate 64, Figure 211 from DeKay 1842).

Description – Lampreys are eel-shaped fishes lacking scales, jaws, and paired fins. They have a funnel-shaped mouth, seven gill apertures on each side of the body, a single median nostril, and a cartilaginous skeleton. The American Brook Lamprey is the only Tennessee drainage lamprey with a deeply notched dorsal fin. There are 63 to 73 trunk myomeres, usually 66-70; and pigmentation of adults and ammocoetes (larval lampreys) is uniformly gray/olive above and paler ventrally (Etnier and Starnes 1993). In Tennessee, adults often reach total lengths of 200 mm, and adults up to 300 mm total length are known from more northerly latitudes.

Range – The American Brook Lamprey is found in the St. Lawrence River basin, the Mississippi River basin, exclusive of the Missouri River basin, and along the Atlantic slope from New Hampshire to the Chowan River drainage in Virginia (Rohde 1980; Menhinick and Braswell 1997). Rohde (1979) recognized three subspecies, one of which, *L. a. wilderi*, is found in the lower Chowan River drainage of Virginia just above the North Carolina state line. It is also fairly common in the upland tributaries of east Tennessee (Rohde 1979; Etnier and Starnes 1993).

In August 1977, the first three specimens of the American Brook Lamprey from North Carolina were collected in the French Broad River at the mouth of Spring Creek in the Town of Hot Springs, Madison County (North Carolina State Museum of Natural Sciences [NCSM], Catalogue No. 7883). Since then, the species has been collected

only from Spring Creek within the Town of Hot Springs in 1983 (Menhinick 1986; Menhinick 1991), in 1994 and 1995 (Rohde *et al.* 1998; NCSM 26571 and 56657), in 2001 (NCSM 29779), and in 2009 (NCSM 55211 and 55215). Based upon recent records, its known population in North Carolina is restricted to Spring Creek.



The American Brook Lamprey in Spring Creek and the French Broad River, Madison County, North Carolina.
Map based upon data at the North Carolina State Museum of Natural Sciences, queried April 10, 2012.

Habitat – American_Brook Lamprey inhabits streams ranging from low to moderate-gradient warm brooks or small rivers (rarely large rivers) to streams that are cool to cold year long. Water is typically clear and substrates range from silt-sand to gravel-rubble (Jenkins and Burkhead 1994). Ammocoetes are found in quiet waters with a silt-sand bottom and adults are usually taken in riffles while spawning over gravel areas near ammocoete beds (Rohde 1980).

Life History and Ecology – Spawning typically occurs in mid-to late March in eastern Tennessee (Seagle and Nagel 1982). Adults move to the upper end of gravel areas and use their sucker-like mouths to move stones to excavate a pit (a larval bed) into which about 1,000 eggs are spawned. Females may produce over 3,000 eggs which hatch in about four days into ammocoetes that burrow into the silt. They obtain nourishment by straining plankton and organic particles from the water and from bottom sediments. Development lasts 5-6 years and ammocoetes transform into adults in late summer over a period of several weeks and spawn the following spring. Adults are non-parasitic and do not feed; they die shortly after spawning.

Rationale for Designation – The presence of a very small localized population in the French Broad River and in Spring Creek at Hot Springs, Madison County, warrants a designation of State Endangered. While other populations may occur in nearby French Broad tributaries, this is yet to be demonstrated despite considerable sampling in the

area. Thus Spring Creek may not be readily recolonized in the event of a local extirpation adding to the imperilment of the species in the state. The Spring Creek watershed was recently afforded supplemental water quality classification by the Division of Water Quality as Outstanding Resource Waters <http://portal.ncdenr.org/web/wq/ps/csu/classifications>.

Recommendations – Field survey efforts should concentrate on appropriate habitat in the lower French Broad River and in Spring Creek to ascertain the present status of this species. Despite being found in Spring Creek in 2009, fairly extensive surveys in 2007 did not detect them in Spring Creek or the lower French Broad River (S. Fraley, pers. com.) indicating the fickle nature of occurrences and varied detection probabilities. Surveys should also be initiated in the Chowan River system, focusing on the Meherrin River subsystem in Northampton and Hertford counties, as they have been found upstream in Virginia.

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Seagle, H. H., and J. W. Nagel. 1982. Life cycle and fecundity of the American Brook Lamprey, *Lampetra appendix*, in Tennessee. Copeia 1982: 362-366.

Spotlight on Students and Young Professionals

We are looking for candidates to feature in future issues. Have a candidate?.... Please forward information to the Newsletter Committee.

Meetings of Interest

2012 NCSU Student Fisheries Society– First Tuesday of each month, Raleigh, NC.
<http://clubs.ncsu.edu/sfs/>

2012 American Society of Ichthyologists and Herpetologists (ASIH) August 8 – 14
Vancouver, British Columbia, Canada <http://www.asih.org/annualmeetings>

- o [2012 Meeting of American Society of Ichthyologists & Herpetologists at World Congress of Herpetology](#)

142nd Annual Meeting of the American Fisheries Society– August 19-23, 2012, St. Paul, MN.

143rd Annual Meeting of the American Fisheries Society– September 9-12, 2013, Little Rock, AR.

2013 Southern Division of the American Fisheries Society Annual Meeting– February 7-10, Nashville, TN.

Workshop Announcement, forwarded by Kim Baker RC 131: Assessment & Identification of Riparian Vegetation July 26-27, 2012 NCSU Centennial Campus, NC
http://www.bae.ncsu.edu/programs/extension/wqg/srp/veg_workshop.html

Valuable Links

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/>. You can subscribe to the NCAFS list serve at ncafs@lists.fisheries.org.