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President's Line

"New Horizons for the Education Section"

In my last President's line, I wrote about how technological advances are changing the way we communicate and share information with students. In a similar fashion, emerging changes in societal views have important implications for natural resources education. Today, fisheries biologists are expected to have a broad outlook on fisheries resources that includes both manipulative and custodial management (e.g., consumptive versus non-consumption use), with an increasing focus on multi-scale, ecosystem level approaches to address natural resource problems. These trends have direct implications for how to train and mentor the next generation of fisheries scientists - and indeed, have become important priorities for a number of professional societies, universities, and state and federal resource agencies (Scalet 2007; Parker et al. 2008). The AFS Strategic Plan for 2010-2014 includes three overarching goals that include 1) global fisheries leadership, 2) education, and 3) values of AFS membership. To meet the challenges of a diverse and technological society, AFS is prioritizing the role of education in their mission goals. As an example--- AFS President-elect Wayne Hubert has selected 'education' as the topic of this year's Governing Board retreat in Pittsburgh. The Education Section is well-positioned to help identify and address priorities for fisheries education, and contribute to the mission of AFS. As these goals begin to take shape, the talents and dedication of Education Section members will be a valuable asset to the Society - and I encourage everyone to keep abreast and get involved.

With the annual meeting just around the corner, it is a great time to reflect on our accomplishments since Nashville. The Education Section supported a variety of projects and activities in 2009. The Section helped sponsor two student conclaves - one at Colorado State University and the other at Kansas State University that allowed undergraduate and graduate students to present research findings, network with other students, and build lasting professional relationships. The Section also contributed to "Catfish 2010", where our official sponsorship was able to offset meeting costs for several student presenters.

(Continued on Page 2)



Steve Chipps is the Acting Unit Leader at the South Dakota Cooperative Fish and Wildlife Research Unit and President of the AFS Education Section. He can be reached at: steven.chipps@sdstate.edu

Visit the Education Section of the
AFS online at:

www.fisheries.org/units/education/

Education Section of the American

President's Line (continued)

Two book projects supported by the Section will soon hit the book shelves, and include the 3rd editions of *Inland Fisheries Management in North America* (W. Hubert, M. Quist, eds.), and *Fisheries Techniques* (A. Zale, D. Parrish, T. Sutton, eds.). Finally, a new special column in *Fisheries* will feature education-related articles from the symposium held in Nashville titled "*Fisheries Education in the 21st Century: Accommodating Change*". We hope that this column will provide a conduit for future education-related articles and encourage Section members to consider contributing to this effort.

A number of Section members have given freely of their time and talents in preparation for the Pittsburgh meeting - and deserve special thanks. Thanks to Joe Hightower (Chair) and the Skinner Memorial Award committee for their efforts in selecting the 2010 Skinner awardees and honorable mentions. Similarly, Jason Vokoun (Chair) and the Excellence in Fisheries Education (EFE) committee worked diligently to select this year's EFE recipient. Rich Fulford, James Long (Chairs) and members of the Best Student Paper/Poster competition worked closely with the Pittsburgh steering committee and a new, online system to review and select students for this year's competition; this is a tremendous undertaking, so be sure to give Rich and Jim a pat on the back in Pittsburgh. A big thanks to our student members who, each year, contribute to a variety of important Section functions; Joe Gerken and Jesse Fischer (Editors, Newsletter), Kristal Schneider and Mark Fincel (Chairs, Membership), and Steve Ranney and Mike Meeuwig (Webmasters). Finally, I want to thank Education Section officers Mike Quist (President-elect), Craig Paukert (Secretary-Treasurer), and Tom Kwak (Past President) for diligently working 'behind the scenes' to ensure a successful meeting.

The 2010 business meeting of the Education Section is scheduled from 5 to 7 pm on Sunday, September 12 in the Westin Hotel. We hope to see everyone in Pittsburgh and wish you a safe and enjoyable summer! As always, if you have any question or ideas, please drop me an email (steven.chipps@sdstate.edu) or call (605.688.5467).

Scalet, C.G. 2007. Dinosaur ramblings. *Journal of Wildlife Management* 71:1749-1752.

Parker, I.D., E.K. Lyons, M.M. Licona, A.K. Scoggin, S.A. Sumrall, and A.E. Sutton. 2008. Dinosaur evolution: Student response to dinosaur ramblings. *Journal of Wildlife Management* 72:1453-1455.

Power to the People. . . And a Free T-shirt too!

Participating in the Education Section election is important! This year, all NCD and NED Education Section members are encouraged to vote for your respective division representatives. Because all of us need a little incentive to participate from time to time, we will be having a raffle for a Pittsburgh 2010 AFS Annual Meeting T-Shirt during the Education Section business meeting in Pittsburgh for all members that vote in the upcoming election (winner need not be present to win). Please read through the biographical sketches for each of the candidates, and for each position in your division only, select the candidate that you think is most qualified for the position. We've included a sample ballot in this newsletter; an official ballot and voting instructions will be sent out to all members soon. If you're not in the NCD or NED, no worries, we'll raffle another T-shirt for all attendees at the business meeting in Pittsburgh!

Elections for NCD and NED Reps: Candidate Bios

North Central Division Representative (Division Members only, vote for one)

Steven Cooke

Steven Cooke is an Associate Professor and Canada Research Chair in fish ecology and conservation physiology at Carleton University in Ottawa, Ontario. Steven Completed his B.E.S. (Environment and Resource Studies/Biology; 1997) and M.Sc. (Biology; 1999) at the University of Waterloo and his Ph.D. at the University of Illinois/Illinois Natural History Survey (Natural Resources and Conservation Biology; 2002). He then held an NSERC and Killam Post Doctoral Fellowship in the Centre for Applied Conservation Research at the University of British Columbia (2002-2005) prior to joining the professoriate. His research interests are broad but are generally related to understanding how wild fish respond to various anthropogenic and natural stressors. Steven has been actively involved with AFS for 15 years, holding positions including Chair of the Member Concern Committee and President of the Student Subsection, and currently is serving as Chair of the Publications Overview Committee where he has helped to launch the new journal "Marine and Coastal Fisheries". He is also Vice President of the Canadian Aquatic Resources Section of AFS. Cooke is keen to develop tools and strategies for improving aquatic education initiatives that target learners of all ages.

Tracy Galarowicz

Tracy Galarowicz is an Associate Professor in the Department of Biology at Central Michigan University. She received her B.S. in biology from St. Norbert College, M.S. from the University of Minnesota-Duluth, and Ph.D. from the University of Illinois at Urbana-Champaign. Tracy has been actively involved with the American Fisheries Society since 1994 and values the knowledge gained and relationships developed through AFS. Besides regularly attending state, regional and parent society meetings, she has served the society through a number of committees including current participation on the AFS Membership Concerns Committee and the TAFS subcommittee of the Publication Awards Committee. Since coming to CMU, Tracy has taught fisheries and conservation courses at the undergraduate and graduate levels, incorporating relevant management and research issues into lecture and laboratory. In addition, she advises both undergraduate and graduate student researchers. Opportunities to learn occur in many forms - whether in the classroom, the field, workshops, or community presentations for children or adults, and AFS and the Education Section provide resources for all to teach and learn at any level. AFS participation has truly been a rewarding experience for Tracy, and she would be pleased to serve as the North Central Division Representative.



Elections for NCD and NED Reps: Candidate Bios

Northeastern Division Representative (Division Members only, vote for one)

Andy Danylchuk

The overarching theme of my research is to understand factors that naturally influence the life history and ecology of fishes and other aquatic organisms, as well as how anthropogenic disturbances can influence the dynamics of their populations. My work spans both marine and freshwater systems, and includes stress physiology, behavioral ecology, spatial ecology, predator-prey interactions, and adaptations in life history traits as a response to disturbance. Much of my current research focuses on evaluating the potential impacts of recreational angling on fish populations, as well as working with stakeholder groups to develop best practices and education material for the recreational angling community. Some of this work involves the use of telemetry and associated emerging technologies to understand the ways fish function under 'normal' and disturbed conditions. I am also interested in sustainable aquaculture and the development of integrated food production models as a mechanism to reduce impacts on fish stocks at local, regional, and global ecosystems.

My knowledge and passion for fisheries and aquatic science is coupled with a personal and professional philosophy of life-long-learning and sharing. To that end, my goals as an educator are to facilitate learning by offering students the right tools and experiences to stimulate a sense of wonder and creative thinking. Over the past fifteen years, I have had the chance to teach in a variety of settings ranging from traditional classrooms and laboratories to remote field locations. Prior to joining the faculty in the Department of Natural Resources Conservation at U Mass Amherst, I spent nearly eight years designing and building a research institute in The Bahamas that was founded on the intrinsic values of connecting primary research to education and outreach. Using current principles in educational psychology, I have developed curricula that cater to students with a broad spectrum of learning styles. I am also a strong believer that teaching through experience can significantly enhance education by allowing students to apply what they have learned. Based on my experience and enthusiasm for teaching, I hope that I can contribute to the Education Section of the American Fisheries Society by helping fisheries scientists enhance the learning process for students of all ages.

Lisa Kerr

I am currently a Research Associate at the School of Marine Science and Technology, University of Massachusetts Dartmouth. I recently completed my Ph.D. in Fisheries Science at University of Maryland under the advisement of Dr. David Secor and received my M.S. in Marine Science from Moss Landing Marion Laboratories working under Dr. Gregor Cailliet. I am broadly interested in understanding the ecology and dynamics of fish populations and how populations and communities respond to climatic oscillations and exploitation. I am particularly motivated to understand mechanisms of persistence at the local and regional population and community level, with the goal of enhancing our ability to sustainably manage fish populations and the ecosystem as a whole.

(Continued on Page 5)

Elections for NCD and NED Reps: Candidate Bios

Northeastern Division Representative *(Continued)*

Lisa Kerr

Presently, I am a member of AFS and have served as the vote auditor for annual elections for the past three years. As a doctoral student at the University of Maryland, I was responsible for reviving the university's AFS Student Subunit and served as President for two years. As President, I worked to create a series of educational workshops aimed at providing local AFS student members professional skill development (topics covered included proposal writing, reviewing manuscripts, data presentation, and insights into careers in academics, federal agencies, and NGOs). I have also served as the Southern Division Student Representative to the Student Subsection of AFS, participating in the organization of student members at the national-level.

As an early career scientist I have held several teaching roles in which I have designed, taught, and lectured on various topics to different levels of students. I view excellence in teaching and research to be strongly linked. Through educating students I have become a better research scientist and have gained new perspectives on familiar material. The Education Section of AFS plays a valuable role in improving education of fisheries scientists. I feel my interest in fisheries education is aligned with the Section's goals and I would be excited to serve as the Northeast Division Representative for the Executive Committee of the Education Section.

BUSINESS MEETING

Be sure to attend the Education Section Business Meeting in the Westin Hotel September 12 (5:00—7:00).

In addition to getting updated on the activities over the past year and plans for the coming year, all attendees will be entered into a drawing for a Pittsburgh 2010 AFS Annual Meeting T-Shirt. And as always, snacks and frosty beverages will be served!

Sample Ballot

A similar ballot will be e-mailed to all Education Section members in the near future. In the meantime, please review the bios of each candidate and decide which of the candidates you think is most qualified for the position. Applicable Division members are encouraged to vote, and remember that voting automatically enters you into the T-shirt raffle!

SAMPLE BALLOT <i>Education Section 2010</i>	
North Central Division Representative <i>(Division members only, vote for one)</i>	
<input type="checkbox"/>	Steven Cooke
<input type="checkbox"/>	Tracy Galarowicz
Northeastern Division Representative <i>(Division members only, vote for one)</i>	
<input type="checkbox"/>	Andy Danylchuk
<input type="checkbox"/>	Lisa Kerr



2010 Skinner Memorial Award Winners

Elissa Buttermore (NC State)
 Michael Colvin (Iowa State)
 Devin DeMario (Penn State)
 Michael Gatlin (Oklahoma St)
 Zachary Penney (U. of Idaho)
 Josh Perkin (Kansas State)
 Kenneth Riley (East Carolina)
 Patrick Shirey (Notre Dame)
 Kelly Stockton (U. of Idaho)

Honorable Mentions:

Corey DeBoom (U. of Illinois)
 David Janetski (Notre Dame)
 Bonnie Mulligan (Southern
 Illinois)
 Catherine Murphy (LSU)
 Stephanie Shaw (S. Dakota St.)

Skinner Memorial Award

The 2010 Skinner Memorial Award Committee reviewed 46 applicants and awarded 10 Skinner Awards and 5 Honorable Mentions. Each Award winner will be reimbursed up to US \$800.00 for travel to the 2010 American Fisheries Society Annual Meeting September 12-16, 2010 in Pittsburgh. Honorable Mentions receive reimbursement for their registration at the Annual Meeting. All winners (including honorable mentions) receive a one-year student membership to the AFS. The Award winners and Honorable Mentions will be expected to come to the Education Section and Society business meetings as well as the AFS awards luncheon. Please congratulate these students if you see them at the meeting. The Skinner Award is really one of the highest honors our Society can give to students.

Skinner Memorial Award Committee: Joe Hightower (Chair), Mary Bremigan, Andrea Johnson, Marie-Ange Gravel, Dan Daugherty, Jeff Jolley, and Scott Heppell.



Joe Hightower is Assistant Unit Leader at the North Carolina Cooperative Fish and Wildlife Research Unit and the 2010 Skinner Memorial Award Committee Chair. He can be reached at:

jhightower@ncsu.edu

Membership Committee

As the American Fisheries Society Annual meeting is quickly approaching, the Membership Committee has been busy developing Education Section recruitment incentives. After Jesse Fischer did such a great job creating the Education Section's logo, we have joined forces with CustomInk T-shirts (www.customink.com), where members can custom design (choose your own color, shirt design, and more!) and order AFS Ed Section items. To order a shirt, click on "Retrieve Your Design", and use the email address:

EdSection@domain.com to bring up sample designs. Examples of t-shirts will be on display at the registration desk. The display shirts are going to be given away to a few lucky Education Section business meeting and social attendees - so be sure to attend! We also hope to lure in potential members by providing "freebies" that will remind conference attendees of the Education Section meeting and social. As always, we appreciate your feedback and additional ideas regarding recruitment of new members to the Education Section, so feel free to contact us at: Kristal Schneider (ewell002@umn.edu) and Mark Fincel (Mark.Fincel@sdstate.edu)



IMPORTANT EDUCATION SECTION EVENTS IN PITTSBURGH

Sept 12 (4:00-5:00)

Student Subsection
Business Meeting

Sept 12 (5:00 - 7:00)

Education Section
Business Meeting

Sept 13 (1:20 -5:00)

Best Student Paper
Presentations (Day 1)

Sept 13 (8:00-11:20)

Best Student Paper
Presentations (Day 2)

Sept 16 (8:40-11:40)

Student Colloquium

EDUCATION SECTION LISTSERVE

A listserv was recently created for the Education Section. All Education Section members have been automatically subscribed to the list.

To join the list or learn how to unsubscribe please visit:

<http://lists.fisheries.org/listinfo.cgi/education/fisheries.org>

Student Subsection Continues Productive Year

We here at the student subsection have had a productive past six months. One of the major highlights has been the launch of a completely revamped website in March (<http://www.fisheries.org/units/edustu/index.php>). The student reviewer database has been revived and updated with current student reviewers and we are in the process of getting this information to editors and associates for the AFS journals. We are also continuing to work on student issues at the society level and integrate student members.

The Student Subsection is very excited about the content and the all-star lineup of this year's Student Colloquium to be held at the annual meeting in Pittsburgh, PA. In line with the meeting's theme "Merging Deeper Currents" the objective of the colloquium will be to provide students and professionals in fisheries discussion of past examples, current needs, and future directions in the ever-changing realm of fisheries research and management. Specifically, the colloquium will present historical and philosophical overviews of fisheries as a science and then engage in regional (e.g., AFS division) examples of changes in fisheries management and research. This will be followed by an overall perspective regarding how current university curricula are aligned with the hiring needs of agencies. Finally, a presentation merging the ideas of the changing philosophies and the future of fisheries will close the colloquium.

The current schedule for the colloquium will be as follows:

Thursday September 16th 2010

8:40 AM - History of fisheries science - Dr. Christine Moffitt

9:00 AM - Philosophy of fisheries science - Fred Harris

9:20 AM - Northeastern Division perspective - John Arway

9:40 AM - Southern Division perspective - Fred Jansen

10:00 AM - Break

10:20 AM - North Central Division perspective - Joe Larscheid

10:40 AM - Western Division perspective - Dirk Miller

11:00 AM - Alignment of agency needs and curriculum - Don Gabelhouse Jr.

11:20 AM - Summary and future directions - Dr. David Willis

11:40 AM - Panel/Discussion

The Student Subsection would like to thank the AFS Education Section and North Central District for their financial support to make the colloquium possible. We look forward to seeing everybody in Pittsburgh and hope you will be able to attend the Student Colloquium.

Mike Colvin, Student Subsection President, mcolvin@iastate.edu





Was the Education Section's Support of Catfish 2010 Worthwhile?

Tom Kwak, Past President (tkwak@ncsu.edu)

Please recall that at the 2008 Education Section annual business meeting in Ottawa, the membership voted to financially support Catfish 2010: Conservation, Ecology, and Management of Catfish, the Second International Symposium that was held this summer, June 19-22, in St. Louis, Missouri. In addition to supporting fisheries science education in general, additional rationale for the support was that students in particular would participate in the Symposium, and that our contribution would assist with expenses to host it and publish the proceedings.

A review.

Despite tight budgets and travel restrictions, more than 200 fisheries professionals, students, vendors, and guests attended Catfish 2010, which was co-hosted by the Catfish Technical Committees of the North Central and Southern AFS Divisions. Don Jackson, Steve Quinn, Jon Armbruster, and Zeb Hogan initiated the Symposium with an informative and entertaining plenary session, that was followed by nearly 100 oral and poster presentations covering the breadth of catfish science. Contributors came from 32 states and 5 countries and represented more than 60 universities, agencies, and private organizations. Attendees included faculty and students from 27 universities and 21 registered students. Along with lively discussion, participants enjoyed St. Louis barbecue and a local fish fry (yep, catfish!) at the evening socials. With more than 65 manuscript submissions, the Symposium Proceedings should serve as a valuable reference (publication expected July 2011).

Some benefits.

In addition to supporting the dissemination of science, other benefits came from our sponsorship. First, the Section's influence led to a reduced registration rate for students attending the Symposium. The Section received two complimentary registrations as a sponsor, and we awarded those to deserving runners-up in the student travel award competition administered by the SD and NCD Catfish Technical Committees — Congrats to Rebecca Burch (IA State Univ and MS State Univ) and Steve Midway (Univ NC - Wilmington)! We will also receive two complimentary copies of the Symposium Proceedings once published. And finally, our sponsorship was acknowledged everywhere, including our logo in the program, on a large entry banner, on slides during the plenary session, on the Symposium web site (catfish2010.org), and in forthcoming reviews in *Fisheries* and *In-Fisherman* magazine, as well as the published proceedings.

Did we get our money's worth?

Inarguably, Catfish 2010 was a successful symposium, and our sponsorship helped make that possible. Was it Section funding well spent? Well, let's leave that call to you — the membership. It certainly is an appropriate conversation topic over a frosty beverage at our annual business meeting this year in Pittsburgh, or better yet, make your view known the next time we discuss and vote on supporting such activities in the future.



Students and professionals mix it up at the Poster and Trade Show Social at Catfish

Involving Students and Young Professionals in the AFS Peer Review Process

This is a short note to draw your attention to a recent paper where several AFS members discuss the merits of involving students and professionals in the peer review process. The paper was published in an online open-access journal (Ideas in Ecology and Evolution - IEE) so you can download the paper freely. In addition, IEE requests that referees provide a commentary after the paper is published so you can read additional material on the topic from Michael Hochberg (editor of the journal *Ecology Letters*). Although the paper is not specifically based around any AFS journals it is worth noting that AFS is somewhat proactive in this regard as the Student Subsection of the Education Section maintains a database of student referees. In addition, AFS editors and graduate advisors are known to seek the input of students and involve them in the peer review process. There is no doubt that we (the members of AFS and the Education Section) can do more by mentoring students through the peer review process and the paper by Donaldson et al. provides some ideas for doing so. Below is the abstract and link to the full paper.

Steven Cooke, Carleton University, Ottawa, Canada. (scooke@carleton.ca)

<http://library.queensu.ca/ojs/index.php/IEE/article/view/2346/2412>

Injecting youth into peer-review to increase its sustainability: a case study of ecology journals

Michael R Donaldson, Kyle C. Hanson, Caleb T. Hasler, Timothy D. Clark, Scott G. Hinch, Steven J. Cooke

Abstract

The 'tragedy of the reviewer commons', where the referee pool is being drained by an influx of manuscript submissions, is becoming an increasing problem for journals. To mitigate this growing concern, we suggest that there is a need to inject youth into the peer-review process. Graduate students, post-docs, and junior researchers are an important, yet often underutilized resource, for the peer-review process. A survey of leading ecology journals revealed that editors are generally receptive to increasing the involvement of junior referees in the peer-review process. Through 45 responses to the survey, no journal had specific policies regarding junior referees or maintained databases specifically identifying junior reviewers, and only 34% of respondents actively solicited junior referees. Despite this level of utilization, editors generally feel that junior referees have expertise in specific subject areas, are keen to review, and are willing to make time to provide a high-quality review, particularly when aided by their supervisors. Editors were significantly more likely to select junior referees with higher levels of education and experience (e.g., 90% of respondents were highly likely to select a post-doctoral researcher to conduct a review), although editors were willing to consider graduate students as well. Integrating and expanding on these survey results, we argue that injecting youth into peer-review benefits the process and provides invaluable experience and insight to junior scholars, all while helping to mitigate the problem of the tragedy of the reviewer commons.



Will Today's Students Meet Tomorrow's Needs? A Request for Collaborators in a Survey of Natural Resource Students

Are fisheries and wildlife programs at U.S. universities producing the quantity and quality of students needed to meet future needs of the professions? Numerous recent studies suggest that converging demographic and economic trends may affect the ability of universities to meet future needs of the professions. For example:

- A recent report by the U.S. Department of Commerce and the U.S. Department of Education (2008) identified an anticipated shortage of fisheries scientists qualified to conduct marine fisheries stock assessments in the next decade.
- McDonald et al. (2009:52) believed that "our profession may have finally moved into the long-anticipated and perhaps dreaded era in which incoming students must be assumed to have little experience with the physical tools of fieldwork, poor understanding of wildlife/habitat relationships and scant exposure to consumptive or nonconsumptive uses of wildlife (or their habitats)."
- Miller et al. (2009) pointed to trends of reducing budgets and decreasing credit hours required to obtain a bachelor's degree in wildlife as contributing factors in producing graduates who are ill-prepared for the practical challenges of a career in fisheries and wildlife.
- Stauffer and McMullin's (2009) survey of members of The Wildlife Society found that employers in state and federal agencies, nongovernmental organizations and the private sector felt that entry-level hires were not as well prepared as they should be in three critical areas of performance: written communication, oral communication, and working in teams.



Steve L. McMullin is an Associate Professor in the Department of Fisheries and Wildlife Sciences at Virginia Tech in Blacksburg, VA. He can be contacted at: smcmulli@vt.edu

The findings of these studies, combined with the projected retirements of nearly half of the fisheries and wildlife professionals currently working in state and federal agencies over the next several years (McMullin 2005, 2009), suggest that the professions may face a (not too distant) future personnel crisis.

One important aspect of the challenge facing educators in the fisheries and wildlife professions has not been quantified. We lack quantitative data on the backgrounds and numbers of students in university programs who want to pursue careers in the various sectors of the professions. That brings me to the purpose of this article: I am seeking collaborators in an effort to survey students in introductory fisheries and wildlife courses at universities across the country to assess the backgrounds, attitudes regarding resource conservation, and career interests of students coming into fisheries and wildlife programs. The objective of the survey is to determine if the trend noted anecdotally by several educators I have spoken with of decreasing numbers of students entering fisheries and wildlife programs with the intention of making a career in state and federal natural resource agencies is actually occurring and, if so, is it a nationwide trend or is it specific to a few programs.

For example, in a survey of students in our introductory fisheries and wildlife class at Virginia Tech, only 33% of fisheries students and 28% of wildlife students indicated that working for a state or federal agency was their first choice of a career. If the students at Virginia Tech are similar to those at other universities, the agencies that have traditionally employed a large portion of the graduates of fisheries and wildlife programs may face a shortage of candidates for the positions vacated by retiring Baby Boomers, even as many university programs experience rising enrollments.

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Request for Collaborators: Survey of Natural Resource Students (Cont)

The survey at Virginia Tech will be conducted annually of the students in our Principles of Fisheries and Wildlife course, the introductory course required of all fisheries and wildlife majors (and also taken by many other students as one of the university's core Curriculum for a Liberal Education courses). Our on-line survey is similar to, and builds upon, a similar survey used at South Dakota State University for several years. Topics addressed by the survey include:

- Participation in a wide range of outdoor activities, (e.g., hunting, fishing, trapping, wildlife watching, hiking, camping, boating, biking, and horseback riding)
- Philosophies of resource use and conservation (e.g., utilitarian, protectionist)
- Attitudes toward hunting, fishing and trapping
- Factors that influenced the student to choose a major in natural resources
- Student's desired career track (e.g., agency, NGO, private sector, self-employment)
- Demographic characteristics (e.g., gender, rural-urban-suburban home setting)

Faculty members at South Dakota State University, University of Missouri, University of Georgia, North Carolina State University, Oregon State University, Mississippi State University, and Colorado State University (in addition to Virginia Tech) already have expressed interest in collaborating in the survey. I welcome collaborators from all institutions that have fisheries and wildlife programs. The on-line survey can easily be customized to assess specific aspects of your program while still collecting information that is useful at a broader scale.

If you would like to participate in this collaborative effort, please contact the author (Steve McMullin) at:
Phone: (540) 231-8847 or Email: smcmulli@vt.edu

Collaborators will have access to all data from their own institution (with while ensuring confidentiality of participants) and summaries of information from all institutions. Collaborators also will have the opportunity to contribute to and co-author publications that result from the effort.

Literature Cited

- McDonald, J. E., Jr. 2009. The changing face of university wildlife programs. Transactions of the North American Wildlife and Natural Resources Conference 74:48-53.
- McMullin, S. L. 2005. Baby Boomers and leadership in state fish and wildlife agencies: a changing of the guard approaches. Transactions of the North American Wildlife and Natural Resources Conference 70:27-37.
- McMullin, S. L. 2009. Employee mobility in the National Wildlife Refuge System: a survey of employees. Report prepared for the U.S. Fish and Wildlife Service. Arlington, VA. 52p.
- Miller, D. A., J. W. Edwards, B. D. Leopold, and G. H. Moody. 2009. Foraging theory or food plots? Theory versus practice in university curricula. Transactions of the North American Wildlife and Natural Resources Conference 74:69-74.
- Stauffer, D. F. and S. L. McMullin. 2009. Desired competencies and perceived proficiencies of entry-level fisheries and wildlife professionals: a survey of employers and educators. Transactions of the North American Wildlife and Natural Resources Conference 74:62-68.
- U.S. Dept. of Commerce and U.S. Dept. of Education. 2008. The shortage in the number of Individuals with post-baccalaureate degrees in subjects related to fishery science. NOAA Tech. Memo. NMFS-F/SPO-91, 84 p.



Fisheries Textbooks: Announcements and Updates

New Textbooks for Fisheries (Published by AFS and Available September 2010)

Case Studies in Fisheries Conservation and Management: Applied Critical Thinking and Problem Solving

Brian R. Murphy, David W. Willis, Michelle D. Klopfer, and Brian D.S. Graeb

Through more than 30 original case studies related to contemporary conservation and management issues in fisheries, the authors of this new book challenge students to develop critical-thinking and problem-solving skills that will serve them as future natural resource professionals. This compact book will function well as supplemental text, or as a stand-alone text for seminars or other courses designed around active learning.

Intended for the instructor who wants to challenge students to go beyond the "information" level of many science texts, these case studies have no "right answers." Many of the cases are presented in a dilemma format, where students are asked to assess information from a variety of sources, find additional information as needed, and propose and evaluate alternative solutions. Cases are approached from a variety of dimensions (biological, ecological, political, cultural, and socioeconomic) and stakeholder perspectives. Spiral binding allows the student and instructor versions to lie flat for easy reference during classroom discussions and activities.

230 pp. est, paper, 2010; ISBN-13 : 978-1-934874-18-9 List price: \$50; AFS member price: \$35

Instructor's Guide to Case Studies in Fisheries Conservation and Management: Applied Critical Thinking and Problem Solving

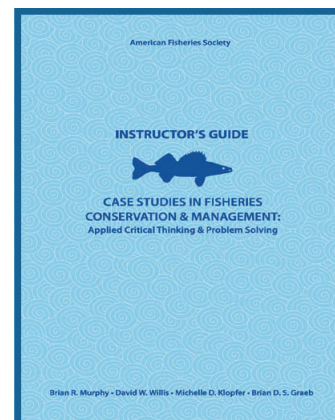
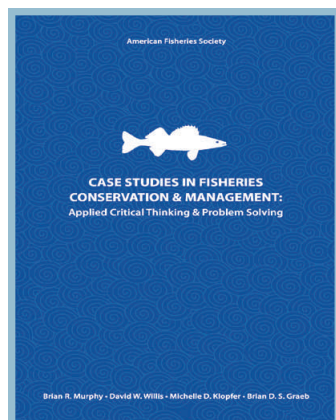
Brian R. Murphy, David W. Willis, Michelle D. Klopfer, and Brian D.S. Graeb

The companion Instructor's Guide pairs each full case with a detailed set of teaching notes that cover suggested lesson plans, supplemental reference materials, and a companion CD containing case-linked PowerPoints that include all tables and digital figures from the cases.

500 pp. est, paper, 2010; ISBN-13 : 978-1-934874-19-6 List price: \$79; AFS member price: \$55

Read the Introductory Chapters to both books here: <http://www.fw.vt.edu/fisheries/faculty/murphy/casestudiesbook>

**All profits from these books will go to the John E. Skinner Memorial Fund,
which supports student travel to the AFS Annual Meetings**



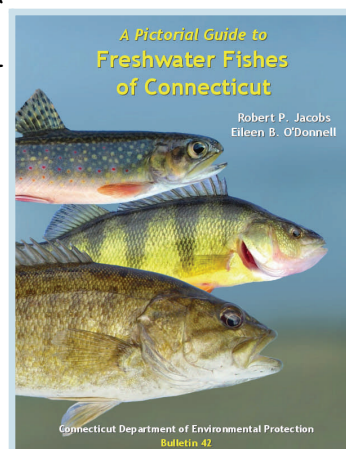
Fisheries Textbooks: Announcements and Updates

Inland Fisheries Management in North America 3rd Edition

The 3rd edition of *Inland Fisheries Management in North America* edited by Wayne Hubert and Michael Quist is about to be published. Page proofs have been prepared and reviewed for all 21 chapters. The editors are completing the last of their edits and putting the final touches on the book. The book is on schedule for publication prior to the 2010 AFS meeting in Pittsburgh in September. This edition was developed by fisheries scientists associated with the American Fisheries Society, particularly the Education and Fisheries Management sections, with the intent of providing information on the past and emerging conceptual basis and evolving practices for managing freshwater fisheries in North America. It is a text for use in introductory university courses for juniors, seniors, or graduate students with a general foundation in ecology, limnology, ichthyology, and college-level mathematics. The book is written as an educational tool, not a reference work. Nonetheless, recent advances in fisheries management make this a valuable reference for practicing fisheries professionals.

Connecticut Department of Environmental Protection Announces New Publication: "A Pictorial Guide to Freshwater Fishes of Connecticut"

The Connecticut Department of Environmental Protection (DEP) is proud to announce a new publication; "A Pictorial Guide to Freshwater Fishes of Connecticut". Written by DEP biologists Robert P. Jacobs and Eileen B. O'Donnell, "A Pictorial Guide to Freshwater Fishes of Connecticut" is the first publication to present multiple, high resolution, full-color photos of most New England and all Connecticut freshwater fish species, including all anadromous species and occasional visitors from salt water. The typical field guide format illustrates only one photo per animal which cannot express the variation in form and color that is common among fish species. This guide presents an assortment of large, color photos for most species that show what a fish looks like "in the hand" and reflect the diversity of form and color found in the environment. In addition, aquarium shots are presented for some species because colors and patterns look different underwater. Also included are photos of juvenile fish, which can look very different from adults of the same species.



This hybrid field guide/coffee table book simplifies the process of fish identification for beginners. Included is an easy-to-see graphic, "Guide to Families of Connecticut Freshwater Fishes." Readers can easily find the correct family on the graphic, which will direct them to a section of the book with photographs where they can narrow down the field and make identification easy and fun. For those more scientifically inclined, the book also contains a standard taxonomic key to fish families and species.

Besides the photos, detailed information is presented for each species on identification, distribution, size, abundance, habits, how to observe and catch them, and what's unique about them. It also includes special sections on how to catch and observe fish in nature, including tips on angling and snorkeling and how to keep freshwater fish in aquariums.

The book is dedicated to the late Walter R. Whitworth, who wrote the definitive work on Connecticut fishes, "Freshwater Fishes of Connecticut" which was first published in 1968 with a 2nd edition in 1996. The new book is not designed to replace this publication, but to act as an update, supplement and companion to his work.

This guide and other environmental books and gifts are available at the Connecticut DEP bookstore. Orders may be placed by calling (860) 424-3555 or visiting www.ctdepstore.com



Fisheries Textbooks: Announcements and Updates

Two Fish Biologists Write a General Conservation Text

Protecting life on Earth: an introduction to conservation science by Michael Marchetti and Peter Moyle has just been published by University of California Press (Paperback, 232 pages, ISBN: 9780520264328, \$49.95). This book was written for introductory courses for non-majors, especially non-science students, so it is short, easy to read, with lots of illustrations. It also emphasizes vertebrates, reflecting both the interests of the authors and the need to capture student interests using charismatic species (mostly) as examples. The book starts with environmental history, showing how we got where we are today, then moves on to basic evolution and ecology. Following chapters deal with such topics as extinction, climate change, sustainability, conservation law, economics, and invasive species. It ends with a chapter on what the readers can do to make things better.

The book is based on essays that were first written in the 1980s, initially by graduate students in a textbook writing class I taught at University of California, Davis. The essays were written specifically for my freshman-level course in wildlife ecology and conservation. Over the years, they evolved along with the course, through many revisions by myself and occasionally other faculty. Michael Marchetti first encountered the essays as a teaching assistant in the course and then began using them for his own course as a faculty member at California State University Chico. After using the essays for a few years, he decided that he wanted to completely revise the text and seek formal publication of it. The result is a book with perhaps more fish examples than most conservation texts but also wide coverage of the field.

Our students we had in mind for the text are both those already with an interest in conservation, if unformed, and those liberal arts students who take our classes for an 'easy' science credit. For the latter students we try to both challenge them and create interest where it was lacking before. Sometimes this even works. Of course, the text is just one part of our courses, which include self-guided field trips, illustrated and interactive lectures, guest lectures, and lots of writing.

Although available initially as a paperback, the text should also be available fairly soon on-line from the press, for a lower price. We hope this will increase flexibility in use of the chapters.

To obtain examination copies for potential use in a course, go to the University of California Press website. The authors can be contacted at Peter Moyle (pbmoyle@ucdavis.edu) and Michael Marchetti (mmarchetti@csuchico.edu).



Graduate Student Works to Preserve Lake Sturgeon



Kelly Sparks, M.S. Student at the University of New Brunswick in Canada, holds a captured Numao lake sturgeon from Numao Lake. Kelly can be contacted at: k.sparks@unb.ca

I have been a member of AFS for five years and am in my final year of graduate studies at the University of New Brunswick in Canada. I am currently studying lake sturgeon ecology on the Winnipeg River in Manitoba, specifically dealing with the subadult life phase. My ongoing passion for sturgeon began with the pallid and shovelnose sturgeon on the Mississippi River while working for the Missouri Department of Conservation. Moving to Oregon to explore the west, I was fortunate enough to work on a collaborative project with the Oregon Department of Fish and Wildlife, on the Rogue River, to assess the local population of green and white sturgeon. I was then offered the opportunity to further my education in New Brunswick and happily jumped on board for this new adventure.

My education is being funded by Manitoba Hydro and it has been a wonderful experience to work with a hydroelectric company that is concerned with their local fish populations. We currently have a gap in the data set for subadult lake sturgeon, which I am classifying as the time when sturgeon leave the nursery areas until they become sexually reproductive adults. This additional data will help with mitigation

projects for the future as well as existing management practices. The 41 km research area is impounded by Slave Falls Generating Station upstream and Seven Sisters Generating Station downstream. The upstream portion of the impoundment contains high densities of juvenile lake sturgeon that are showing a very slow growth rate, with the more downstream areas containing much lower densities that are growing at much higher rates, showing an opposite relationship between the former and growth (Barth *et al.*, 2009). Adult lake sturgeon also appear to favor the upstream half of the impoundment; however, fish appear to be less gregarious than juveniles, with aggregations only occurring during the spring spawn and in late fall. Interestingly, a long term netting program carried out by resource managers suggests that adult numbers are relatively low.

With the 2006 listing of lake sturgeon as endangered in the Winnipeg River-English River, under the Manitoba Endangered Species Act (COSEWIC 2009), it is clear that a recovery strategy is required, and it is evident that further research is needed to aid in developing a conservation plan and restoration strategies for the future of the lake sturgeon. One of my key objectives and the main focus is to collect data on subadult age/length that will allow information on abundance to determine if a recruitment bottleneck is occurring at this phase, and also to fill behavioural and ecological knowledge gaps for subadult lake sturgeon. Helping these prehistoric fish has been an amazing journey and watching their continuing story unfold has been a monumental experience in my life. I am excited to see how the ending will unfold...



Numao Lake on the Winnipeg River. This lake produces the highest density of sturgeon showing the slowest growth rates in the system.

Barth, C.C., Peake, S.J., Allen P.J., and W.G. Anderson. 2009. Habitat utilization of juvenile lake sturgeon, *Acipenser fulvescens*, in a large Canadian river. *Journal of Applied Ichthyology* 25 (2): 18-26.

COSEWIC 2009. COSEWIC assessment and update status report on the lake sturgeon *Acipenser fulvescens* in Canada. Committee on the status of endangered wildlife in Canada. Ottawa. xi + 107 pp. (www.sararegistry.gc.ca/status/status_e.cfm).



Young Minds and Slimy Fish



Maria Dzul, M.S. student at Iowa State university, talks to 4th graders about “slimy fish” as part of the Death Valley F.I.S.H.E.S. program.

“The fish is slimy!” one 4th grade student exclaimed. This remark was followed by uproarious laughter from the other five students. As it was my duty to teach the students how to measure the fish, these moments that I had found initially amusing became increasingly frustrating. It was difficult to keep the students focused. Handling a fish was a novel experience for most; students seemed simultaneously intrigued and disgusted by the flopping, slimy fish. Most of the students had gasped the first time I took a fish out of the water and held it in my palm. “Put it back! It’s going to die!!!” they had shrieked.

I had ventured to Death Valley in spring 2010 to study movement patterns of the Salt Creek pupfish, a small-bodied fish endemic to Salt Creek located on the floor of Death Valley. I had spent countless hours marking fish with visual implant elastomer tags in different habitats along the creek, and more countless hours searching for recaptured fish to assess their movement. As part of my project, I agreed to participate in the Death Valley

F.I.S.H.E.S. (Fisheries Investigations for Students through Hands-on Environmental Science) program, an environmental education program which was part of Death Valley R.O.C.K.S. (Recreation Outdoors Curriculum for Kids though Study). Death Valley R.O.C.K.S. is an environmental education program funded and organized by the National Park Service, Death Valley Natural History Association, the National Park Foundation, and other partners. The R.O.C.K.S. program brings students from urban southern California into Death Valley National Park for three days of camping and exploration. The F.I.S.H.E.S. program was composed of four stations: a fish measuring station, an aquatic invertebrate station, a water chemistry station, and a game station. I was put in charge of the fish measuring station; as such, I taught students how to measure length, identify gender, and search for tags on Salt Creek pupfish. The data collected by students was used to study Salt Creek pupfish movement patterns. In total, the F.I.S.H.E.S. program taught 244 students from 7 different schools in grades 4 -12 about the ecology of Salt Creek.

Regardless of whether the students understood the implications of the movement study, I found great value in providing students with hands-on experience. Even the most seemingly inattentive students became enthusiastic when it was their turn to handle fish. Many students approached me after the program and thanked me for the experience. Working with elementary and high school students is very gratifying, and I encourage other AFS members to seek out opportunities in environmental education.



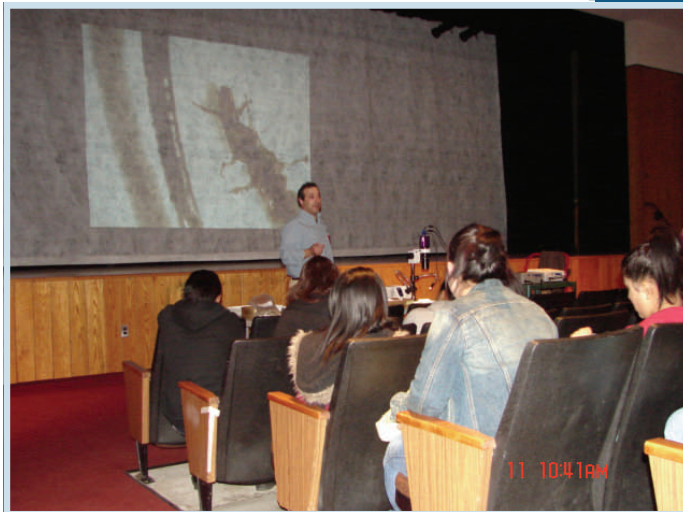
Young students enthusiastically poke at fish while learning about fish, invertebrates, and water chemistry in the Death valley R.O.C.K.S. environmental education program

Macroinvertebrates Used to Teach High School Students About Nearby Lake

Some of you may remember reading about the following project in the January 2010 newsletter, so here is news about the outcome. The project was titled 'Aquatic Macroinvertebrates as a Tool for educating Area High School Students about Onondaga Lake' and it was initiated with the support of my organization, the Upstate Freshwater Institute and a grant from the Onondaga Lake Partnership.

I visited all of the Syracuse (NY) City High Schools as well as LaFayette High School (a more rural district, but still in the same watershed) with buckets of live macroinvertebrates and microscope in hand. Overall, I presented to over 250 high school students (final tally pending) in grades 9-12. As with any audience the response was varied but overwhelmingly positive. While most students enjoyed the PowerPoint presentation that gave the background information about Onondaga Lake the highlight of the presentation by far were the microscopic images of the living aquatic insects projected on the large screen. With this setup we could observe key anatomical features such as gills and mouthparts. All of the teachers that participated in the program were very enthusiastic and plans are underway to continue the program in 2010. One of the major features of the program was a field trip to the lake (transportation which was paid for with grant money) by participating teachers for the students to get a hands-on opportunity to see and do some of the things talked about in the classroom. Volunteers from the State University of New York College of Environmental Science and Forestry, and Onondaga-Cortland-Madison County BOCES New Visions Program helped make the field trip to Onondaga Lake a success. See coverage of the event at:

http://videos.syracuse.com/post-standard/2010/05/onondaga_lake_fieldtrip.html



Michael Spada, a Research Scientist from the Upstate Freshwater Institute in Syracuse, NY, teaches Syracuse City High School students about some of the cool critters found in nearby Onondaga Lake. He can be reached at:
mespada@upstatefreshwater.org



2010 WDAFS Student Colloquium



The Palouse student subunit of the American Fisheries Society at the University of Idaho is proud to host the 3rd Annual Western Division of the American Fisheries Society Student Colloquium from Thursday, October 14th to Saturday, October 16th. Moscow, ID will be the site of research presentations, an insightful field trip, and networking in an all-student environment.

Thursday, October 14th: Welcome Social featuring food and drinks at the 1912 Center in Moscow, ID, from 6-9 pm. Professionals will be invited to enhance your networking opportunities.

Friday, October 15th: A full day jet boat tour of Hell's Canyon. Transportation, breakfast and lunch will be covered.

Saturday, October 16th: Student only oral presentations at the University of Idaho followed by a tour of the campus aquaculture facilities. A business lunch will be provided. Closing social will be held from 6-9 p.m. at EcoAnalysts, Inc. and will include food and beverages.

Sunday, October 17th (Optional): Opportunity to fly fish for Steelhead. You will need to bring your own gear and purchase an Idaho fishing license. Our experts can take you to some of the best fishing spots in the area. For more details, contact Tim Caldwell (cald3105@vandals.uidaho.edu)

Registration: To register, please email Jeff Reader (read5459@vandals.uidaho.edu) the following information: Name, phone number, AFS/School affiliation, when you will be arriving and departing, and whether you are presenting.

Cost: \$35/student before Friday, September 24h, and \$45/person after September 25th.

Presentations: If you are presenting (everyone is encouraged to present!), please submit a 200 word abstract by Friday, October 2nd to Amy Long (long8524@vandals.uidaho.edu). Abstract formatting guidelines are posted on our website.

We look forward to seeing everyone in Moscow!

--University of Idaho Palouse student subunit of AFS

Questions? Contact Kelly Stockton at stoc4872@vandals.uidaho.edu or at 970-217-2245

Visit PUAFS online at <http://www.cnr.uidaho.edu/afs/>



EDITOR'S NOTE

Love it? Hate it? Please contact us and let us know how we are doing and offer any suggestions to improve upcoming issues. Future articles, comments, and suggestions can be emailed to either of us at any time.

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