



## ***President's Message***

Greetings from Vermont! As we wind down the summer, the AFS parent meeting is fast approaching. This year's meeting in Minnesota's twin cities will be held 19-23 August. During the annual business meeting in Minnesota, the current President, Dr. William Fisher, will become Past-President while Dr. John Boreman will assume the President's responsibilities. Both of these distinguished members have ties to the Northeastern Division.

At this meeting, the NED officers will also change with Mr. Randy Jackson (NY) becoming president, Mr. James Armstrong (DE) assuming President-Elect responsibilities, and Dr. John Cooper (NY) moving into the Vice-President position. Mr. Chris Millard (MD) will become Secretary-Treasurer.

The new NED Executive Committee has exciting and challenging times ahead in steering the Division into the future. Our 68<sup>th</sup> Annual meeting in West Virginia in April 2012 was not well attended and besides being outside of the geographic area, I think it portends of things to come. With the GSA conference scandals hitting the news this past spring combined with local, state and federal budget shortfall reported by the news media, employer funding support for professional development of our members to attend AFS functions will be seriously scrutinized. Attracting members will require NED and all of AFS to develop programs that will be recognized by management as beneficial for our members and the fisheries profession as a whole.

At the 68<sup>th</sup> annual meeting we recognized the significant contributions of our NED members. The 2012 Webster Award was presented to Mr. Thomas Hoff for his contributions to fisheries. In addition, we also presented the 2011 Webster Award at a special ceremony to Dr. Steve A. Murwaski. More information on these presentations can be found inside the newsletter.

This year the 'walking stick' which is presented every three years to the longest serving NED member was awarded at the 2012 NED annual business meeting. The new recipient of this award was Mr. Thomas Dolan III and plans will be developed to present the walking stick at a special function.

The NED has been contacted by the AFS parent society to explore an agreement between the NED (and AIC chapter) and AFS to support the 2014 AFS annual meeting to be held in Quebec City. The NED EXCOM has voted to explore developing a Memorandum of Understanding (MOU) with AFS which will hit high gear in the next several months. This is an exciting time for us as members of the Division and a great opportunity to get involved with AFS meeting. Step up and support your Society- there will be plenty of areas where you can volunteer!

The AFS Management Committee and Governing Board will be meeting in Minnesota with several challenges to discuss. Affiliate membership and the size of the Governing Board will be the focus of many discussions. The governance of the AFS

parent will be the main topic of the Governing Board retreat at the meeting on Saturday.

As my term of President comes to a close at the Minnesota meeting, I would like to thank you for allowing me the opportunity to serve the Division and Society. It was an enlightening time and I learned a lot about how the organization functions. I probably was educated more in the last year or two about AFS, than I learned from the time I first joined AFS in 1974 to the time becoming active in the Division. It has been a great honor to have served and I wish the new NED EXCOM well in addressing the challenges and opportunities for the Division.

Phil Downey  
President, Northeastern Division, AFS  
[pdowney@aquatecb.com](mailto:pdowney@aquatecb.com)



***In this issue:***

***Upcoming Meetings.....3***

***Notices and Announcements.....5***

***Chapter and Subunit Updates.....10***

***Research Round Up.....15***

***Fisheries in the News.....19***

***Publications.....22***

***Division Leader Contact List.....23***



Gavle Zydlewski Lab. UMaine

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## ***\*Upcoming Meetings & Workshops\****

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### **The Diadromous Species Restoration Research Network**

#### **January 9, 2013 Adaptive Management Workshop**

*“Using Adaptive Management to Restore the Diadromous Fish Community in Northeastern North America.”*

#### **January 10-11, 2013 DSRRN Science Meeting**

*“Diadromous Species Restoration Science 2013: Migration, Habitat, Species Interactions, and Management”*

**University of Maine, Orono, Maine**

***Registration and poster session abstract submissions will open in October!***

The 2013 DSRRN workshop and science meeting will provide an opportunity for managers, biologists, ecologists, geologists, hydrogeologists, and conservation planners to gain insights into overlaps in their varied approaches to a common goal and leave with newly forged collaborations and an informed view of the future of diadromous fish restoration science. A one-day workshop (January 9) on the principles of adaptive management and structured decision-making will precede the meeting, updating attendees on the current state of this approach to fishery management. In the science meeting that follows (January 10-11), plenary speakers will summarize recent work in diadromous species resilience, natural variability in population metrics, and the Penobscot River Restoration Project. Three non-overlapping scientific sessions covering multi-species interactions, movement and migration, and freshwater habitat will feature short research talks and interactive discussions focused on linking research, management, and future research directions.

**The Diadromous Species Restoration Research Network (DSRRN)** is a 5 year, NSF-funded Research Collaboration Network (RCN) project that has worked since 2008 to:

- provide multi-species, watershed-scale contexts for agencies, non-governmental organization partners, and researchers conducting diadromous fish research;
- facilitate interactions among key stakeholders in identifying realistic restoration goals for diadromous fish populations;
- facilitate adaptive exchange so that scientific hypotheses, research plans, and synthetic analyses are informed by science and management needs; and
- produce new directions for restoration science by exploring key scientific ideas and interdisciplinary approaches to diadromous species restoration.

**For more information about DSRRN and diadromous species research, visit**

**<http://www.umaine.edu/searunfish/>**



## 2013 Northeast Fish and Wildlife Conference

Saratoga Springs, NY April 7-9 at the Saratoga Hilton

<http://www.thesaratogahotel.com>

Possible workshops on American eels and wild trout.

Contact Chris VanMaaren [\(315\) 785-2268](tel:3157852268)  
[ccvanmaa@gw.dec.state.ny.us](mailto:ccvanmaa@gw.dec.state.ny.us)



### **The 13<sup>th</sup> Flatfish Biology Conference:**

December 4-5, 2012

*Water's Edge Resort & Spa,  
Westbrook CT*

The Thirteenth Flatfish Biology Conference will be held on December 4 and 5 at the Water's Edge Resort in Westbrook, CT. The conference allows professionals and students to make oral and poster presentations on all aspects of their research on flatfish biology and ecology from any region. For more information please visit the conference website at <http://mi.nefsc.noaa.gov/flatfishbiologyworkshop> or contact [renee.mercaldo-allen@noaa.gov](mailto:renee.mercaldo-allen@noaa.gov). The conference is sponsored by the NOAA Northeast Fisheries Science Center, Southern New England Chapter of AFS, and Dominio

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## ***\*Notices and Announcements\****

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### **RARGOM Annual Science Meeting**



October 9, 2012

Portsmouth, New Hampshire

#### **Pre-First Call for Abstracts**

(formal call with registration information soon to follow)

The Regional Association for Research on the Gulf of Maine (RARGOM) is holding its annual science, the theme of the meeting is: *Will the Gulf of Maine yield more or less seafood in the future, ideas from the physical environment and lower trophic levels?*

The 2012 RARGOM Annual Science Meeting will be a session where Gulf of Maine physical and biological oceanographers will be asked to interpret what they are seeing among the varied signals of physical forcing and lower trophic level response, and challenged to inform the community on how upper trophic level organisms have responded and may react in the future.

*The one day meeting will feature three keynote speakers:*

**William Cheung**

*University of British Columbia Fisheries Centre*

#### **Shrinking of Fishes Exacerbates Impacts of Global Ocean Changes on Marine Fisheries**

Both theory and empirical observations suggest that warming and reduced oxygen will reduce maximum body size of marine fishes and invertebrates. However, the extent to which such changes would exacerbate the impacts of climate and ocean changes on global fisheries remains unexplored. Here, using models that integrate ocean biogeochemistry and biological responses to environmental changes, I suggest that warming and ocean deoxygenation are expected to lead to decreases in maximum body size and changes in other life history characteristics of exploited fishes at both individual and community levels. Changes in body size interact with expected changes in species distribution and ocean productivity, exacerbating the effects of climate change on fisheries resources. These highlight the need to consider body size changes in assessing and managing climate change impacts on fisheries.

**Jon Hare**

*Northeast Fisheries Science Center, National  
Oceanographic and Atmospheric Administration*

### **Pursuing Hypotheses and the Future of Fisheries Oceanography**

Fisheries oceanography is largely an applied discipline with a major goal of improving fisheries management and marine conservation. Hjort's critical period hypothesis, and its decedents, remain a dominant theme and focuses on early life stage survival as mediated by prey availability and feeding. A second hypothesis focuses on the sequential transfer of energy from primary productivity to fishery productivity. Three recent hypotheses challenge these traditional bottom-up hypotheses: predation of early life stages, maternal condition, and shifting migration pathways. Regional support for these hypotheses will be reviewed and their implications to fisheries management and marine conservation will be described. It is important that these recent hypotheses continued to be pursued and tested. The results must then be integrated into current and future assessments and management decisions.

**Andy Pershing**

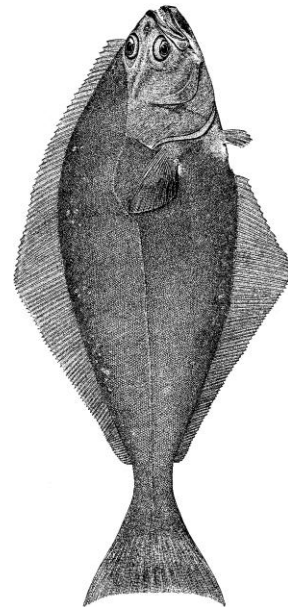
*University of Maine School of Marine Sciences  
and the Gulf of Maine Research Institute*

### **Using Climate Variability to Diagnose How Marine Ecosystems Work and How They Will Change**

Ecological experiments are notoriously difficult to perform on planktonic communities due to the large scale and open nature of the ocean. However, climate variability alters the physical environment on scales large enough to affect multiple ecosystems simultaneously. By comparing how similar ecosystems respond to similar

forcing, we can begin to diagnose how physical and biological processes interact to structure these systems. Relationships between plankton community changes and stratification provide a clear indication of how these communities will respond to a warmer and fresher North Atlantic.

If interested in presenting a contributed talk or poster for this important session, please prepare an abstract. Further announcements regarding abstract submission and registration will be forthcoming and posted on the RARGOM website at <http://www.rargom.org/>.



*The Atlantic Halibut, from Goode 1884*



## **The 2011 Webster Award Presented to Dr. Steve Murwaski During a Special Ceremony**



*Left to right Paul Perra, Steve Murawski, and Ron Essig*

Dr. Steve A. Murwaski was presented the Northeastern Division Dwight E. Webster Award by Division Past Presidents Ron Essig and Paul Perra. The Dwight A. Webster Memorial Award is the most prestigious award given by the Northeastern Division of the American Fisheries Society.

It was awarded to Steve in 2011, and presented to him in May, 2012, in Gloucester, Massachusetts. Steve was awarded the Webster Award for: Lifelong contributions to fisheries science and the profession in the Northeast, meritorious/prestigious service to the profession and fisheries; and significant academic and technical accomplishments. Steve spent the majority of his career at the National Marine Fisheries Service (NMFS) Northeast Fisheries Science Center in Woods Hole, MA., where he excelled as a stock assessment scientist, an innovative and dynamic researcher, and a gifted manager.

Following his service in Woods Hole, he was promoted to the NMFS top scientific position at NMFS Headquarters in Silver Spring, MD as Director of all NMFS scientific programs. Steve has demonstrated outstanding leadership and management of science programs supporting the abundance of regulated fisheries, marine mammals, sea

turtles and the quality of coastal and marine habitats that support them during his 33-year career with the NMFS. As the Director, Scientific Programs and Chief Science Advisor for the agency, he significantly improved the credibility, utility and responsiveness of science products supporting critical ocean resource management decisions, and implemented exacting standards for the conduct, completion and peer review of all science products. He is a specialist in marine fisheries population dynamics and ecosystem modeling, is one of the most influential leaders in the world on the development of science supporting fisheries and protected species management. He has published over 150 scientific papers, served on a number of White House committees on oceans and ecosystems, and was the United States representative to the International Council for the Exploration of the Sea – a 20 nation marine science organization in the North Atlantic. Steve recently retired from NMFS, and is currently Research Professor and Downtown Progress Betzer Endowed Chair, College of Marine Science, University of South Florida.



*Gayle Zydlewski Lab, UMaine*

**2012 Webster Award**  
**Award Presented to Thomas B. Hoff**  
**During the Annual Northeastern Division**  
**Business Meeting**  
**Charleston, West Virginia**  
**April 18, 2012**

The Dwight A. Webster Memorial Award is the most prestigious Award given by the Northeastern Division of the American Fisheries Society. It may be awarded for any of the following achievements:

- Lifelong contributions to fisheries science and the profession in the Northeast or while working in the Northeast;
- Meritorious/prestigious service to the profession and fisheries;
- Significant academic or technical accomplishments; and,
- Long-term service in the Northeastern Division as an AFS member.

The 2012's honoree, Thomas B. Hoff has made significant contributions in three of these areas, and here are just a few examples.

Dr. Thomas Hoff has been active in leadership and committees in the New York, Pennsylvania, and Mid-Atlantic Chapters. He has B.S. (Zoology) and M.S. (Ecology) from Pennsylvania State University and a Ph.D. (Marine Studies) from the University of Delaware.

Tom has worked for the Mid-Atlantic Fisheries Council for nearly 30 years. He has been responsible for or worked on all of the Council's Fishery Management Plans (Atlantic mackerel, Squid, and Butterfish; Bluefish; Spiny Dogfish; Summer Flounder, Scup, and Black Sea Bass; Surfclam, Ocean Quahog; Tilefish; and Monkfish) and has

been the lead for the Council's habitat and ecosystem efforts for at least the past ten years. Prior to working for the Council he spent six years with two environmental consulting firms conducting fisheries work on the Hudson River. Over the almost 30 years he has been with the Council, he has had an impressive career where he used his knowledge of fisheries science, and, to the great benefit to the Council, his excellent ability to successfully apply fisheries science to the fisheries management process. He led the efforts to formulate the first ground breaking Federal fisheries individual transferable quota system in the country, and at numerous points in his career at the Council, his input has been 'key' in helping the Council maintain or rebuild many important fish stocks.

We currently have many stable and profitable fish stocks along the United States Mid-Atlantic Coast supporting multi-million dollar fisheries, and providing other social benefits to our coastal states. This was not always the case. Tom has played an important role in changing the nature of how we view and manage our Mid-Atlantic fisheries, and in providing an umbrella of rational fisheries management that should sustain them into the future.





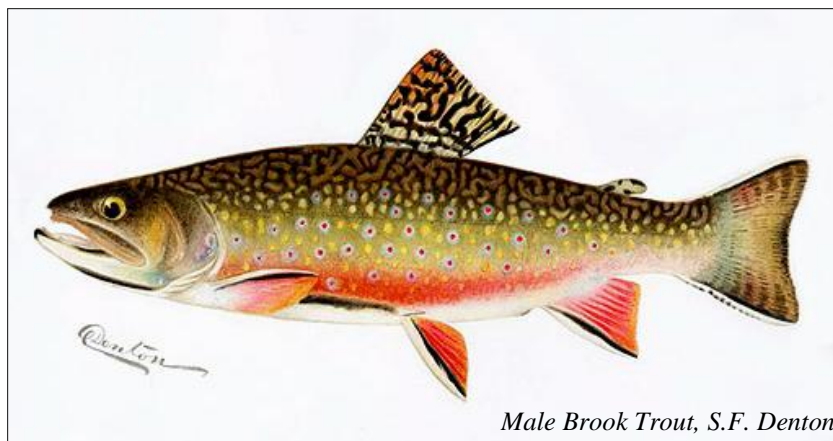
# Aquaculture Drug Update: From USFWS and FDA

**Authorization Granted for the Immediate Release of Fish Sedated with AQUI-S®20E under INAD 11-741:** Based on a recent request, the U.S. Food and Drug Administration (FDA) has granted amended authorization for the use of AQUI-S®20E, a sedative drug, to allow for the immediate release of freshwater finfish sedated as part of field-based fisheries management activities. The amended authorization comes under the U.S. Fish and Wildlife Service's Aquatic Animal Drug Approval Partnership (USFWS-AADAP) Investigational New Animal Drug (INAD) 11-741. Prior to the amended INAD authorization, all freshwater fish sedated with AQUI-S®20E were required to be held for 72 hours—a withdrawal period impractical for field use. The immediate-release provision is for field use only; the withdrawal period remains at 72 hours for hatchery use.

FDA approval of an immediate-release sedative for use in fisheries management has been a high priority for the Association of

Fish and Wildlife Agencies (AFWA), whose ongoing activities are coordinated by its Fisheries and Water Resources Policy (FWRP) Committee's Drug Approval Working Group. "This amended INAD authorization represents an enormous leap forward in our ability to effectively and safely sedate fish as part of field-based fishery management activities; activities that state and federal agencies and their partners use to restore, recover, protect, and manage fish populations that are important to the 48 million recreational anglers in the U.S., as well as to many others who depend on fish for sustenance and commerce," said Virgil Moore, Idaho Department of Fish and Game Director and chair of AFWA's FWRP Committee.

For more information about aquatic animal drugs, AQUI-S®20E, or to sign-up to participate in USFWS-AADAP INAD 11-741, go to <http://www.fws.gov/fisheries/aadap/home.htm> or contact the USFWS-AADAP INAD Administrator, Bonnie Johnson, at [Bonnie\\_Johnson@fws.gov](mailto:Bonnie_Johnson@fws.gov) (406-994-9905). For further information, please see full AFWA press release at [http://www.fishwildlife.org/index.php?section=afwa\\_press\\_releases&prrid=180](http://www.fishwildlife.org/index.php?section=afwa_press_releases&prrid=180)



*Male Brook Trout, S.F. Denton*

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## ***\*Chapter and Subunit Updates\****

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### **June Southern New England Chapter Meeting**

*Submitted by Don Danila, SNEC-AFS Publicity Officer*

The Southern New England Chapter annual summer meeting was held on June 20 at the Doyle Conservation Center in Leominster, MA. Fifty persons attended the meeting, 18 of whom were students. Following remarks by Chapter President Sean Lucey, the meeting began with a series of presentations.



*Craig MacDonald of the NOAA Office of National Marine Sanctuaries gave the keynote address on Stellwagen Bank.*

Topics included modeling larval connectivity of haddock, improvements to the NOAA Fisheries northeast saltwater recreational fisheries programs, diel behavior of white perch in a NY tidal river, shifts in the Long Island Sound finfish community associated with warming temperatures, mercury accumulation in RI cartilaginous fishes, comparative analysis of surplus production dynamics of functional feeding groups in 12 northern hemisphere ecosystems, challenges and technologies used to count fish at CT fishways, laboratory evaluations of modified traveling screens, survival of fish passed downstream at a NY hydroelectric project, and salinity preferences of three Alaskan threespine stickleback populations. Abstracts of all papers are available on the Chapter's website, found at [www.snec-fisheries.org](http://www.snec-fisheries.org).

Craig MacDonald of the NOAA Office of National Marine Sanctuaries in Scituate, MA gave the meeting's keynote address on understanding fishing effects in the Stellwagen Bank National Marine Sanctuary.

The Chapter conducted its annual business meeting and our financials remain strong. The Chapter is supporting a joint dinner with the American Institute of Fisheries Research Biologists and has made a donation to defray student registration fees at the Thirteenth Flatfish Biology Conference, which will be held on December 4-5. Committee reports were given by chairpersons. Rodney Rountree, Professionalism Committee chair, reminded members to nominate persons or organizations for various Chapter awards, which are summarized on the Chapter website. He advocated a bylaw change to allow voting for certain awards by general membership at the winter meeting, which will be taken up by the Board. Education Chair Karina Mrakovcich noted that students can apply for Chapter travel awards, also through the Chapter website. No applications were received this year for student travel. Members were urged to become more involved in Chapter activities and can volunteer for any committee by contacting any member of the Board of Directors.



*Student presenters at the summer Chapter meeting included (left to right) David Fryxell, Nicholas Kutil, Jason Boucher, and Martha Divver.*

Several awards were given out at the annual Chapter business meeting. The Saul B. Saila Best Student Paper Award was presented to Tim Jensen for his January 2012 presentation on evaluating habitat use of bridle shiner while accounting for imperfect detection. The Best Student Poster Award went to Molly McCarthy for her presentation on intra-fish variability in Atlantic salmon scales from the Sheepscot River, ME. The Irwin Alperin Award, which recognizes a Chapter member who has made outstanding contributions to the Chapter or Parent Society, including significant services, participation, and public awareness of activities, was given to Dr. David Taylor of Roger Williams University, Bristol, RI.



*Dave Taylor (right) is presented the Irwin Alperin Award by Rodney Rountree*

Dave has been particularly active in our Chapter since he was a graduate student at the University of Rhode Island. He has served on the Board of Directors since 2003 and assumed the role of Program Development Committee Chair in 2006, putting together a series of outstanding programs for our semi-annual Chapter meetings. In addition, he has successfully mentored many of his undergraduate students at Roger Williams University and encouraged their participation at Chapter meetings to present aspects of their undergraduate research activities. These presentations were invariably of high quality and many of these students will undoubtedly continue studies in fisheries science and

engage further in Chapter and AFS activities. Steve Gephard of CT DEEP received the Award of Excellence for his many distinguished contributions in enhancing and restoring diadromous fish runs in Connecticut and New England. He has been a staunch advocate for restoration of the Connecticut River Atlantic salmon run and has worked tirelessly with a variety of agencies and organizations in the construction of over fifty fish passage facilities and some dam removals in Connecticut. His efforts have been vital in the design, funding, and construction of these fish passage and protection structures on coastal streams that provide extensive access to upstream habitat for literally hundreds of thousands or more diadromous fish. Since 1976, Steve has been an active member of the American Fisheries Society, the Northeast Division, and the Southern New England Chapter. He has a wide involvement in other professional committees and organizations, including the North Atlantic Salmon Conservation Organization (including Chair of the North American Commission), ASMFC, and the Connecticut River Atlantic Salmon Commission.

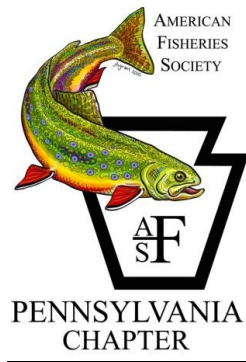


*Bill Duffy (left) presents outgoing Chapter President Sean Lucey with a Certificate of Appreciation for his service.*

At the close of the business meeting, Bill Duffy assumed the office of President. His first action was to present immediate Past-President Sean Lucey with an Award of Appreciation for his services while in this

position. In a special election vote by Chapter members, Syma Ebbin was approved as President-Elect due to Ian Conboy's resignation and departure from our area for a new job. Heidi Fitzpatrick was elected as the new Secretary-Treasurer. The next Chapter

meeting is tentatively scheduled to be held on January 16, 2013 at the University of Connecticut's Avery Point campus in Groton, CT.



## **Pennsylvania Chapter Administers Student Travel Awards**

This summer, the Pennsylvania Chapter awarded \$500 "Cooper Awards" to two deserving graduate students to attend the AFS annual meeting this August in Minneapolis-St. Paul, Minnesota. This year's Cooper Award winners were Kelley Salvesen and Tyrell Deweber. Both are students of Tyler Wagner, Ph.D., Assistant Unit Leader of the Pennsylvania Cooperative Fish and Wildlife Research Unit at Penn State University ([http://www.coopunits.org/Pennsylvania/People/Tyler\\_Wagner/index.html](http://www.coopunits.org/Pennsylvania/People/Tyler_Wagner/index.html)).

The Cooper Award was created by the Pennsylvania Chapter this year to honor the memory of the late Penn State Professor Emeritus of Zoology, and famed author of *Fishes of Pennsylvania and the Northeastern United States*, Edwin Lavern Cooper, Ph.D.



*Edwin Lavern Cooper, Ph.D., 1919–2009*

Like one of the Parent Society's student awards, the Cooper Award recipients were determined from a writing contest to recognize students who are able to effectively communicate the value of fisheries research to the general public. Student applicants were asked to submit a 500- to 700-word article explaining their own research, or a research project in their laboratory or college/university. The winning articles were prepared in a journalistic style understandable to the general public.





*Kelley Salvesen, Penn State University*

Kelley's article, "Lake trout reproduction and movement on the Niagara River, New York", describes her M.S degree research of working to quantify strain of origin for a sample of mature lake trout in the Niagara River, where two hatchery strains are currently stocked, and identify parental hatchery strain of naturally reproduced offspring. Tyrell's article, "A beautiful fish in an uncertain future", summarizes his Ph.D. degree research investigating the potential impacts that climate and land use change may have on stream habitat and brook trout populations in the Eastern United States throughout the next century.

Both Kelley and Tyrell are presenting papers at the annual meeting this August in Minneapolis-St. Paul.

(<https://afs.confex.com/afs/2012/webprogram/Paper9562.html>;

<https://afs.confex.com/afs/2012/webprogram/Paper10077.html>;

<https://afs.confex.com/afs/2012/webprogram/Paper10081.html>).

The Pennsylvania Chapter wishes them both the best!



*Tyrell Deweber, Penn State University*



## Updates from the Mid-Atlantic Chapter:

### What's going on at the DE Division of Fish & Wildlife...

There is a lot going on at the DE Division of Fish & Wildlife. Here are some highlights:

**Freshwater fisheries management-** state-owned pond and panfish management program; freshwater angler survey; small pond management program; impoundment river herring production with Alaskan steep-pass fish ladders; trout stocking; nuisance aquatic weed control.

### **Tidal largemouth bass management-**

enhancement and monitoring of tidal river populations; evaluation and characterization of habitat on the Nanticoke system.

**Marine/estuarine research-** Atlantic sturgeon population monitoring and juvenile habitat survey; age and growth studies of a number of species including black drum, knobbed whelk, tautog, eel, shad, river herring, and striped bass; long-term trawl surveys; artificial reef monitoring; American shad habitat suitability survey and stock enhancement program; striped bass/weakfish prey study; striped bass



electroshock spawning survey; horseshoe crab surveys; fisheries dependent surveys; fish kill response and investigation; recreational clam harvest survey; YOY American eel fyke net survey.

**Stock assessments-** quahog swept-area assessment of Inland Bays; DE River shad stock assessment; oyster and blue crab assessment- DE Bay.



*AFS Mid-Atlantic Chapter President Roland Hagan in his natural environment*

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## 2011 MAC Annual Meeting and News for 2012



*The Delaware Nature Society's DuPont Environmental Education Center on the Wilmington waterfront will host our 2012 meeting.*

We had an amazing 2011 meeting and we would like to extend congratulations to the

student award winners - Michaela Provost (Rutgers) for her presentation "Gear selectivity on sex in Black Sea Bass " and Danielle Haulsee (UD) for her poster "Mapping Spatiotemporal Patterns in Tiger Shark Habitats Using Satellite Technology". We look forward to entries for the 2012 meeting.

We have been getting things on the books and planned for this year's meeting, so mark your calendars and start preparing your presentations. You won't want to miss it.

Our meeting will be held November 1-2, 2012 at the DuPont Environmental Education Center (DEEC) in Wilmington, DE. Accommodations and the dinner social will be at the Double-tree Hilton (2.8 miles from DEEC along the Waterfront Walk). Last, but not least, the departing lunch will be at Iron Hill Brewery. Detailed agenda and registration information will be coming, so watch the listserv for notifications.



*Once-and-future presidents Matt and Roland: the deal is done!*

PSE&G is providing a \$1000 grant to increase student participation. We also raised \$436, with last year's raffle of intriguing donated items. Please plan early to hook your local tackle shop or nature artist so that reeling in the prizes for this year's raffle will be a breeze. All items are acceptable and every bit makes a difference.

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## ***\*Research Roundup\****

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### **Cooperative Research Spiny Dogfish Tagging Study**

*Submitted by Carolyn Woodhead, NOAA*

In the fall of 2010, the NOAA Fisheries Service's Northeast Fisheries Science Center launched a cooperative effort to tag spiny dogfish (*Squalus acanthias*) in the Gulf of Maine, Southern New England, and Georges Bank. Staff members from this project are working with three commercial vessels to tag dogfish during both winter and summer, with the goal of better assessing stock structure, movement patterns, and life-history for this species.

Nine cruises have been conducted through 2011, with more than 16,000 spiny dogfish tagged and released. To date, at least 126 fish have been recaptured. Preliminary data from the 2011 cruises indicate that the distribution of spiny dogfish, both by sex and by size, differs by area and season. Migration patterns are beginning to emerge as more recaptures are reported, and additional tagging cruises in 2012 will help to solidify these patterns.

Dogfish tagged for this study are being tagged with standard fin tags which include a toll-free number to report the required recapture information -- tag number, fork length, date, and location. Anyone who captures a tagged fish and returns this information will earn a \$20 cash reward for one of the 27,000 white tags being deployed, or a \$100 cash reward for one of the 3,000 "high reward" orange tags. Some dogfish

are being tagged with green tags for an age validation study and marked with oxytetracycline, which leaves a permanent mark on the spines and vertebrae of the fish. Recaptures of dogfish with green tags require the return of the whole fish for a \$100 cash reward. Whole fish to be returned should be iced or frozen immediately, and shipping instructions will be provided when the recapture is reported.



*Flyer advertising the tagging study*

To report the capture of tagged spiny dogfish and claim rewards, call toll free **(877) 826-2612**, report online at **[www.nefsc.noaa.gov/sharktagreport](http://www.nefsc.noaa.gov/sharktagreport)**, or e-mail **[sharkrecap@noaa.gov](mailto:sharkrecap@noaa.gov)**.

## Connecticut DEEP to Study Decline of Lobsters in Long Island Sound

*Submitted by Penny Howell, CT-DEEP*

Connecticut Department of Energy and Environmental Protection (DEEP) and University of Connecticut (UConn) biologists are undertaking a comprehensive study seeking reasons for the continued decline in the lobster population of Long Island Sound. Sound-wide sampling of lobsters and advanced laboratory tests of their tissues will provide a better understanding of why this species - and an industry it has historically supported - is now in danger of collapse in waters south of Cape Cod. Stress factors, such as high water temperatures or chemical contaminants may be contributing to the decline of this lobster stock. The possible role played by pesticides in the mortality of lobsters will be a particular focus of the study, given the attention this issue has received from commercial lobstermen and others. Recent development of more sophisticated and sensitive test technology will extend the results of studies completed years ago following the 1999 lobster die-off in the Sound. Although thermal stress associated with warm fall water temperatures is still viewed as the fundamental cause of lobster mortality, DEEP staff took samples last fall which were tested at UConn in order to determine whether recent mortalities could be attributed indirectly to bacterial or parasitic infection, or the presence of pesticides, capitalizing on the stressed condition of the lobsters. These tests took advantage of technological advances that now allow for detection of compounds in

concentrations as low as 1.5 parts per billion, or one tenth the former detectable concentrations. The lobster tissues (hepatopancreas and reproductive organs) were tested for the presence of three mosquito control agents: malathion, methoprene, and resmethrin. The tests showed that some of these lobsters were exposed to resmethrin and at least one was exposed to methoprene. Malathion was not present in any of the samples. It has been made clear to the public that possible pesticide body burdens are entirely a question of detriment to the lobster's health and pose no danger to the consumer. Given the preliminary nature of these tests and the small sample size, it is not yet clear what the presence of the pesticides in the lobster tissue means to the relative health of the lobster population. The proposed study will attempt to answer this question.



*17lb Connecticut lobster Photo credit: WWMT-TV*

## **Trio of factors drive marine fisheries production in Northern Hemisphere ecosystems**

*Comparative analyses of 13 ecosystems provides insight, potential management tools*

*Submitted by Jason Link*

Comparisons of marine fisheries in thirteen northern hemisphere ecosystems reveal that a trio of factors - fishing, food web/predator-prey interactions, and environmental conditions - drive marine fisheries production. Better understanding of the relative influence of this triad of drivers on fish populations can make fishery management more effective, as well as improve overall understanding of how fisheries work within an ecosystem.

Ten studies, published online July 12 in *Marine Ecology Progress Series*, identify trends and common patterns governing fisheries productivity in northern hemisphere temperate marine ecosystems. The open access articles are freely available to all users and appear in the issue's theme section, Comparative analysis of marine fisheries production.

“Marine fisheries occur within the bigger picture of marine ecosystems, and their sustainability is linked to processes that affect the whole system,” said NOAA Fisheries Service researcher Sarah Gaichas of the Northeast Fisheries Science Center (NEFSC), who contributed to several of the studies. “It was a challenge to come up with a fairly simple way to view the data from individual species to the full system level in order to compare ecosystems in Canada, the US and Northern Europe. We did, through the use of a simple production model, a tool that allowed us to organize data from different systems within a common framework.”

Production models have long been used in fisheries and ecological sciences, and can provide valuable information on ecosystem-based fisheries management. The models require only basic data on catch and biomass, so they are applicable to both well known and more obscure species caught by fisheries. They can also be applied to multiple levels of organization, from single species to groups of species within ecosystems, and can provide ways to measure and express the condition of a stock, a group of stocks, functional groups and for whole ecosystems.

The studies resulted from two international workshops in 2010 and 2011 in Woods Hole, Mass. organized by Jason Link of NOAA's Northeast Fisheries Science Center. At these meetings, participants assembled the large data set used in the studies. These data describe fisheries, food webs, biological and physical interactions, and environmental times-series information collected on northern hemisphere marine ecosystems.

Researchers have since used the data to compare 13 marine ecosystems off Canada, the US, and northern Europe, all northern subarctic temperate regions. They include the Bering Sea, Gulf of Alaska and Hecate Strait in the North Pacific, Georges Bank and the Gulf of Maine, the Gulf of St. Lawrence, Labrador and Newfoundland, and the Eastern and Western Scotian Shelves off Canada, to the North Sea, Norwegian Sea, Baltic Sea and Barents Sea.

“We stepped back and took a big picture look at these thirteen ecosystems with a substantial amount of data and a simple modeling tool,” said Gaichas. “Different factors or drivers are important in different systems, but some common results were found as well, which suggests that our project has identified some fundamental



features of marine ecosystems with important management implications.”

The standardized database built for this project provided the foundation for the comparative analyses presented in the studies. The database is itself a significant contribution to ecosystem-based fisheries management given the amount of information it contains: more than 70,000 records including 466 biological and 162 environmental time series across the 13 ecosystems.

“Using production modeling with the comparative approach makes valuable and rapid progress towards ecosystem-based fisheries management, whether the aim is a better understanding of the ecosystem or providing operational management advice,” Gaichas said. “Relatively simple models combined with long-term time series maintained by the participating international institutions are very useful, and highlight the benefits of collaborative projects.”

NOAA and other government researchers, as well as academic scientists from the US,

Canada, and Europe contributed to the effort. NOAA Fisheries Service organized and hosted the 2010 and 2011 workshops. The workshops were jointly funded by the US Comparative Analysis of Marine Ecosystems Organization, the Norwegian Research Council, and Fisheries and the Oceans Canada Ecosystem Research Initiative. The NOAA, Canada’s Department of Fisheries and Oceans, and Norway’s Institute for Marine Research also contributed significant resources to this project.

#### Related Links

[Marine Ecology Progress Series \(Volume 459\) Theme Section \(pages 157-302\)](#)





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## ***\*Fisheries in the News\****

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### **Tracking a predator in the Delaware Bay**

August 3, 2012

*By Carolyn Beeler for NewsWorks and WHYY*

*Submitted by Roland Hagan*

When you read about where humpback whales go when they migrate, or what Atlantic sturgeon like to eat, it is easy to take for granted how humans know these kinds of things.

But for those whose job it is to uncover the secrets of the natural world, that knowledge comes only after lots of elbow grease.

Go to almost any large aquarium and if there is a big, toothy shark on display, odds are it's a sand tiger shark. Sand tigers are scary looking, with mouths that resemble Freddy Krueger's hands, but they are relatively docile and easy to manage in captivity.

Many spend their summers in the Delaware Bay, but scientists do not know much about what they do there or where they go when they leave.

"You can think about it as being the lions of the Serengeti, well in Delaware Bay you've got sand tiger sharks, so they are essentially ruling the roost," said Delaware State fisheries professor Dewayne Fox. "(Yet) we know almost nothing about sand tigers in Delaware Bay."

The sand tiger shark is at the top of the food chain in the bay. If they were to disappear, their prey could run rampant and alter the entire ecosystem.

Low reproductive rates, overfishing and accidental catches landed the shark on the federal "species of concern" list 15 years ago, and it remains there today.



*Acoustic tagging devices help researchers track the movements of the sand tiger shark. (Paul Parmelee/WHYY)*

That is why Fox has spent much of his summer on the deck of a boat miles off the coast in Delaware Bay, catching tiger sharks to tag them with acoustic transmitters.

#### **Shark wrangler**

On a recent afternoon, University of Delaware doctoral student Danielle Haulsee was on the same boat, supervising two undergraduates impaling bait fish on hooks to get the process started.

"You poke it through the eye, and that's a good anchoring spot so the fish doesn't fall off the hook," Haulsee explained.

Haulsee is petite, and wore athletic shorts and a long blond braid thrown over one shoulder. She did not look the part of shark wrangler, but on the boat, that's what she was.

"It's a big boy!", she laughed after snagging a 7.5-foot male that thrashed for a while against the side of the metal boat.

Haulsee and the team tied both ends of the shark with a thick rope, effectively stringing

it out alongside the boat, belly-up, half in and half out of the water.

She grabbed a scalpel and folded herself over the side of the boat to cut an inch-long incision in the shark's belly and insert the acoustic transmitter, which looked like a black tube of lipstick.

Hundreds of acoustic receivers are sunk in the Delaware Bay and along the East Coast. Now, when this shark swims by any of them, those receivers will record and store the unique sound the newly implanted transmitter makes for researchers to download and study.

### **Devising a management plan**

Fox and his team have wrestled, tagged and released more than 500 sharks since 2006.

Estimates vary widely, but Fox said the evidence he trusts most indicates sand tiger shark populations are down as much as 75 percent from 30 years ago. Through his research, he wants to determine if populations are starting to rebound or if they are still in decline. Ultimately, he wants to come up with a management plan for the species.

"Knowing when they're here and when they're not here, we can work with agencies like the Army Corps of Engineers and the state agencies to allow activities like dredging and beach renourishment," Fox said. "If we know sand tigers are in a given location at a given time of the year, maybe it's not the best thing to go in there and dredge that area."

### **New tools in tracking sand tigers**

The device they have been implanting since 2006 has its limitations; it only tracks sharks when they are relatively close to the coast where the receivers are. So this year, Fox is collaborating with University of Delaware oceanography professor Matt Oliver to add some new tools to their shark-tracking arsenal.

They are implanting some sharks with both transmitters and receivers, so researchers will be able to tell not only where sharks go, but who they are with.

"When a sand tiger leaves, is it following another group of fish, does it hang out with its own species, is it a loner? We don't know that," Oliver said.

Oliver is also launching an unmanned glider that will troll the ocean for two one-month stints this summer to track sharks farther off shore. The bright yellow machine looks like a miniature airplane and will also collect a host of water-quality measurements.

"Once we can figure out where the sharks like to live, we can then take that idea and basically broadcast it up and down the East Coast, to produce a (predictive) model," Oliver said.

Preliminary data collected by Fox confirm a common hypothesis about sand tigers – many migrate to waters near Florida and the Carolinas for the winter. But they also reveal something new, that female sharks might peel off and head east, near the continental shelf, to winter alone in the Gulf Stream.

Dewayne Fox said he is looking to information gathered by the glider to tell him more.

## U.S. Fish and Wildlife Service Will No Longer Produce Salmon for Connecticut River Restoration Program

### *Will Focus on Conservation of Other Species*

At a meeting of the Connecticut River Atlantic Salmon Commission on July 10, the U.S. Fish and Wildlife Service announced that it will no longer culture salmon for restoration efforts in the Connecticut River Basin. The agency has supported salmon restoration for 45 years, but current low return rates and the science supporting salmon restoration have caused the Service to focus its efforts on other anadromous fish in the basin. The salmon program has resulted in many significant ecological benefits, for the Connecticut River watershed and other anadromous fish species.

The Service will continue to work with state agencies represented on the Commission and other conservation interests to restore and sustain other

fisheries in the river basin. The Service will redirect fishery facilities and staff to support the conservation of American shad, American eel, river herring, and shortnose sturgeon in the Connecticut. As a result of the Service's decision, White River National Fish Hatchery, which has been closed since August 2011 due to flooding damage from Tropical Storm Irene, and Dwight D. Eisenhower National Fish Hatchery, both in Vermont, will no longer rear salmon. The Service is evaluating the future role of the Richard Cronin National Salmon Station in Massachusetts. The agency will continue to support education and outreach programs that build awareness about Atlantic salmon.

The Service has also initiated a three-year assessment of the Merrimack River salmon restoration program, and it is involved in salmon recovery efforts in the Penobscot and other rivers in Downeast Maine.

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*Jamie Masterson weighing Atlantic salmon fry to get the right number to release into stream habitat in the White River, VT. Photo credit: USFWS*

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## ***\*Publications\****

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### **Field Guide to Scientific Conferences: an Ecological View**

Published in the July issue of the Bulletin of the Ecological Society of America (p 223-228)

By **Stephen Hale**

This brief, entertaining tongue-in-cheek guide is intended to assist graduate students work scientific conferences to their advantage. Taking an analytical, ecological approach to breaking down the different facets of a typical scientific conference, Hale words his guide in a manner that graduate students can relate to, and benefit from. He accurately describes most scientists as “probably not [possessing a] high social IQ.” Whether you are a graduate student, fledgling young professional, or a graduate mentor, this is a guide worth reading.

Check out the article here:

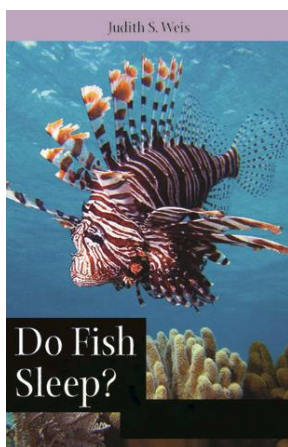
[ESA Bulletin 93-3: 223-228](#)



### **DO FISH SLEEP?**

#### **Fascinating Answers to Questions about Fishes**

by **Judith S. Weis**



Accessible question-and-answer formatted book, filled with more than 55 photographs and over 100 interesting facts from fish biology basics to the importance of preserving and restoring fish diversity and healthy populations. A captivating read for fish enthusiasts of all ages—naturalists, environmentalists, aquarists, scuba divers, and students—this is also the perfect primer for those just about to get their feet wet.

From the fifty-one-foot whale shark *Rhincodon typus* to a less-than-one-half-inch fish in the minnow family—the tiny *Paedocypris progenetica*—fish certainly carry a lot of weight . . . or do they? A fish’s heft in water may vary, but these diverse aquatic animals certainly carry a lot of weight in our ecosystems and environment.

From freshwater to ocean habitats, **DO FISH SLEEP?** offers a fascinating look at these deceptively simple creatures. Fishes may appear to live a dull existence, but appearances change once we understand more about how they survive. These wonders actually possess attributes that would make us superpowers—they can change color, sex, produce light and electricity, regenerate injured fins, prevent themselves from sinking, and some can even walk on land.

[http://rutgerspress.rutgers.edu/acatalog/Do\\_Fish\\_Sleep.html](http://rutgerspress.rutgers.edu/acatalog/Do_Fish_Sleep.html)



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