

TIDEWATER PRESS

NEWSLETTER OF THE
TIDEWATER CHAPTER OF THE
AMERICAN FISHERIES SOCIETY

Winter 2016
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President's Corner | *Scott Baker*

Happy New Year AFS Tidewater Chapter members! I hope this message finds everyone well. This is my last President's Corner and I would like to start by acknowledging (again) Past-President Jessica Thompson for all her work leading the effort of the Chapter Listserv migration and the bylaw revisions. In September, we learned that the AFS national office approved our latest bylaw revisions. Unfortunately, the Listserv migration has somewhat stalled under my leadership. I hope to get us back on track with a move to the "emaildodo" platform soon when I attend the Southern Division AFS Chapter meeting in Wheeling, WV in a couple of weeks. For the near future at least, we can and will continue to use the Tidewater Listserv hosted by East Carolina University.



I'm really looking forward to attending the 30th Annual Tidewater AFS meeting in Edgewater, Maryland

April 7-9, 2016. During our recent executive committee conference call, we heard President-Elect Rob Aguilar describe some of the details about this upcoming event. It will be nice to attend once again from "the other side" of having planned and organized such an event! And while we all go to the meeting to interact with people, to my knowledge we are heading to a new venue (Smithsonian Environmental Research Center or SERC) for the program which is always exciting.

This brings me to my most important piece of business for this newsletter! The Tidewater AFS Chapter is seeking nominations for a Virginia member to serve as President-Elect. This person chairs the Program Committee and would oversee all arrangements for the 2017 annual meeting to be held in Virginia. The President-Elect assumes the presidency upon expiration of the current president's term, so nominees

continued on next page >>>

*President's Corner, continued
from page 1*

must be willing to serve if elected. As current members know, this is an important position that must be filled in order for us to host and have a successful 31st Annual Meeting in Virginia!

Candidate bios and voting will occur through an online survey circulated via the Chapter Listserv. Officer installation will occur at the Business Meeting during the Annual Meeting in April. Send the name of your nominee, a brief bio, and a description of why they are deserving to be president, to Past-President Jessica Thompson at jessica.thompson@cnu.edu by

Friday, March 4 (although exact dates may change—refer to the dates in the Listserv announcement). Remember that self-nomination is possible and encouraged.

Also, we presently have members serving in each of the other officers' roles, many of which are willing to continue serving, but that should not preclude the nomination of another individual interested in serving the Chapter. Ideally, we will have multiple individuals nominated for each position.

For more information about officers and duties visit the Chapter Web site at: www.sdafs.org/tidewater and click on the "Bylaws"

tab. A current listing of officers can be found under the "Officers" tab.

I will conclude by offering a big thank you to all the individuals that served as Tidewater AFS Chapter members and officers during the past year. It has been fun and very rewarding to serve as your President. I look forward to seeing everyone in April at the 30th Annual Meeting. As always, the Tidewater executive committee is open to any suggestions from our members to help make the Chapter stronger and to better meet your professional needs. Please feel free to contact any one of your Tidewater officers with ideas, and I'm looking forward to seeing everyone at the meeting in March.

2016 Tidewater Chapter Annual Meeting

April 7-9, 2016

*Join us for the 30th annual
Tidewater Chapter meeting!
This year will be hosted by
President-elect, Rob Aguilar, in
Annapolis, Maryland.*

The meeting and Thursday night poster social will take place at the Smithsonian Environmental Research Center in Edgewater, MD. The Friday night banquet will be held at the Chesapeake Bay Foundation's Philip Merrill Center. Thursday afternoon before the poster social there will be a guided tour of the Smithsonian's Fish Collection at the Museum Support Center in Suitland, MD.

DEADLINES:

- Early registration: 5pm, Sunday, March 6
- Abstract submission: 5pm, Sunday, March 6
- Hotel group rate: Sunday, March 6

COSTS:

- Early registration (includes all days and socials)
 - Student: \$60
 - Professional: \$100
- Hotel group rate: \$89/night

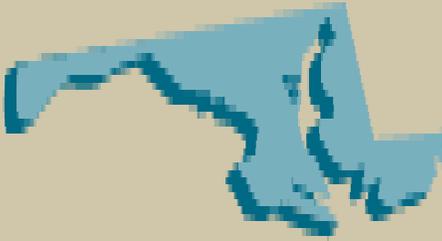
HOTEL:

- Holiday Inn Express & Suites
 - 2451 Riva Road, Annapolis, MD
 - 410-224-4317

Registration costs will increase by \$10 after March 6. Please register ASAP if you plan to attend. Oral and poster abstracts need to be submitted during the early registration period. Make sure to include your chapter dues (\$10) when registering.

To register, visit the meeting website at <http://www.sdafs.org/tidewater/AFSTidewater/AnnualMeeting.html>

Maryland State Update | *Rob Aguilar*



River Herring Spawning Run Counts

Historically abundant river herring (Alewife *Alosa pseudoharengus* and Blueback Herring *Alosa aestivalis*) spawning runs in rivers of the US Atlantic coast have declined to a fraction of their former numbers. Causes of the declines have included loss of spawning habitat due to construction of dams and culverts, overfishing (both in directed and fisheries and as bycatch), and degradation of water quality and benthic habitats due to changes in land use. In the Chesapeake Bay watershed, a lack of rigorous spawning run counts or other fishery-independent estimates of adult abundance has been a significant challenge to understanding stock status and establishing baselines for evaluating population responses to conservation and restoration efforts.

In 2014, researchers from the Smithsonian Environmental Research Center in Edgewater, MD directed by Matt Ogburn used Dual-Frequency Identification Sonar (DIDSON) to estimate: (1) spawning run size in the Choptank River, MD; (2) set baselines for population size, structure, and

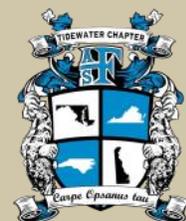
dynamics; and (3) identify environmental variables associated with run timing. Upstream migrants were estimated at $581,275 \pm 31,970$ Alewife and $726,450 \pm 39,955$ Blueback Herring. Upstream migration occurred primarily in the afternoon and evening associated with increasing water temperature and downstream migration occurred at low and decreasing levels of discharge. DIDSON was highly successful in counting migrating river herring (and fish in general) and could provide a framework for long-term run counts or fish monitoring in the Chesapeake Bay or other turbid systems. This study provides baselines for river herring population size, structure, and dynamics for evaluating responses to conservation and restoration efforts and could potentially underpin a sustainable fishery management plan.

Cownose Ray Telemetry

Researchers from the Smithsonian Environmental Research Center in Edgewater, MD directed by Matt Ogburn along with Bob Fisher at VIMS, recently documented the first complete migrations of individual Cownose Rays—from the spawning grounds to southerly overwintering areas and then returning to the same spawning grounds. Despite being common along the eastern US, there are significant gaps in our understanding of the basic biology and ecology of Cownose Rays. Concerns that Cownose Rays are

adversely affecting oyster and clam wild harvest and aquaculture have inspired efforts to develop a commercial Cownose Ray fishery. However, like many elasmobranchs, the slow growth rate of Cownose Ray populations (only a single offspring pup is produced annually) makes them highly susceptible to overfishing, which has resulted in an IUCN Red List status of “near-threatened.”

To better understand Cownose ray ecology and movement, a total of 50 (including 12 yoy) Cownose Rays were tagged at several sites in the Chesapeake Bay, in both Maryland and Virginia from 2014–present. Most fish were tagged with 2-year tags, but several large rays received 6-year tags. To date, tagged Cownose Rays have been detected from Long Island, NY to Cape Canaveral, FL, with both offshore detections and those from within estuarine systems. If you operate VEMCO receivers, please check ACT for any unknown codes, they may be a Chesapeake Cownose Ray! Tagging will continue in 2016 and feel free to contact Matt Ogburn or Rob Aguilar with any questions. These data will increase our understanding of Cownose Ray life history and aid in the development of management strategies based on sound science.



Virginia State Update | *Willy Goldsmith*



Northern Snakehead Abundance Stabilizes, but Distribution Broadens

While recent electrofishing efforts by the Virginia Department of Game and Inland Fisheries (VDGIF) indicate that snakehead abundance has possibly stabilized in locations where the species has been long-established, colonization in new waterways may threaten native and naturalized species. According to VDGIF biologist John Odenkirk, the relative abundance of the species increased dramatically in the upper tidal Potomac River after it first appeared in the waterway in the early 2000s. From 2004-2015, however, sampling in three creeks near Mount Vernon—where northern snakeheads have been established longest—suggests that abundance increases have slowed and that the population may be plateauing. For example, in Little Hunting Creek, population estimates (12-22 fish per hectare) declined each year from 2013 to 2015. However, “the jury’s still out,” says Odenkirk, as it is unclear if densities might eventually increase further. “If we’ve seen maximum abundance, we may have

dodged a bullet in this productive system, but we’d sure like to keep containment,” he adds.

Increased recreational and commercial harvest may be contributing to the stabilization of northern snakehead abundance. Recreational anglers in Maryland are required to kill any snakeheads they catch, and the practice is strongly encouraged among Virginia anglers. Several



A net full of young-of-year northern snakeheads. Despite apparent population stabilization in some waterways, the species continues to invade and establish itself in new areas in northern Virginia.

tournaments targeting snakeheads recreationally with both hook and line and bow and arrow have arisen in the region as well, further cropping numbers of the species.

Commercial fishermen in both Maryland and Washington, DC, meanwhile, are permitted to sell locally-caught snakeheads for human consumption. Inter-annual recruitment variability may also play a role, though the factors contributing to such fluctuations are unclear.

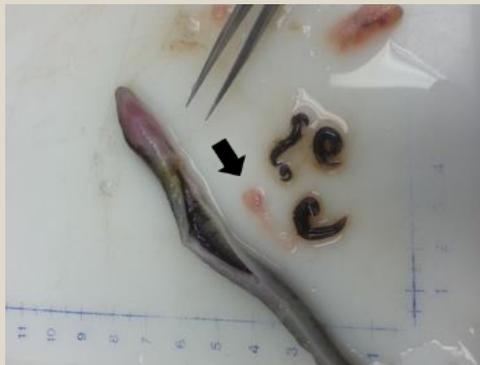
Despite these pressures on northern snakeheads, Odenkirk says, distribution of the species continues to increase in Virginia, due to both the migratory and dispersal capabilities of snakeheads and in some cases illegal introductions by humans. In January, for example, one individual was convicted of illegally stocking northern snakeheads into Lake Brittle, near Warrenton, in May 2015. At this time, areas of snakehead colonization in Virginia include the entire Potomac River (from above Great Falls to Chesapeake Bay), the entire tidal Rappahannock River (no documentation above Fredericksburg, but no barriers to further upstream movement) and numerous northern municipal and recreational reservoirs. For more information on northern snakeheads in Virginia, please contact John Odenkirk (john.odenkirk@dgif.virginia.gov).

Virginia, continued

VIMS Graduate Student Examines Parasite Impacts on Chesapeake Bay American Eels

A 2012 benchmark stock assessment for the American eel (*Anguilla rostrata*) by the Atlantic States Marine Fisheries Commission (ASMFC) revealed that the species is depleted in US waters. Reasons for the depressed population of the catadromous species include the usual culprits, such as overfishing of both adults and juveniles, dams, pollution, and habitat loss. But an additional threat comes in the form of disease—specifically, anguillicolosis caused by a parasitic nematode that infects the species' swim bladder. An invasive species, the nematode, *Anguillicoloides crassus*, is naturally found as a parasite in the Japanese eel (*Anguilla japonica*), but was likely introduced to wild populations of the American eel and European eel (*Anguilla anguilla*) via the eel aquaculture trade. Though first discovered in American eels in the US in 1995, relatively little work has been done to evaluate the negative effect of the parasite on eel fitness, though surveys have indicated high prevalence in the species—up to 80% in some areas. With the exception of the larval stage, all life stages of the American eel are susceptible to infection by the parasite. In European eels, the nematode has been linked to such deleterious effects as reduced swimming performance and decreased ability to cope with low oxygen levels, which could result in increased mortality and reduced reproductive success.

Zoemma Warshafsky, a Master's student at the Virginia Institute of Marine Science (VIMS), is using a combination of survey and modeling techniques to assess the extent to which the parasite affects American eel populations. Supported by a Virginia Sea Grant Graduate Research Fellowship, Warshafsky collects glass eels and elvers from six sites in Chesapeake Bay (part of the VIMS-led American eel young-of-year monitoring program in Virginia, mandated by the ASMFC), dissects them, counts the number of parasites, and evaluates the degree of swim bladder damage, the latter measured using a swim bladder degenerative index (SDI).



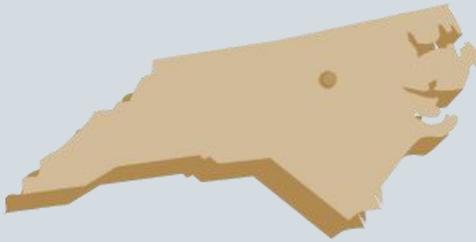
A juvenile American eel whose swim bladder (arrow) contained several specimens of the parasitic nematode, *A. crassus* (right). Zoemma Warshafsky found that 60% of juvenile eels sampled were infected by the invasive swim bladder parasite. Forceps are included for size comparison.

During her spring and summer sampling in 2015, Warshafsky found 60% prevalence of the adult stage of the nematode in elvers, whose swim bladders were found to contain as many as 10 of the parasites. Of all elvers sampled, 87% had swim

bladders exhibiting some degree of damage due to parasitic infection—for example, reduced gas volume. Swim bladder degradation can lead to the organ's becoming an unsuitable habitat for the nematode, and the nematode is unable to infect the most damaged swim bladders—thus, damaged swim bladders without the parasite can indicate past infection. Following sampling during the 2016 season, Warshafsky—co-advised by Drs. Robert Latour and Andrew Wargo, both of VIMS—will develop a model, using her data in addition to data collected from yellow (adult) eels, to estimate American eel mortality in Chesapeake Bay due to the parasite.

In addition, Warshafsky plans to use an innovative technique to determine how anguillicolosis progresses in the eels: analyzing the shape and area of the swim bladder as seen in radiographic images produced by conducting x-rays of infected eels. Changes in the swim bladder, monitored over several months, will provide a degradation timeline and provide insight into whether there is the potential for recovery from infection. Warshafsky hopes that her findings, which will include information on age-specific infection rates and swimbladder degradation processes, can be incorporated into future ASMFC American eel stock assessments and inform management strategies that support sustainable harvest. For more information on the study, please contact Zoemma Warshafsky (ztwarshafsky@vims.edu).

North Carolina State Update | *Jacob Boyd*



I hope everyone had a wonderful holiday season and is recovering well! Here in North Carolina we have had quite the warm winter to date with El Niño bringing rain to eastern NC quite frequently! We have also had the first named hurricane in the Atlantic Ocean (Alex) for 2016 which became a hurricane on January 13. Alex is the first hurricane to exist in the Atlantic Ocean in January since Alice in 1955 and the first to form in January since 1938. We all know that climate change is happening and that it will have impacts to marine ecosystems and the species that inhabit them. We know many of the byproducts of climate change such as sea level rise, and warmer waters will have drastic impacts to marine and terrestrial environments. North Carolina has a very diverse marine ecosystem being the southern and northern edge for many species distributions. This diversity drives recreational and commercial fisheries, which in

turn, drive the economies of many coastal counties. Many species have begun pushing farther north and south of their typical yearly migration sometimes leaving North Carolina in the rear view mirror for greener grasses. So I know what you are thinking, "Okay, Jacob big deal....we already know this we are marine scientists, duh!" I am not regurgitating this info just to do so (and by the way, like I tell my 6-year-old son, saying duh is

the lucky private sector folks, we have to start looking at this from a short range perspective. We know the outcome in the long term, but all it would take is one category 5 hurricane to hit NC's coast and the Pamlico Sound becomes the Pamlico Bay, creating/destroying an entire ecosystem in one fell swoop. I mean hurricanes in January!?!? Recreational fishermen, commercial fishermen, and fisheries managers will all

have to adapt to the changing fisheries, short term as well as long term. It is our job to educate and prepare for the worst-case-scenarios and hope for the best. While much of this work will hopefully benefit our grandchildren in the long term we also must manage for the short.

A new state record jolthead pogy, *Calamus bajonado*, was certified by the North Carolina Division of Marine Fisheries on May 27, 2015. The fisherman, from South Carolina, caught the 14-pound, 14-ounce fish while fishing off of Calabash, NC. The fish was 26-inches fork length with a girth of 24 inches. The former state record for this species was recorded in 1978 and weighed 11

pounds, 8 ounces. The world record in 23 pounds, 4 ounces caught off Madeira Beach, Florida in 1990.



impolite) but to drive the point home that as academia, state agencies, federal agencies, or for

University of Maryland Eastern Shore Student Subunit Update | *Stephanie Martínez-Rivera and Rebecca Peters*

The University of Maryland Eastern Shore subunit has been working hard this past semester to be active again in the Tidewater Chapter. Our main goal is to become more involved with the local community by participating in outreach programs with organizations on the Eastern Shore of Maryland. This spring we hope to work with the Maryland Coastal Bays Program to educate local students about the Maryland Coastal Bays watershed, as well as to share information about the research currently being conducted by our members. In addition, we became an official UMES organization in order to have undergraduate members and to inform the university community about the AFS.

First, we want to congratulate our former president, Mason King, who graduated in December! Mason's master thesis research investigated the potential of intermittent drainage ditch sediments to release urea, a type of organic nitrogen, to surface water. High urea concentrations can accumulate in stagnant agricultural ditches and may pose a threat to receiving waters by triggering harmful algae blooms. Congratulations Mason!

We also would like to congratulate Wilmelie Cruz-Marrero who received a prestigious NOAA Saltonstall-Kennedy Grant Program and Laura Almodovar-Acevedo who received the competitive NOAA Graduate Research & Training Scholarship (GRTSP). Wilmelie will work with on the efficacy of Marine Protected Areas and No Take Zones for the survival of queen conch (*Lobatus gigas*) in Puerto Rico, and



Subunit members at the Maryland Coastal Bays Program International Coastal Cleanup Day activity. (From left to right) Wilmelie Cruz-Marrero, Stephanie Martinez-Rivera, Mariah Dennis, Rebecca Peters, Audy Peoples, Laura Almodovar-Acevedo, Justin Wilson, and Maurice Crawford (advisor).

Laura will expand her Ph.D. research, which is focused on black sea bass juvenile habitat in the Chesapeake Bay!

More recently, the subunit members joined the Maryland Coastal Bays Program (MCBP) for the International Coastal Cleanup Day on September 19 to help clean a local marsh in Ocean City, MD. This

marsh is located adjacent to a local park-and-ride off Route 50, where trash is often tossed. Volunteers scoured the marsh for two hours filling large trash bags with items ranging from plastic bottles to shoes that were buried in the marsh mud. We made sure to record each item of trash to make a list of what we found so we could report the results of our cleanup to the Ocean Conservatory. This collaboration with the MCBP is

giving us the opportunity to work with the community as volunteers on their outreach program. We look forward to partnering with the MCBP for the event in 2016!

Currently, we are working on having a UMES AFS subunit symposium this semester as part of the Graduate Research Week Symposium in April at UMES. We invite anyone conducting research related to the aquatic sciences in the Tidewater Chapter to present at this symposium! We will update you with new information.

Finally, we are looking forward to this year's Tidewater Chapter meeting!

Please contact us at umestidewatersubunit.afs@gmail.com for any questions.



Treasurer's Report | *Stephanie McInerny*

The current checking account balance includes rebate and reimbursement checks from AFS for dues, payment to Formsite to open registration for the 2016 Tidewater meeting, and a deposit check for the upcoming banquet in Maryland during our annual meeting. 2015 taxes have been filed.

If you are not currently a member of the Chapter but would like to join, a membership form can be found on the Chapter website or you can email me at Stephanie.McInerny@ncdenr.gov. Annual dues for 2016 are \$10.00. A lifetime

membership is available for a onetime fee of \$150.00. Checks should be sent to:

Stephanie McInerny
TWC Secretary/Treasurer
209 Brigantine Ct.
Cape Carteret, NC 28584

Please make checks payable to: "Tidewater Chapter AFS."



Current Financial Report

Checking:	\$13,245.29
Mutual Fund:	\$ 1,398.38
Total:	\$14,643.67

News From the President Elect | *Robert Aguilar*

Robert Aguilar has been a Biologist with the Smithsonian Environmental Research Center (SERC) in Edgewater, Maryland since 2002. Over the years, Rob has worked on a number of projects focusing on blue crab ecology and fisheries dynamics as well as supporting general research activities at SERC. His current research includes developing complete genetic barcode libraries of Chesapeake Bay fish and major invertebrates, Blue Catfish and Cownose Ray telemetry, river herring spawning run counts, river herring PIT tagging, trophic dynamics of sympatric introduced and native Chesapeake Bay catfishes, identification of digested prey remains via DNA barcoding, Blue Crab mark-recapture, long-term fish and Blue Crab abundance surveys, plus amphibian and reptile monitoring at SERC.

Prior to SERC, Rob received a MS in Zoology from North Carolina State University, where his research focused on movement and post-hooking mortality of adult Red Drum in the Neuse River, North Carolina. Rob also holds a BS in Marine Science from Stockton University in the great state of New Jersey. Before grad school, Rob spent an enriching year as a field technician mucking through marshes and manhandling

Mummichogs at the Rutgers University Marine Field Station in Tuckerton, NJ.

Rob is looking forward to hosting the 2016 Tidewater meeting at the Smithsonian Environmental Research Center, 7-9 April 2016. He will be taking up all the generous offers of assistance shortly. Consider yourself forewarned. This will be the first large meeting held at SERC since the construction of a large addition to and redesign of the Mathias Laboratory and Rob will be happy to give anyone interested a tour of the new facilities. The talks and poster social will occur at SERC with the banquet held at the Chesapeake Bay Foundation's Philip Merrill Center in Annapolis, MD. You may remember this as the banquet location for the 2006 meeting. Given SERC's proximity to a number of universities and state and federal governmental agencies, a record breaking attendance and all-around great meeting is expected. We are starting to receive responses from prospective sponsors and should have an excellent level of support. Vemco has kindly donated a new VR2Tx receiver for the silent auction – start saving now! Feel free to contact Rob (aguilarr@si.edu) if you have any questions, would like to assist in meeting preparations or have any items to donate for the raffle/silent auction.

AFS Tidewater Chapter Executive Committee

President: Scott Baker

President-Elect/ Program Committee

Chair: Rob Aguilar

Past President/ Nominating Committee

Chair: Jessica Thompson

Treasurer/ Secretary: Stephanie McInerny

At-Large Members

North Carolina: Jacob Boyd

Virginia: Willy Goldsmith

Maryland: Bob Murphy

Student Subunit Presidents

Duke: Joe Chambers

ECU: Nick Tolopka & Zach Gillum

UMCES CBL: Emily Liljestrand

UMES: Stephanie Martinez

UNCW: inactive

Awards & Scholarship Committee Chair:

Sara Mirabilio

Webmaster: Chad Smith

Newsletter Editor: Laura Lee

2016 AFS Annual Meeting Heads to Kansas City!

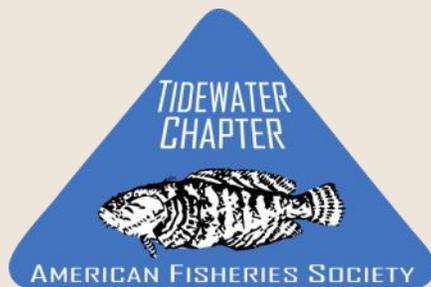
The Missouri Chapter and North Central Division of the American Fisheries Society invite you to attend the 146th AFS Annual Meeting in Kansas City, August 21-25, 2016. This year's theme is: *Fisheries Conservation and Management: Making Connections and Building Partnerships.*

The 2016 Annual Meeting offers a chance to present your science to experts from around the world, enhance your job skills with hands-on Continuing Education Workshops, see the latest technology in the Trade Show, and network with colleagues old and new. This year's hotel and conference center are all under one roof at the Sheraton Kansas City at the Crown Center, giving you more free time to see presentations, meet with collaborators, and explore the city. And Kansas City's affordable, central location, combined with its thriving arts culture, nightlife, and stunning natural resources, means that there is something for everyone to enjoy in August 2016!



Visit <http://2016.fisheries.org> for more information.

*Get updates via the Chapter **LISTSERV***



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