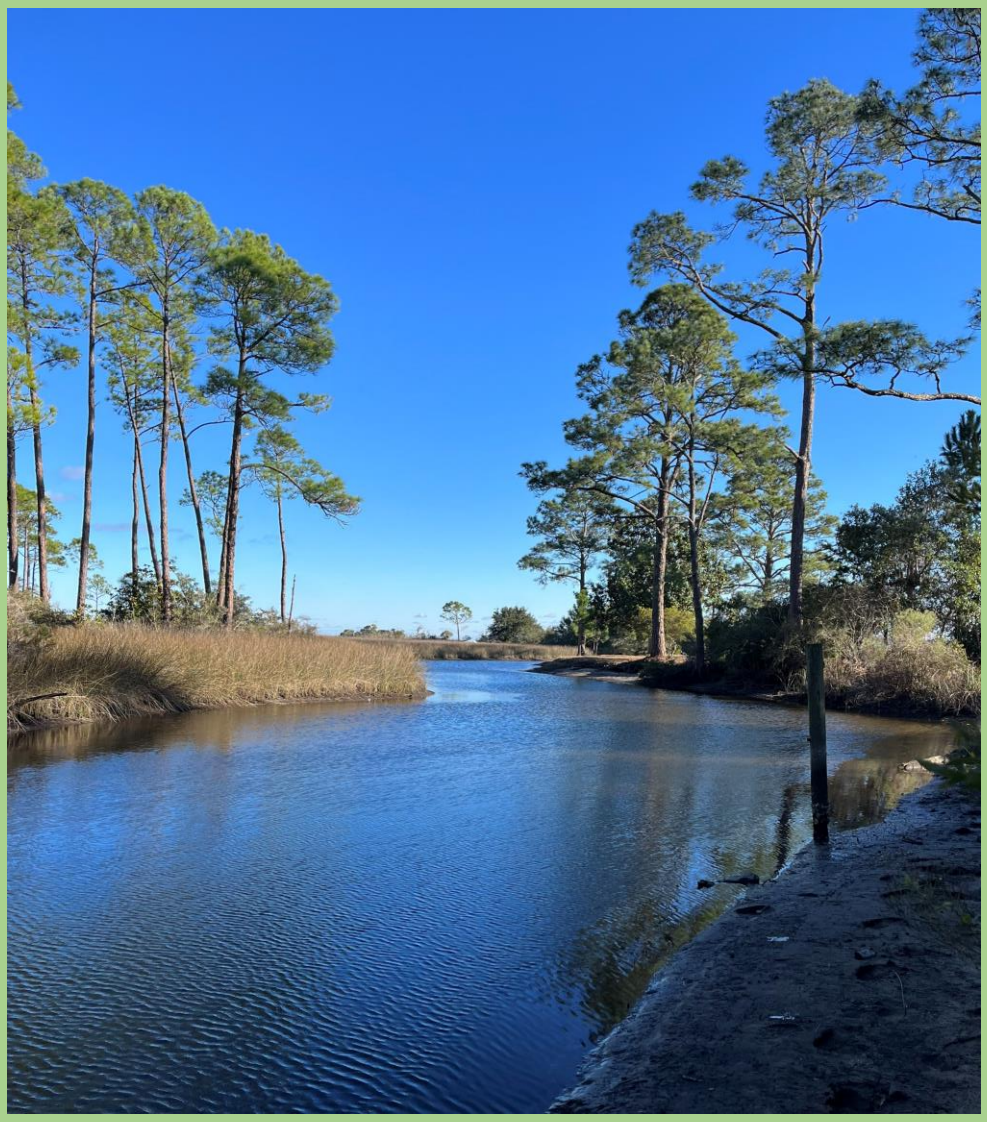


AFS Estuaries Section News Winter 2024 Newsletter

In this issue:

Newsletter Editor

Geoff Smith
geoffreyhsmith@gmail.com

Webmaster

Mike Curtis
michaelcurtis3@my.unt.edu

Section Officers

President
Justin Stevens
justin.stevens@maine.edu

President-Elect
Mike Curtis
michaelcurtis3@my.unt.edu

Treasurer
Konstantine Rountos
krountos@gmail.com

Secretary
Amanda Croteau
acroteau@uwf.edu

Past President
John Mohan
jmohan@une.edu

President's Message

Hello Estuary Section membership,

I hope that this message finds you well. As I sit in my office, the rivers are frozen and the coast of Maine is quiet in its winter solitude. In preparing this message, I reviewed the latest membership list and was struck at the geographic diversity of this section. This is contrasts to my time in AFS which has always been in the Northeast Division! I appreciate the range in geographies as well as the range in interests of members of this section. This fact empowers me to champion the benefits of being a section member and how we can work to maximize this benefit.

Looking at the past, we had a great experience in co-sponsoring the Monsters of Environmental Justice Event in Grand Rapids MI in August. The event was the perfect prelude to the meeting by raising awareness of indigenous and minority perspectives in our work and our communities. This was a common theme throughout the meeting, and I look forward to similar themes as focus shifts to the 2024 meeting in Honolulu. This event helped us generate revenue that will be used for future student travel awards

Speaking of awards, the executive committee is working on plans to offer student travel awards for the Annual Meeting in Honolulu. This is a great opportunity for students to experience the full breadth of AFS membership and develop those all-important networks and professional skills. Keep an eye on our website and future newsletters for details.

Looking ahead, we plan on highlighting stories from our past student award winners in this and future newsletters as the connection between student involvement translating to professional success is a story worth celebrating!

Again, thank you for your membership and I look forward to spring coming soon!

Justin Stevens

AFS Estuaries Section President

Justin Stevens

Justin conducting fisheries acoustic surveys in the Penobscot River Estuary (photo credit: Kathlyn Tenga-Gonzalez).

New Estuaries Section Logo Contest

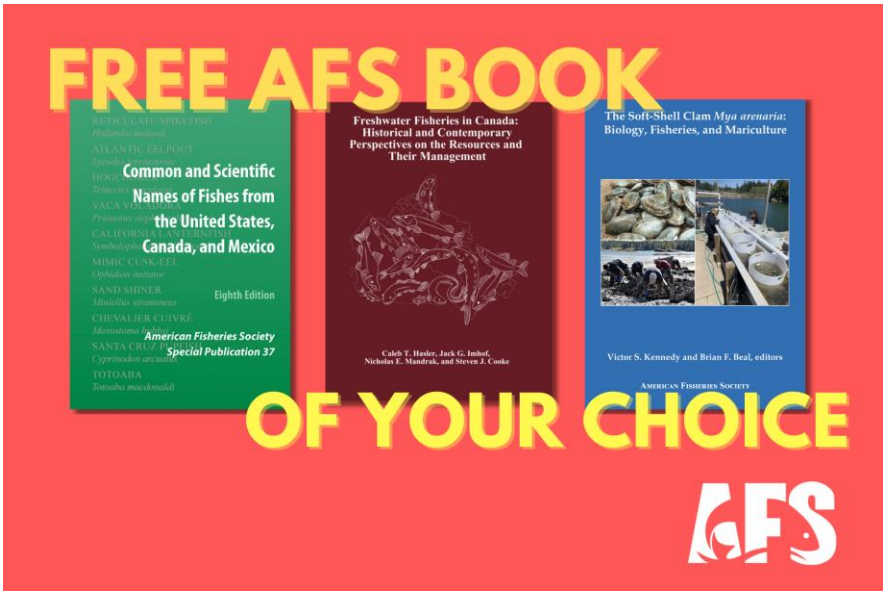
Hello Estuaries Section Members,

The new AFS logo debuted at the 2021 Business Metting in Baltimore providing a fresh symbol for the society and, subsequently, allowing individual Sections and Chapters the opportunity to update their logos to incorporate the new design.

The Estuaries Section is inviting members to participate in a logo design contest, creating a new logo that incorporates the updated AFS design and encapsulates the mission and goals of our section!! We are specifically encouraging designs that capture the unique biology, ecology, and human dimensions of estuaries.

We have a fantastic and talented body of Estuarians and want to highlight the artistic and graphic design skills of our members. Logo designs should follow the AFS Unit Branding Guide and use the approved AFS logo files (found here: https://fisheries.org/new-afs-logo/). Send submissions to afs.estuaries@gmail.com by July 15th, 2024.

Please include your name, email, and full color .png file for the logo. The winner will be announced, and the new logo unveiled, during the AFS Estuaries Section annual business meeting (date/time TBD). **The winning Estuarian will receive a certificate for a single free item (no cost limit) from the AFS bookstore!!** If your logo design is chosen, you will need to provide: a list of all fonts and colors used for the design, editable vector files for both CYMK and RGB colors, and the original .png file. You will also need to transfer full legal copyright to the AFS Estuaries Section.



Monsters of Environmental Justice Recap

We had a very successful fund-raising workshop at the 2023 AFS Annual Meeting to benefit student travel awards for the AFS Equal Opportunities and Estuaries Sections. The event attracted 26 paid attendees and raised a total of $900, which will be split evenly between the two Sections. Big thanks to the amazing presenters, pictured below, who provided a very interesting and thought-provoking kick-off to the week, as well as Lian Guo and Asha Ajmani for helping to organize and host the event. Take care and keep up the good work all!

Lee Benaka
Monsters Workshop Committee Chair

Q&A with Past Student Travel Award Winner

Please introduce yourself and when you were awarded an Estuaries Section Travel Award.

My name is Geoffrey Smith, and I was awarded an Estuaries Section Travel Award in 2014 for travel to the parent society meeting in Quebec City, Canada.

What were you working on at that time?

I was PhD student at the University of Florida, and I was conducting research for my dissertation that was investigating the potential impacts of non-native Pike Killifish on juvenile Common Snook in tidal tributaries of Tampa Bay, FL.

Did you continue to be involved with the Estuaries Section after this meeting?

Like many of our current excom members, shortly after receiving the Estuaries Section Travel Award, I was asked to run for an excom position. In my case, I was asked to run for their secretary position and was later elected to this position. Following my term as section secretary, I transitioned into the role of newsletter editor. When I can attend parent society meetings, I look forward to catching up with fellow section members at our business meeting and the informal socials that often take place.

Are you still involved with AFS? With the Estuaries Section?

Beyond my involvement in the Estuaries Section, I have been a Florida Chapter and parent society member for nearly my entire time as a graduate student and professional. As a member of the Florida Chapter, I regularly attend and present at their annual meetings, assist with meeting logistics, and for the past 5 years I have co-chaired our raffle and silent auction committee. When the Florida Chapter hosted the parent society meeting in 2017, I co-chaired the printing and signage committee for the meeting.

Continued on page 6

Geoff conducting peripheral oyster surveys in Santa Rosa Sound, FL.

Q&A with Past Student Travel Award Winner

Continued from page 5

Where are you now? Are you still working in estuaries, or have you transitioned to another focus area?

I am currently a biology instructor at Northwest Florida State College. During the time I was wrapping up my doctoral dissertation and for a few years after, I worked as a staff biologist in my advisor's lab where I primarily oversaw the field and lab work for a study investigating the ecological impacts of dredge on offshore sand shoals. In my current position, I have moved back into the estuarine realm and have recently conducted studies focusing on peripheral oyster distribution and fish assemblage composition in tidal tributaries. Both of these studies focused on the Santa Rosa Sound estuary in the Florida panhandle.

What do you see as the main benefits to your involvement with AFS at various levels, including the Estuaries Section?

AFS has served as a great networking tool from the Chapter level to the parent society level. It has also provided a reliable venue to present my research to a target audience at a relatively reasonable cost compared to a number of other large professional organizations. As an Estuaries Section member, there are almost always some familiar faces to interact with a parent society meetings as well.

Geoff conducting fish surveys in small tidal tributaries of Santa Rosa Sound, FL using a center bag seine (left). A juvenile Sheepshead (top right) and juvenile Red Drum (bottom right) caught during these surveys.

Student Travel Award Winner Article

Evaluating Novel Approaches for Improving Anadromous Fish Passage in Coastal Rivers

Aaron Bunch, PhD Candidate
Clemson University, Advised by Dr. Troy Farmer

For over a century, anadromous fish including American shad, striped bass, and Atlantic sturgeon have been in decline in North Carolina's Cape Fear River estuarine and freshwater sections due to overfishing, pollution, and habitat fragmentation. Low-head lock and dams have impeded migrations leading to multiple iterations of mitigation measures implemented including fish ladders, conservation locking, a nature-like fishway constructed and modified at the lowest lock and dam, and environmental flow (e-flow) experiments. The nature-like fishway at lock and dam 1 was originally constructed as a "rock-arch-ramp" in 2012 at the head-of-tide to facilitate upriver fish passage and subsequently underwent modifications in 2021 to a multi-route river-parallel design with three distinct routes that were deepened and widened. There are two other lock and dam structures further upstream that also create barriers for migrating fish to reach historical spawning grounds that do not have functional fishways. As part of a wholistic ecosystem focused set of flow prescriptions, natural spring flood events were enhanced with releases from an upstream reservoir to submerge the dams for migrating anadromous fish to pass upstream.

My research aimed to develop and evaluate innovative approaches to fish passage and behavior analysis all in the context of how natural flows and e-flows influence movement and passage. Key objectives include: 1. describe a novel environmental flow prescription focused on dam submergence flows, 2. evaluate an innovative acoustic double tagging method (Bunch et al. 2023), 3. utilize broad scale acoustic telemetry across all locks and dams to quantify fish passage probabilities, 4. elucidate fine scale core space-use patterns and latent behavioral states at the nature-like fishway, and 5. complement acoustic telemetry with environmental DNA (eDNA) techniques to detect Atlantic sturgeon and American shad in order to enhance understanding of distribution and longitudinal movement.

The modified design of the nature-like fishway at lock and dam 1 on the Cape Fear River. Photo credit: Aaron Bunch

Researchers tag and release a large female Atlantic Sturgeon during a University of North Carolina-Wilmington led study. From left to right: Aaron Bunch, Jake Mathews, and Will Lanier. Photo credit: Fred Scharf

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Student Travel Award Winner Article

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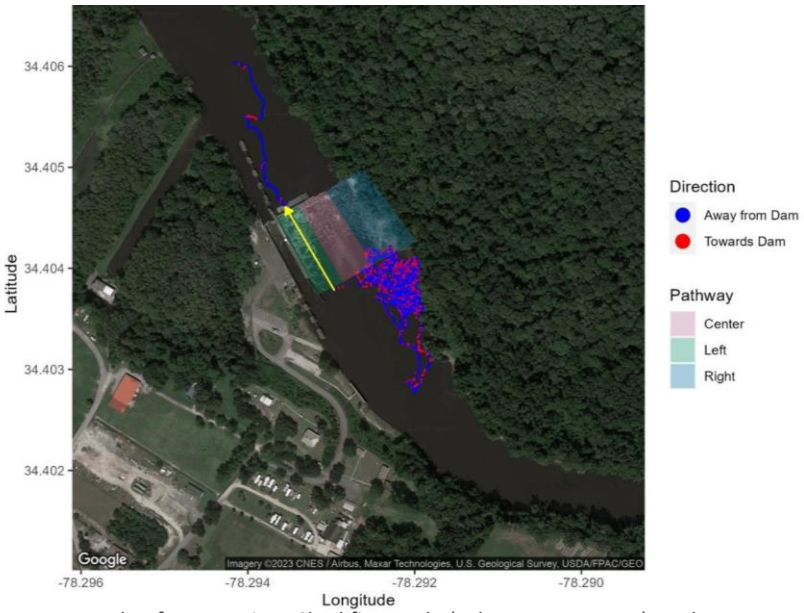
Broad scale movement patterns revealed that American shad outperformed striped bass in overall passage success at lock and dam 1, both before and after the nature-like fishway was modified. Both species demonstrated modest increases in passage success following the modification. We found that flow is a strong predictor of fish passage, and that submerged low-head dams improved passage when conservation locking did not occur. No tagged Atlantic sturgeon passed through the fishway during the spring spawning season. Fine-scale fish positions revealed species-specific differences in both passage timing and ascent duration. Striped bass typically ascended in the morning and remained in the fishway longer while American shad passed mostly in the afternoon or evening and spent less time completing the journey through the fishway. Fine-scale data also showed that American shad and striped bass generally engaged in staging and (or) foraging behaviors below the fishway. Atlantic sturgeon aggregation areas were identified by the fine-scale positional data below the fishway. The combined high detection density in both the broad- and fine-scale datasets suggest that the area below the nature-like fishway represents a spawning area for Atlantic sturgeon. The collection of Atlantic sturgeon acoustic data was made possible through a collaborative effort with researchers from the University of North Carolina-Wilmington (Dr. Fred Scharf, Jake Mathews). eDNA revealed that an assay developed by Plough et al. 2021was very effective at detecting Atlantic sturgeon during ground-truthing at sites known to be occupied, and that untagged Atlantic sturgeon passed two lock and dams following a large e-flow event. This is the first scientific evidence of Atlantic sturgeon detected above the second lock and dam. Spring flood events and continued mitigation strategies to improve fish passage are essential to improving anadromous fish populations on the Cape Fear River. These methods and concepts can be applied more broadly in other aquatic systems.

A mooring designed to hold one of the 24 Innovasea high residence receivers (HR3) deployed during the fine-scale acoustic study. The mooring was hand grappled, lifted with the capstan winch, and then connected to the rotational davit arm in order to maneuver the 300 pound mooring. Photo credit: Aaron Bunch



An example of an American Shad fine-scale (submeter accuracy) track on a single day in which the fish passed the nature-like fishway. The fish spent a large portion of the day milling around the bottom right area below the fishway, and passed the fishway along the left route.

Announcements

Sponsored Symposium

Coastal Systems in Flux: Fish and Fisheries in a Multi-stressor World

Sponsors: Estuaries Section and Marine Fisheries Section
Co-organizers: Konstantine Rountos, Abigail Archer, Howard Townsend

Abstract: Many coastal and estuarine ecosystems worldwide are becoming increasingly degraded. Several intertwining factors including warming, eutrophication, harmful algal blooms, hypoxic events, ocean acidification, and habitat degradation and loss pose significant threats to the management and conservation of fish species. While the co-production of knowledge investigating these impacts by scientists, managers, and fishers has led to an increased ecological understanding, the development of new tools, and an overall refining of management approaches, these systems are constantly evolving requiring near continuous research effort. The objectives of this symposium are to 1) highlight the most recent and pertinent research in these areas, 2) learn from successful partnerships amongst stakeholders, and 3) chart future directions for knowledge co-production amongst communities, fisheries scientists and ecosystem managers. We aim to elicit broad discussion and draw contributions from a diversity of leading experts, young professionals, and students who are actively advancing this discipline of fisheries science.

The Estuaries Section is co-sponsoring a session for the 2024 Annual Meeting that is right up your "stream". If you are planning on attending the Annual meeting in Hawaii, please consider contributing to our session.

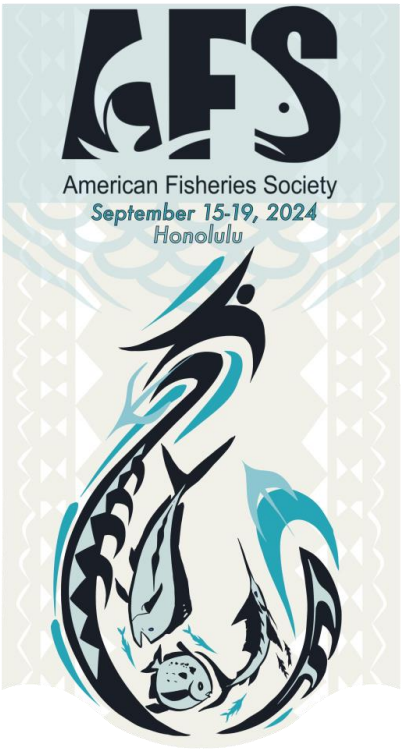
If you are interested in contributing, please contact Konstantine Rountos krountos@gmail.com.

Announcements

Upcoming Meetings

- 9th World Fisheries Congress: Seattle WA, March 3-9, 2024

- AFS 154th Annual Meeting: Honolulu Hawaii, September 15-19, 2024



Estuaries Section Treasurer's Report

respectfully submitted on 02/22/2024 by
Dr. Konstantine J. Rountos (Treasurer)

Date	Balance	Credit	Debit	Note
07/31/23	4,263.52			Treasurer's Report (Summer 2023 Estuaries Section Newsletter)
08/18/23	4,063.52		200.00	Donation/Sponsorship for Stakeholder Engagement Social (AFS 2023; Grand Rapids)
09/15/23	4,398.52	335.00		Refund for Student Travel Award (Ojo Oke - AFS 2023 Annual Meeting). The student was originally supported to attend the meeting in-person. The student could not obtain a visa to attend in-person, so only virtual registration was paid. Total refund is $335 – the difference of $360 for Low-Middle Income Country (LMIC) in-person registration, and LMIC virtual registration, ($360-$25 = $335).
02/23/24	4,398.52			Current balance
Note: Form 990-N(e-Postcard) submitted and accepted by IRS.GOV on 02/22/2024.				

Check us out online!

Website: http://estuaries.fisheries.org

X (Twitter): @Estuaries_AFS

Facebook: http://www.facebook.com/EstuariesSectionAFS

LinkedIn: https://www.linkedin.com/groups/7443198