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AFS Estuaries Section News Spring 2023

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President's Message

Dear Estuarians*

As we recently adjusted our clocks to advance one hour, we anticipate the coming spring. Extended sunlight and longer days, increased temperatures and melting snow, provide natural environmental cues that many estuarine fish rely upon to complete their life history. Fish are tuned to these natural rhythms and so are we.

This past January, the Southern New England Chapter (SNEC) hosted their annual meeting in Boston. It was well attended by Estuarians and there was a full symposium focused on diadromous fishes. Diadromous fishes are critical as they connect marine and freshwater ecosystems, with the estuary being the link between the two habitats. The historical, economic, and ecological importance of estuaries reinforces the significance of our sections focus.

Looking forward to this May, the Latin American and Caribbean Fisheries Congress will be occurring in Cancun Mexico (<https://lacfc.fisheries.org/>). The hybrid meeting will have both in-person and virtual attendance options, so please consider participating.

In this newsletter, please enjoy articles written by our remote undergraduate student travel award winners, Stella and Faloni Ester, and our in-person Ph.D. travel award winner Katrina Zarrella Smith. We are also excited to announce our 2023 student travel awards for Grand Rapids 2023! Please read for more details.

We are seeking AFS Estuaries Section leaders with our spring elections. Please consider serving your section by joining the executive committee!

*Thanks, past president Karin Limburg for the term!

AFS Estuaries Section President

John Mohan





Student Travel Award Winner Article: Katrina Zarrella Smith

Katrina Zarrella Smith, PhD Candidate: University of Massachusetts Amherst

Tracking Winter Flounder: Do current policies sufficiently protect reproductive populations?

When I was an education guide at the New England Aquarium in Boston, I developed a somewhat unusual specialty—explaining the history and ecosystem of Boston’s notoriously “dirty water.” I handed unsuspecting visitors (closed) jars of sewage sludge, talked about combined sewer overflows, and stood with visitors at the top floor window, motioning out across the waters to describe how changes in discharges from the wastewater treatment plant at the head of the harbor had helped to usher in major ecosystem shifts. In my undergraduate studies, I left that urban estuary for the pristine waters of Acadia National Park, ME and San Juan Islands, WA to study fish biology, ecology, and fisheries management. It was only fitting that Boston Harbor once again had my attention when I chose my dissertation research.

Forty years ago, this “(winter) flounder capital of the world” sustained commercial, recreational, and subsistence fisheries that provided a valuable food and economic resource. The harbor served as critical shallow-water habitat for winter flounder spawning and nursery ground for juveniles. Yet stressors such as pollution, overfishing, dredging, and warming waters coincided with decreases in winter flounder populations and potential changes in behavior in response to a changing habitat.



Katrina utilizing a beam trawl to sample Winter Flounder.

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Student Travel Award Winner Article: Katrina Zarrella Smith

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Fisheries managers have been challenged to implement actions that achieve sustainable populations while also balancing the competing socioeconomic needs of urbanized estuaries such as Boston Harbor. Despite long-term efforts to improve the habitat of the harbor and closures to human activity that may disrupt reproduction or juvenile survival in shallow water, the winter flounder population continues to decline.



Young-of-the-year Winter Flounder.

A barrier to the management of Winter Flounder populations is a lack of knowledge of the current spatial and temporal patterns of this Gulf of Maine fish, and this is where my research comes in. In collaboration with Massachusetts Division of Marine Fisheries, we are working to characterize behavior and habitat use of Winter Flounder in Boston Harbor, an estuary thought to host an important contingent of the Gulf of Maine stock. Winter Flounder have been historically reported as obligate estuarine spawners—specifically in the estuary in which it resided as a juvenile, i.e. its natal estuary. Yet, emerging evidence of population structure suggests different reproductive strategies and contingents are possible. Therefore, “targeted” habitat protections based on historical assumptions may be misaligned with current reproductive behavior and nursery habitat. Furthermore, population structure that is unaccounted for can introduce significant bias into calculations of life history parameters and subsequently result in poor management outcomes. My research seeks to address these outstanding issues.

Our methods in a snapshot:

- Over two years, we’ve attached acoustic telemetry tags to 150 adults in the harbor. We have a 50-receiver array in the harbor and can also collect detections from colleagues using arrays throughout the Northeast. This lets us know where reproductive-aged fish are, and when, over a three-year period.



Katrina with a tagged Winter Flounder.

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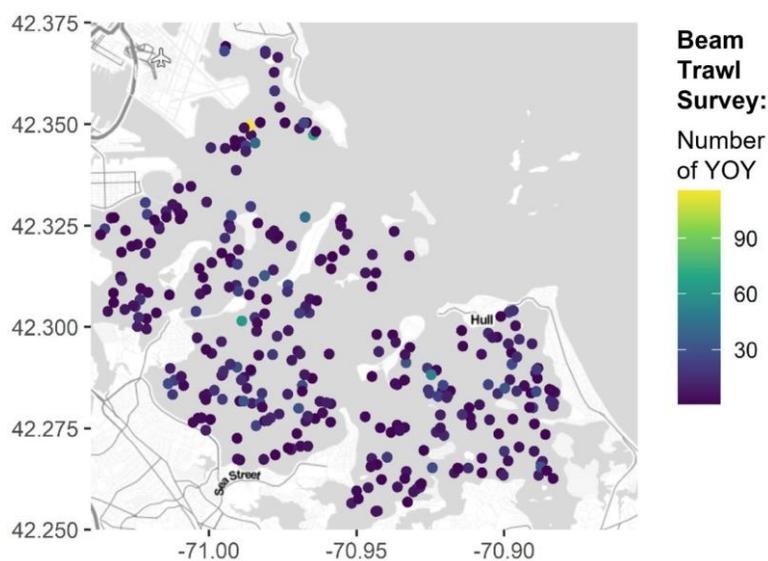
Student Travel Award Winner Article: Katrina Zarrella Smith

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- We are port sampling commercial catch to determine sex ratios, size, and maturity status of winter flounder caught in Massachusetts waters so that we can narrow down the peak spawning window(s).
- We are running a beam trawl survey July–October for three years to determine what Boston Harbor young-of-the-year (YOY) habitat use is, while collecting information on substrate, flora and fauna assemblages, and water quality at those sites. We'll be able to assess which habitat promotes survival but also determine natural mortality rates that will be useful in stock assessments.
- We're collecting YOY otoliths to age using daily increments to backtrack to hatch and ultimately estimated spawning dates to look for evidence of spawning by multiple contingents.
- We're collecting DNA from sampled fish to evaluate the genetic evidence for any postulated contingents.

Preliminary results:

- Some flounder appear to be estuarine resident, some have returned by the spring year over year, and some are ripe and running offshore, but spawning behavior is yet to be determined.
- YOY are ubiquitous in Boston Harbor, throughout the whole survey season. We hypothesize that larvae are advected in after a single spawning period.



Young-of-the-year Winter Flounder distribution in Boston Harbor.

Ultimately, I will build spatiotemporal models for winter flounder populations and identify essential habitat to inform when and where management closures should be implemented. My results will directly contribute to decision making for resource managers who are under pressure to use the best scientific data available to increase winter flounder populations while limiting impairment to activities such as dredging and construction. This is especially critical at this time because the rapid development of limited coastal shores and estuaries may cause irreversible depletion of population diversity residing in this habitat. Characterizations of shifts in reproductive behavior and population structuring will provide important insights into marine responses to rapid environmental changes. Furthermore, we will gain a better understanding of why current management measures are ineffective and highlight the flexibility and on-the-ground expertise required to meet the challenges of modern fisheries management in response to a rapidly changing environment.

Student Travel Award Winner Article: Stella Aanuoluwapo FATOMILOLA



Stella Aanuoluwapo FATOMILOLA, Undergraduate student (international): Federal University of Technology, Akure, Department of Fisheries and Aquaculture Technology; Ondo State, Nigeria

AFS Spokane meeting was well-organized and ran smoothly for me as a virtual conference. I was glad that the live streamed sessions and prerecorded sessions were accessible and didn't have any technical issues. It's always a good idea for conference organizers to consider the needs and preferences of their attendees and try to provide options for managing notifications or other aspects of the conference experience. Indeed the AFS Spokane meeting was able to effectively provide an amazing and positive virtual conference experience for me.

Speaking of what I learnt, I learnt a lot from the first plenary speaker in person of is Solomon David who presented a talk on modern conservation insights from ancient fishes. He spoke about the theme What Do Fish Mean To Me and basically what some of these fish meant to him, as well as about the diverse fishes and diverse voices and thinking about management and stewardship. I learnt that freshwater fish are important as food for over 200 million people. And the recreational fishery is also highly valuable. I really learnt a lot from on effective conservation of diverse fishes and good stewardship of natural resources instead of Improper management and improper disposal of our natural resources and I'm glad to make use of all I learnt here in my country.

Thanks,

Stella.



Student Travel Award Winner Article: Esther Ibukunoluwa FALONI

Esther Ibukunoluwa FALONI, Undergraduate student (international): Federal University of Technology, Akure, Department of Fisheries and Aquaculture Technology; Ondo State, Nigeria

Topic: Modern Conservation Insight from Ancient fishes

Speaker: Solomon R. David

Theme: What do fish mean to us?

According to Solomon R. David, he said stewardship means the caring for management i.e. caring about resource in any cases. He stated diverse fishes and diverse voice.

The concept of diverse is actually based on Biodiversity conservation management. While with diverse voice, it is a concept based on diversity equity inclusion representation and how diverse fishes (the two ideas) can help each other out by looking at more diverse fishes we can hear from more diverse voices. By hearing from more diverse voices, we can learn more about diversity of fishes on how to manage them or conserve them better.

To understand what fish mean to us, it is broadly viewed in 3 concepts/insights;

- Science
- Policy
- Future

Also, he stated that diversity of fishes in terms of freshwater are based on freshwater fishes and marine water fishes together, and they are about 35,000 species with all these diversity. It is impossible for any person to know all this species, that's why we need diverse fishes and diverse voices whether it comes to conservation or representation. Freshwater fishes serve as food for over 2million people and recreational fishery is valuable as well.

He also stated that ancient fishes can also be called twinge fossils, where they've been in existence along time in respect to dinosaur age.

Through the 3 concepts/insights viewed, he explained that;

Science: Rough Fish; Rough Fishes are generally fishes of less value e.g., brown fin paddle fish.

Policy: it deals with the idea of stewardship and management of fishes. The improper management and disposal of rough fishes is bad and wasteful use of natural resources.

Insight for the future: Diverse voice and diverse fishes (looking ahead).

I learnt a lot in the conference and through Solomon R. David, I have got to understand that by integrating diverse voices and diverse fishes we can reach out to the next generation and as well be a better stewardship of our natural resources.

Thanks,
Faloni Esther

Student Travel Award for Grand Rapids Meeting

2023 Estuaries Section Student Travel Award

The Estuaries Section of the American Fisheries Society (AFS) is pleased to offer financial awards to students in support of their attendance at the AFS 2023 Annual Meeting. The Section will award up to two students (one M.S. and one Ph.D.) attending the Grand Rapids meeting in person and one student attending virtually.

The award amount for the in-person attendees will be \$412. This is intended to cover the in-person early rate for a student member (\$375) as well as 2023 student membership dues for the Parent Society (\$30) and Estuaries Section (\$7).

The award amount for the virtual attendee will be \$277. This is intended to cover the virtual rate for a student member (\$240) as well as 2022 student membership dues for the Parent Society (\$25) and Estuaries Section (\$7).

Priority will be given to students who are presenting their own research at the conference, are AFS Estuaries Section members, and have a demonstrated financial need.

Application Procedures

Interested students must submit:

1. Curriculum Vitae
2. Letter of application (1 page) describing:
 - a. Educational and professional background, including involvement with AFS
 - b. Description of research and how it will be presented at the meeting (or if not presenting, how their research will benefit from attending the meeting)
 - c. Description of the relevance of the research work to the mission of the Estuaries Section
 - d. Interest in pursuing a career related to the goals of the Estuaries Section.
<https://estuaries.fisheries.org/2021/11/01/welcome/>
 - e. Statement of financial need.
 - f. The letter must include all contact information including mailing address, telephone number(s) and e-mail address.
3. Brief email of advocacy from a supervisor, an academic advisor, or other appropriate faculty member at the student's college or university. This letter should state:
 - a. Why the student deserves the award
 - b. Corroborate the need for the award

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Student Travel Award for Grand Rapids Meeting

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Complete application packages (in a single PDF document) should be sent via email with “Estuaries Section Student Travel Award Application” as the title to: John Mohan (jmohan@une.edu). Questions may be directed to John Mohan (jmohan@une.edu) or Justin Stevens (justin.stevens@maine.edu).

Applications must be received no later than 5:00 PM Eastern Time on Sunday **April 30, 2023**.

Selection Procedures

All applications received by the deadline on April 30, 2023 are reviewed by a committee representing the Executive Committee of the Estuaries Section. The applications will be judged on the relevance of the research work to the mission of the Estuaries Section, the student’s involvement with AFS, how the student’s career goals align with the goals of the Estuaries Section, and financial need.

Awards and Notification

Those selected for awards will be notified by telephone or e-mail no later than **June 15, 2023**. Once notified, if you are giving a talk, please submit the abstract and time information to John Mohan (jmohan@une.edu) so we can promote your work.

To help alleviate some of the upfront costs for awardees, the Estuaries Section may send your check prior to the conference. For this to occur, two things are required: (1) a letter stating that you, the student, need the money prior to the conference and that you, the student, will reimburse the Estuaries section in full if you do not attend the conference for any reason signed by yourself and your major advisor; and (2) the student must submit proof of payment of the registration fee for AFS.

The awardees will be recognized at the Estuaries Section business meeting (exact time and venue TBD). The awardees will also be asked to write an article about their research for publication in the Estuaries Section newsletter. Awardees will also be asked to serve on a future travel award selection committee.

Announcements

2023 Estuaries Elections

- 2023 is an election year for the Estuaries Section
- The positions of President Elect, Secretary, and Treasurer will have elections held prior to the 2023 AFS annual meeting
- If you are interested in running for one of these positions or would like more information about these positions please contact Estuaries Section President, John Mohan (jmohan@une.edu).
- We request that nominations for these positions be received by the end of May 2023

Upcoming Meetings in 2023



**LATIN AMERICA
CARIBBEAN &
FISHERIES
CONGRESS 2023**

**CONGRESO
LATINOAMERICANO Y DEL CARIBE
DE PESQUERIAS**

**Cancun Convention Center,
Cancun, Mexico
cancuncenter.com**



*¡Aparta la Fecha!
Save The Date!*

Mayo/May 15-18, 2023



lacfc.fisheries.org

Vinculando la conservación y las ciencias pesqueras en América y el Caribe

Convocamos a los interesados en la ciencia, gestión y conservación de pesquerías en América Latina y el Caribe para que participen en este importante evento. Se abordarán los sistemas marinos y dulceacuícolas, e incluirán presentaciones orales y en cartel, cursos de capacitación, eventos para estudiantes y mucho más

Bridging Fish, Fisheries Science, and Conservation Across the Americas

We welcome all people interested in fisheries science, management and conservation throughout Latin America and the Caribbean to join us for this important event. The Congress will address freshwater and marine systems and include traditional science presentations, training opportunities, student events and much more.



AMERICAN FISHERIES SOCIETY
153rd Annual Meeting
 AUGUST 20-24, 2023 | GRAND RAPIDS, MICHIGAN

Estuaries Section Treasurer's Report

respectfully submitted on 03/21/2023 by
Dr. Konstantine J. Rountos (Treasurer)

Date	Balance	Credit	Debit	Note
10/31/22	3,467.52			Treasurer's Report (Fall 2022 Estuaries Section Newsletter)
11/17/22	3,217.52		250.00	50% contribution for food/beverage for MFS & Estuaries Section Business meeting at the 2022 AFS Spokane
12/15/22	4,345.52	1128.00		ACH deposit (2021 Estuaries Section dues)
12/28/22	4,095.52		250.00	Invoice 10231: \$250.00 donation to the Latin America and Caribbean Fisheries Congress
12/28/22	3,933.52		162.00	Invoice FY2023-67073 (Student AFS memberships for 2022 Spokane travel award winners)
03/21/23	3,933.52			Current balance

Update: FORM 990-N (e-Postcard) has been submitted to the IRS for Tax Year 2022 on 02/06/2023. Filing status = Accepted.

Check us out online!

Website: <http://estuaries.fisheries.org>

Twitter: [@Estuaries_AFS](https://twitter.com/Estuaries_AFS)

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

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

