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AFS Estuaries Section News Spring 2022

In this issue:

President's Message.....	2
Student Travel Award Winner Article.....	3
Student Travel Award Announcement.....	6
Perspectives from Past Presidents.....	8
Sponsored Symposium	10
Treasurer's Report.....	11

President's Message

Dear AFS Estuaries membership,

One of the many benefits in my role as an assistant professor is being a teacher. Given the diverse membership in the Estuaries Section, including state and federal biologists/scientists, academics, members of nonprofit organizations, or employees in scientific industry, we all have opportunities to teach. For some of us our jobs involve training students, both undergraduate and graduate. For others, supervising employees or interacting with the public is the method you act as teachers. Sharing your individual knowledge and expertise with others, whether they are young or old, makes us all teachers responsible for mentoring and motivating. I encourage all members of the Estuaries Section to use their expertise in fisheries science to educate others, as education is a pathway to advancing conservation. For those older members, take time and listen to the younger members in AFS and we can learn a lot from the next generation of AFS leaders.

As we enter spring and just celebrated Earth Day, please take some time to disconnect from your computer, the endless emails, news cycles and internet. Spend time in your favorite local estuary, appreciate the natural beauty these systems provide. Reignite your passion for why you continue your membership in AFS and the Estuaries Section.

Please enjoy this Spring 2022 newsletter with research highlights from our second student travel award winner Jeff Plumlee. As the Annual meeting in Spokane approaches, our Estuaries Section is planning to host a remote business meeting to expand participation and accessibility of our members and meet with the Marine Fisheries Section as is tradition. For those planning to attend Spokane in person, we will organize a happy hour get together to enjoy each other's company. More details to follow soon!

AFS Estuaries Section President
John Mohan



Student Travel Award Winner

Article: Jeff Plumlee

Jeff Plumlee, PhD student: University of North Carolina at Chapel Hill

Assessing the Catchability of Predators in the Presence of Prey using Experimental Gillnets in a Temperate Estuary

Fisheries-independent surveys are categorized by the use of either active or passive fishing gears with the goal of making relevant comparisons across time and space while also recognizing gear-specific biases. As a graduate student that relies on the data collected from fisheries-independent surveys to be reliable and interpretable, understanding the specific biases involved with the sampling is equally important to the data itself. Gear specifications in fisheries-independent sampling typically allow scientists and fishery managers to

assume equal species-specific catchability across a similar time and space when using identical fishing gear. In the case of multi-panel experimental gillnets that are widely used in estuaries, this is potentially confounded by species-specific catchability that fluctuates with the accumulated catch rates of concurrently caught prey species that may increase the catchability of co-occurring scavengers and predators. As the species I am primarily focused on during my dissertation are large mobile estuarine predators, fluctuating catchability could create misinterpretation of data from multiple unique sampling events with experimental gillnets.

It is for these reasons in particular, I developed a series of mensurative and manipulative studies to examine if 1) gillnets with prey in them change the community of fish that they sample and 2) if the presence of prey is more important than other habitat or environmental variables. To answer my first question, I deployed baited large mesh experimental gillnets concurrently with unbaited nets approximately 100 – 300 m apart in a North Carolina estuary across seagrass, oyster reef, and bare sand/mud habitat. I baited half of the gillnets with commonly occurring bait fish and left the other nets empty. All of my nets were set adjacent to two estuarine marsh complexes. For my second question, I used boosted regression tree modeling on data gathered by the North Carolina Department of Marine Fisheries estuarine gillnet sampling program. With the boosted regression trees, I was able to rank and compare different environmental (salinity, temperature), habitat, and prey abundance covariates for seven commonly occurring estuarine predators to determine exactly how important prey abundance is compared to other habitat components.

Continued on Page 4



UNC graduate student Jeff Plumlee and research technician Savannah Swinea untangle a blacknose shark (*Carcharhinus acronotus*) from a gillnet.

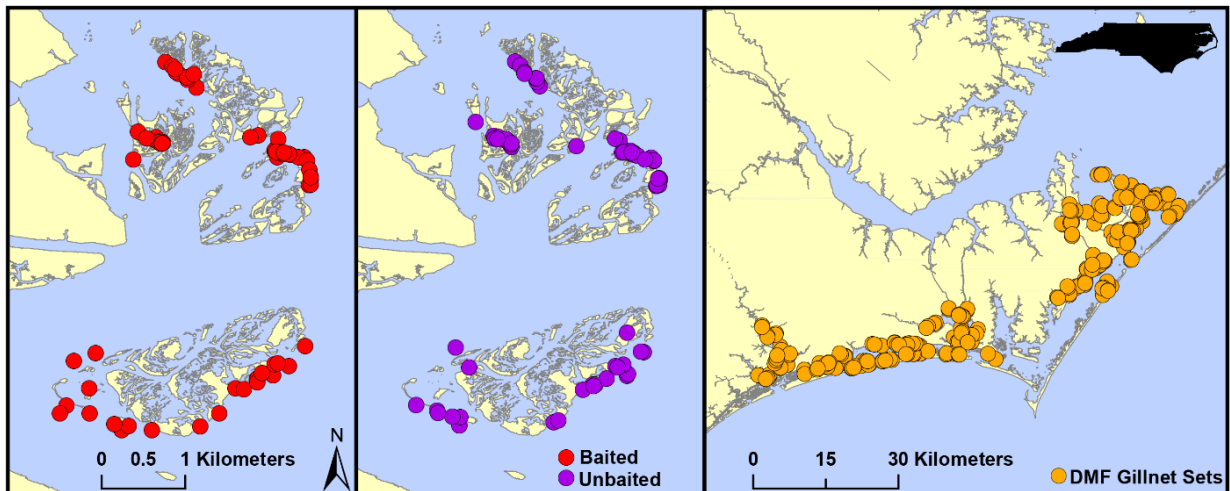
Student Travel Award Winner Article: Jeff Plumlee

Continued from page 4

Surprisingly to me, I found that the community composition of fish collected in baited gillnets was not statistically different than the unbaited gillnet treatments, however species richness was. Species richness was consistently higher in baited gillnets regardless of what habitat I soaked the nets in or how long I soaked them, although this result was driven by species that were only caught once. Habitat was equally unimportant using the Department of Marine Fisheries data, where benthic habitat covariates was always less important than concurrently caught prey species covariates. Combined, these results may indicate that the catchability of estuarine predators in experimental gillnets may be positively altered by the amount

Bait strung on tuna clip tethers ready to go prior to being attached to the baited gillnets before deployment.

of prey concurrently caught in the same net. Future research to improve the models might include integration of environmental factors, development of an auto-regressive model, and finally the exploration of juvenile recruitment, indicated by BCS catch, and seagrass availability.



Map of sampling area. Red dots indicate baited sampling events ($n = 80$), purple dots indicate unbaited sampling events ($n = 78$). Individual baited and unbaited nets were set in a paired sampling design, being set and retrieved at the same time. Orange dots indicate samples collected by the Department of Marine Fisheries (DMF) annual gillnet surveys ($n = 268$) used in the predictive boosted regression tree (BRT) modeling.

Continued on Page 5

Student Travel Award Winner Article: Jeff Plumlee



UNC undergraduate student Ellie Kremer shows off a “fishmas” ornament used to attached bait to the baited gillnets during sampling.

Continued from page 4

I do not believe that these results mean that experimental gillnets are not useful for sampling estuarine fish assemblages. I found a high amount of agreement between my results and the published environmental drivers of estuarine fish communities, namely the importance of temperature and salinity. In my models, temperature and salinity which were by far the most important variables driving the catch rates of all of the estuarine predators. It appears that the potential increase in catchability varies over much smaller scales, i.e., patchy benthic estuarine habitats, which were outshined by the presence of bait in both our manipulative experiments and mensurative observations.

One simple solution I have posed, is to not catch predators concurrently with prey. Single panel nets, sized to be selective, may create more accurate habitat specific abundance measurements of individual species than multi-panel nets. Additionally, if nets are set for short periods of time to reduce overall catch mortality there may be subsequent benefits in the form of reducing the amount of time fish can be attracted into the net from outside the intended sampling area. Although these results are far from conclusive, they do indicate the potential for further investigation. I am planning some future work that I feel should be done to measure the amount of depredation that occurs in a net using real time observations. I believe future work is needed to generate species specific correction factors in catchability, with the hopes of preserving and enhancing some of the most valuable largest long-term datasets currently collected on estuarine fish that use experimental gillnets.

Student Travel Award for Spokane Meeting

2022 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 2022 Annual Meeting. There will be two categories for awards this year. The Section will award up to two students attending the Spokane, WA meeting in person and two students attending virtually.

The award amount for the in-person attendees will be \$400.00. This is intended to cover the in-person early rate for a student member (\$360) as well as 2022 student membership dues for the Parent Society (\$25) and Estuaries Section (\$7).

The award amount for the virtual attendee will be \$275.00. 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

Continued on Page 7

Student Travel Award for Spokane Meeting

Continued from Page 6

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 Catherine Johnston (ckjohnston80@gmail.com).

Applications must be received no later than 5:00 PM Eastern Time on Monday May 9, 2022.

Selection Procedures

All applications received by the deadline on May 9, 2022 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, 2022. 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.



Perspectives from Past Presidents: Syma Ebbin, Section President 2005-2006

Navigating the AFS and Estuaries Section Through a Course Change

I first met Dr. Linda Bireley, Chief Scientist of what was then the Millstone Power Station Environmental Lab at a local fisheries conference in early 2003 at which I had presented my doctoral research on salmon co-management in Alaska and the Pacific Northwest. Linda reached out to me asking if I would like to run for President-elect of the AFS Estuaries section I agreed and later that year, I was elected to that two-year position, followed by two years as Section President and two as Past-President. I remained closely involved in the Ex-Comm for a few additional years.

My time leading this Section was really my introduction to the American Fisheries Society as a whole. I served on the Governing Board and helped steer a course for the Society as a whole. It turned out to be a pivotal time for both Estuaries and AFS. I served first with Estuaries President Steve Jordan, EPA Chief of the Gulf Ecology Division, Section Secretary Kurt Kline, Treasurer Lee Benaka and Past President Linda Bireley. We met frequently by conference call to organize the Section Business meetings at the annual AFS meetings, first in Quebec City, then Madison Wisconsin, Anchorage Alaska, Lake Placid, NY, San Francisco, CA and then Ottawa, Ontario.

At the time, the Estuaries Section organized joint meetings with the Marine Fisheries Section and I became good friends with my Marine Fisheries compatriot Deb Murie, a professor at the University of Florida. With lots of doubly affiliated members, joint meetings helped ensure a quorum and generated funds for refreshments and more fun. We worked with Tom Bigford at NOAA to evaluate the submissions for the Dr. Nancy Foster Habitat Conservation Award created by NOAA in 1997. We shared our annual Section meeting as the venue to announce and present this prestigious award to the honored recipient.

I took over the presidency of the Section in 2005 in Anchorage – at that time, the largest AFS meeting ever, with over 2700 attendees. During my tenure leading the Estuaries Section, I worked with AFS Executive Director Gus Rassam to assess the market niche and need for a new open access AFS journal – one focused on coastal and marine environments. The Society had a divide, real or

Continued on page 9

Perspectives from Past Presidents: Syma Ebbin, Section President 2005-2006



Continued from Page 8

imagined, which separated freshwater folks from the saltier among us who worked and researched in marine and coastal habitats. Finally, at the Lake Placid Governing Board meeting, I was able to make a motion to launch the new Marine and Coastal Fisheries: Dynamics, Management and Ecosystem Science journal. There was discussion and dissent from the Governing Board members, but in the end, my motion prevailed and the new journal was set afloat. I served as a Subject Editor for ten years and serve now as Associate Editor. The journal publishes peer reviewed natural and social science

articles focused on coastal, marine and estuarine fisheries, providing a prestigious, open access outlet for fisheries scientists all over the world. The Estuaries Section was integrally involved in the creation of this journal and remain involved in its successful implementation.

Syma Ebbin (she, her)
AFS Estuaries Section President 2005-2006
Associate Professor in Residence, University of Connecticut
Dept. of Agricultural and Resource Economics and Maritime
Studies Program
Research Coordinator, Connecticut Sea Grant
EcoHusky Club Advisor



Estuaries Section Sponsored Symposium 152nd Annual Meeting in Spokane, WA



152nd ANNUAL MEETING
Spokane
AUGUST 21-25, 2022

Bringing New Perspective to Marine and Estuarine Fisheries

Supported by: AFS Marine Fisheries Section, AFS Estuaries Section, and The Living Marine Resources Cooperative Science Center

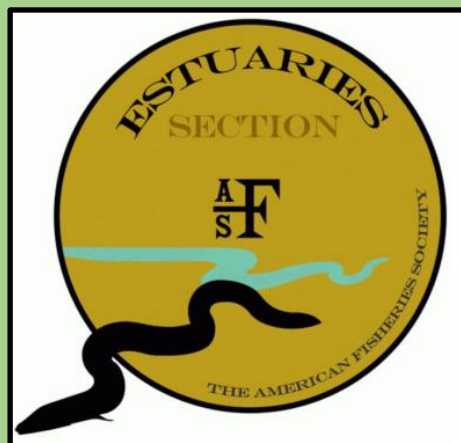
Primary Organizer: Jessica Miller,
Jessica.Miller@oregonstate.edu

Management of marine and estuarine fish and fisheries under a changing climate requires innovative technologies and new perspectives. Our ability to conserve and manage living marine resources depends on understanding the consequences of marine heat waves, declining ocean pH, increasing hypoxia, and eutrophication, among other stressors, at organismal, population, and ecosystem levels. Research collaborations between academic and agency scientists can promote novelty as well as provide valuable student training opportunities. Furthermore, citizen science programs can enhance these collaborations by involving the public and expanding educational opportunities. This symposium will focus on collaborative research that advances our understanding and management of marine and estuarine fisheries and the habitats that supports them. The Symposium is sponsored by AFS's Marine Fisheries and Estuaries Sections and National Oceanic and Atmospheric Administration's Living Marine Resources Cooperative Science Center, which was established to broaden workforce participation by training graduate students to conduct innovative and collaborative research.

Estuaries Section Treasurer's Report

respectfully submitted on 04/27/2022 by
Dr. Konstantine J. Rountos (Treasurer)

Date	Balance	Credit	Debit	Note
01/09/22	4,667.52			Estuaries Section Winter 2022 Newsletter
04/01/22	4,667.52			Estuaries Section ExCom Meeting Minutes
04/27/21	4,667.52			Current balance



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>