



The Northeast Fish Rapper

Newsletter of the Northeastern Division of the American Fisheries Society



President's Message

Heather Stewart

Thank you! Merci! Gracias! Mahalo! Thank you for your involvement in and commitment to AFS. You are why AFS is the leading professional society in fisheries and management. Thank you for taking a chance and electing a graduate student in Quebec as Vice President of the Northeastern Division. It has been a privilege to serve our Division and represent you over the past three years. I may be the first President to serve the NED from the Virgin Islands and Florida, but that is the life of an early career professional. As an active member of AFS for the past 12 years, and now having been a member of every Division, I feel qualified to say that the NED is my favorite Division and holds a special place in my heart.

As NED President, I have filled all our committees and Division representative positions, many of which have long been empty. Half of those positions are now held by passionate students and early career professionals. With the help of our new Archives Committee Chair, we have been transitioning from locally stored files to a cloud database. This migration, as well as increased communication with Past Presidents, aids in preserving our legacy and retaining institutional knowledge while we move forward together in a positive way.



We have been working with AFS staff to transition our website to a new format which will increase flexibility for designing and editing. Additionally, we recently held a contest to update the our logo and integrate the new AFS design. We are lucky to have multiple options to choose from. Keep an eye on your inbox to vote for your favorite design, which we plan to debut ahead of our Annual Meeting!

To increase communication and connection between the Chapters, the Division, and the Society, Chapter Presidents and our NED representative from the Student and Early Career Professionals Subsection of the Education Section have been joining the NED Executive Committee meetings. This restructuring of our meetings led to the development of an unprecedented student travel award supported by each Chapter and the Division to increase

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participation at the AFS Annual Meeting in Honolulu, Hawaii. Interested students can find more information about the Northeastern Division Aloha Student Travel Award on our updated [website](#).

On the Governing Board and Management Committee, I have been advocating for increased equity, inclusion, and accessibility, from membership fees and journal access, to meeting locations (an annual meeting in Canada), travel awards, meeting accommodations, and the inclusion of communities where meetings occur (e.g., free participation for local HBCUs, fieldtrips to local research facilities or hatcheries with reciprocal conference registration to hosts). We are still working to revive our NED Diversity, Equity, Inclusion, Justice, and Accessibility (DEIJA) discussions. Please reach out if you are interested in being part of this process.

After two years of working with AFS staff, we still lack the necessary support in Canada to host the AFS Annual Meeting, but we hope we can strengthen our connections and return to Canada soon. That hope is shared with AFS leadership and to show their support, AFS President Cecil Jennings and Second Vice President Margaret Murphy joined us at our 2023 NED Annual Meeting with the Atlantic International Chapter in Saint John, New Brunswick, Canada. Keeping with the theme of New Brunswick, our 2024 NED Annual Meeting will be with the Mid-Atlantic Chapter October 27-29, 2024, in New Brunswick, New Jersey. Details can be found at [here](#). We are also excited to announce that the NED will be hosting the 2027 AFS Annual Meeting in Pittsburgh, Pennsylvania!

It has been incredibly fulfilling to serve our Division, and I encourage you all to explore leadership and volunteer positions within AFS. We are currently looking for nominations for NED Secretary-Treasurer and Vice President. Position descriptions can be found in our [procedures manual](#) here. Please email nominations to ned.fisheries@gmail.com by June 15th. Together, we can take AFS to the next level. I look forward to seeing you at our future meetings. Thank you once again.

Charrs,

Heather

Meet the rest of the NED officers!

President-Elect



Andrew Bade
Connecticut DEEP

Vice President



Kathryn Collet
New Brunswick DNRED

Secretary Treasurer



Rich Bell
The Nature Conservancy

Past President



Susan Cushman
Hobart and William Smith Colleges

UPCOMING MEETINGS

[Society of Freshwater Sciences](#)

June 2-9, 2024

Philadelphia, Pennsylvania

[Aquaponics Workshop](#)

June 24-28, 2024

Salem, Massachusetts (see page 15)

[Pennsylvania Chapter Summer Social](#)

July 20, 2024

Raystown Field Station

Hesston, Pennsylvania

[154th AFS Annual Meeting](#)

September 15-19, 2024

Honolulu, Hawaii

[MAC-NED Joint Meeting](#)

October 27-29, 2024

New Brunswick, New Jersey

[18th Flatfish Biology Conference](#)

November 13-14, 2024

Westbrook, Connecticut

Highlights from the AIC/NED Joint Meeting

October 2023
Saint John, New Brunswick



Heather Stewart

Continuing our tradition of rotating Northeastern Division Annual Meetings with our Chapters, in October 2023, we held a joint meeting with the Atlantic International Chapter in Saint John, New Brunswick, Canada. AFS President Cecil Jennings, Second Vice President and Past NED President (2005-2006) Margaret Murphy, and Past NED President John Magee (2018-2019) joined us in person while Past NED Presidents Scott Decker (2007-2008), Jud Kratzer (2019-2020), Patrick Shirey (2021-2022), Ron Essig (2003-2004), and John Cooper (2014-2015) joined online.

I want to thank the Planning Committee for all their hard work organizing a wonderful conference with **impressive student engagement**. By the end of the meeting, we had filled half of our empty committees. As with all meetings, these are excellent opportunities to share ideas, develop collaborations, form new friendships, and stay current on the most recent research. We may have found a new tradition with the axe throwing karaoke social.



AFS President Cecil Jennings and NED Archives Committee Chair and Soggy Boot awardee Deborah Alademehin



Group photo at the AIC NED joint Annual Meeting in Saint John, New Brunswick



Planning committee (left to right) AIC President Russell Easy, Local Arrangements Committee Chair Kathryn Collet, NED President Heather Stewart, NED Past President Susan Cushman, AIC Vice President Tyson Morrill, AIC Secretary Treasurer Scott Pavey

Thank you to our meeting sponsors!

<p>Platinum</p> 	<p>Gold</p> 	
  	  	
<p>Silver</p> 	<p>Bronze</p> 	<p>With additional support from the UNH, UMaine, Quebec, and UNE AFS Student Subunits</p>
<p>And members like you!</p>		



AIC NED axe throwing karaoke social

2023 NED AWARD WINNERS

The Dwight A. Webster Memorial Award

Eric Hutchins

Marine Habitat Restoration Specialist with the NOAA National Marine Fisheries Service in Gloucester, MA.

Eric has over 30 years of service at NOAA National Marine Fisheries Service and has led over 130 habitat restoration projects. He is known for merging fisheries research with reality to facilitate win-win situations where both land stakeholders and diadromous fish populations benefit. He has facilitated dam removals to open over 500 miles of streams and rivers in the Gulf of Maine and has mentored others to feel confident to tackle landscape-scale environmental problems. Eric has made countless impacts on fish passage projects and collaborations with multiple different agencies and has implemented an underwater camera fish passage monitoring system to broaden his outreach to all 50 states and 58 different countries.



President's Award

Jud Kratzer

Fisheries Biologist with the Vermont Fish and Wildlife Department

Jud was our steadfast leader who helped the NED navigate the COVID pandemic and was a pillar of support. Jud is also a vocal advocate for promoting society membership. Professionally, Jud has spent the past 10 years developing and implementing methods for adding wood to streams to diversify habitat for brook trout and other salmonids



Special Achievement Award

New York Chapter Women in Fisheries Subcommittee

Founded by

**Stacy Furgal, Jo Johnson, and
Megan Kocher**

This subcommittee was formed in the midst of the COVID pandemic and membership has grown substantially. They held social and professional networking events, fly fishing expos, and began a mentor program. The founders of this group serve as incredible role models for the next generation of women in fisheries sciences and management, and to the rest of us who have been positively influenced by their inclusivity, enthusiasm, and optimism for making our profession and our world better.



John Moring Student Travel Award

Michael Nguyen

University of New England

Michael was previously involved with Stockton University AFS student subunit and brought his excitement and experience to help engage University of New England (UNE) students and established the UNE AFS Student Subunit. He organized guest speakers, career panels, fish identification workshops, and AFS history trivia events. Michael has mentored undergraduate students and inspired them to be committed to their research. Michael helped cultivate a culture of respecting fish through proper identification and handling and is an inspirational leader to the undergrads. Michael is now serving as the NED webmaster

Nate Hermann

University of New Hampshire

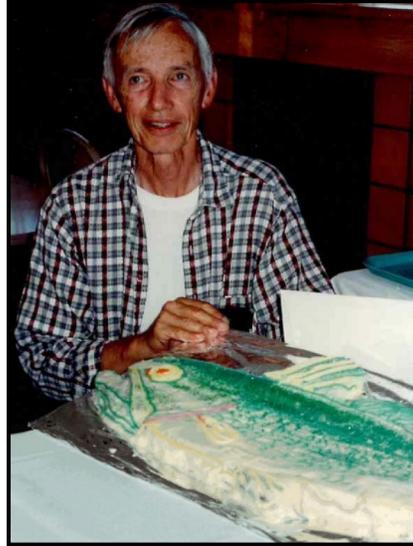
Nate is the President of the UNH Student Subunit and has been an active in AFS throughout his time in graduate school which includes serving on the AIC executive committee. His PhD research aims to identify the impacts of climate-driven range shifts on trophic interactions in marine systems



Walking Stick Award

John Forney

The Walking Stick Award was initiated in 2002 to recognize the Division member with the longest standing membership record. The recipient receives a walking stick that was hand carved by Dr. Robert Carline to hold for a period of three years. At the end of three years, the walking stick is passed on to the next member with the longest standing membership. The first recipient of this award was Dr. Edwin Cooper (PA) who joined AFS in 1940. The walking stick was given to John Forney of New York in 2023. John has been a member of AFS for 70 years, having joined in 1953. Unfortunately, John passed away at the end of January, but he will live on in our memory and in the lives that he touched. A memoriam [piece](#) in John's honor was published in Fisheries Magazine in February.



Nominate your colleagues for the 2024 Northeastern Division Awards

Nominations due September 23, 2024

More information [here](#)



- 2024 Joint Annual Meeting -
**Infrastructure &
Fisheries Interactions**

October 27-29, 2024
New Brunswick, New Jersey

Visit mid-atlantic.fisheries.org
for details



Mid-Atlantic Chapter

Northeastern Division

CHAPTER UPDATES

Pennsylvania Chapter

Clayton Good

The Pennsylvania Chapter held our annual spring technical meeting in Meadville, PA on February 8-9 hosted by the Allegheny College Watershed Conservation Research Center. We could not have asked for a better location to discuss our theme of Biodiversity and Human Dimensions than along French Creek, a tributary to the Allegheny River that supports the most biodiverse assemblage of aquatic life in the state. There were 120 attendees over the two day conference, including ~40 students representing 12 academic institutions. Day 1 included a plenary talk by Dr. Stuart Welsh with the West Virginia Cooperative Fish and Wildlife Research Unit, West Virginia University. His talk gave an overview of his recent publication *Hornyheads, Madtoms, and Darters: Narratives on Central Appalachian Fishes* and included a video highlight of unique smoke screen feeding behavior of a Northern pike, *Esox lucius*, that he rec-



2024 Cooper Award and Best Student Podium Presentation Award Winner Bridget Reheard with PA Chapter President Clayton Good



orded while ice fishing with his son. Dr. Welsh's book is a must have for all fish enthusiasts, providing technical descriptions and observations in a very readable format. We had a packed agenda that included 15 professional podium presentations, 3 student podium presentations as well as an evening poster social with 20 student and professional posters. Day 2 consisted of three professional workshops on freshwater mussel identification from the Ohio River basin, identification of central Appalachian darters, and geospatial operations in R. We greatly appreciate all of our meeting sponsors, presenters, workshop facilitators, Allegheny College staff and PA AFS Excomm members who all contributed to an excellent meeting.

Our 2024 Cooper Award Winner was Bridget Reheard from Penn State University. She received a certificate and \$500 to further her research. Bridget was also awarded the top student podium presentation for

her talk on “Evaluation of shale gas development and wastewater spills as drivers of biological changes in second-order streams in northcentral Pennsylvania”. The Chapter gave student awards to the top three student podium and poster presentations totaling \$1200 in cash awards.

Also, on November 9th, 2023 we hosted an evening online Q&A session for career development and higher education aimed at current college students in the fisheries profession. Panelists were PA AFS officers representing various professional backgrounds, state agencies, academia, and the private sector.

We are currently planning our next chapter meeting and summer social to be held at the Raystown Field Station on Raystown Lake on July 20th, 2024.



Southern New England Chapter

Corinne Truesdale

The Southern New England Chapter of the American Fisheries Society hosted its annual winter meeting at the University of Connecticut, Storrs campus, on January 9, 2024. The meeting consisted of a full day of oral presentations

and an afternoon poster session. A total of 96 people attended, and we are delighted that 28 of these attendees were current students and many were first-time SNEC meeting attendees. From among the impressive presentations and posters submitted by students, Michael Burgess (University of Connecticut) was awarded the Saul B. Saila Best Student Paper Award and Max Ajemian (Roger Williams University) was selected for the Grace Klein-MacPhee Best Student Poster Award. As summer approaches, we are beginning to plan for the summer research meeting with intention of hosting it in Rhode Island.



Attendees of the SNEC winter science meeting at UConn–Storrs



Student paper award winner Michael Burgess presents his research at the SNEC winter meeting

As always, we are looking for ways to reach more local academic institutions and would like to engage students from colleges that have not historically participated in SNEC.

This year has seen a few changes in committee leadership for SNEC. Karina Mrakovcich stepped down as the Education Committee chair after 24 years of service. We thank her for her leadership through many student award seasons and welcome Tracy Maynard to the role! We also welcome Owen Nichols to the Professionalism Committee chair role.

SUNY-ESF Chapter

Matthew Norvilitis

After another great year, the SUNY College of Environmental Science and Forestry (ESF) chapter looked to continue its success entering the 2023-24 academic year. Building from the foundations of past presidents Conner Grant and Jack Marshall, the ESF Chapter continued its dedication to professional development through weekly educational meetings, sampling workshops, trips to the field and more! The primary goal of the 2023-24 academic year was to enhance members' fisheries experience by presenting skill building workshops for our members to ensure that they are

prepared to successfully enter the field.

We started early this fall, hosting a cleanup of Onondaga creek in conjunction with the Syracuse Creek rats, a local group dedicated to the conservation and restoration of Onondaga creek during freshman orientation week. In one day we revitalized a large riparian zone along the creek's banks. Only a few weeks later, students traveled to Onondaga Lake to try their hand at retrieving trap nets set by the Onondaga Lake Biomonitoring Crew as a portion of their monthly lake recovery surveys. Stu-



Students preparing to spawn male Chinook Salmon at the NYSDEC Salmon River Hatchery in October

dents were able to haul in and process a trap net, as well as learn proper fish handling technique and field data collection along the way.

The following week, students traveled to Heiberg Memorial Forest, an ESF satellite campus, to learn another important sampling technique: backpack electroshocking! Dry Creek is a stream isolated within the forest home to native populations of the New York state fish, Brook Trout. Students caught, recorded and admired some of the coolest fish in the state within their indigenous ecosystem! Two weeks later, students headed to the NYSDEC Salmon River Fish Hatchery to learn how to culture salmon. Thanks to the

**AMERICAN
FISHERIES
SOCIETY**



SUNY ESF

help of the hatchery culturists, students experienced all parts of the spawning process: gathering the fish from the raceway, fertilizing the eggs and cleaning up the resulting mess. Students got real hands-on with Chinook Salmon and learned valuable new skills

Finally, to complete our major events for the fall semester, our group had an overnight event at ESF's Newcomb campus in the heart of the Adirondacks. There, students were able to trap-net on their own and see what was living within some of ESF's very own ponds while contributing to a long standing data-set. The answer was a lot of Brown Bullhead; in total students handled and counted over two thousand bullhead and four big beautiful Brook Trout. In two short months members handled a diverse array of species, learned a variety of techniques and explored our school's often unappreciated properties.

Our spring semester started even before our classes! One week before the semester began, we set out for Maine to attend the Atlantic Salmon Ecosystem Forum, hosted in Orono by the University of Maine. Since there isn't much hands-on fisheries work to be done in the winter, students instead took



Chapter member Laruen Roberts with the largest Brook Trout we caught trap-netting at Arbutus Lake, at the ESF Newcomb Campus



Officers from ESF's TWS and AFS Chapter who planned the EFB Department's professional mixer

some time to network and learn about novel ecosystems. Overall, even though the event had a day canceled due to inclement weather, the students had a great time, met some great people and got to experience a new place with new perspectives. A little more than a month later, students attended another conference. This time students didn't have to travel so far, as we attended the annual New York Chapter AFS meeting in Cooperstown. We had a great presence, with three students giving poster presentations and three other students giving oral presentations at the conference! There was a great show out for all the ESF students presenting and this was a great opportunity to connect with other students and professionals in our region.

The offseason was truly filled with networking for our chapter as the next event AFS hosted on campus was our second annual professional mixer, in conjunction with ESF's Wildlife Society Student Chapter, Career Services office and funding from the Alumni Association. Students got

to meet with professionals and vice versa, with over 100 students and professionals in attendance. At the time of this writing, that was our last major event, however we have plans to host another backpack electroshocking workshop alongside an M.S. student at Heiberg Memorial Forest to sample more of the stream and gather data on native Brook Trout for their thesis. We also hope to tour and volunteer at the NYSDEC Oneida fish hatchery during the Wall-eye spawn. Our final planned event is a collaboration with the SUNY Cobleskill subunit for our second annual boat and backpack electroshocking workshop weekend on Otsego Lake!

Our student chapter, although only a group of ~25 active members, has been working hard to build on our successes and will continue to learn and grow for many years to come. Our main goal as a student chapter is to provide students with an environment that will give them experiences and memories that will transcend their time in school preparing them for a successful future in the field of fisheries. We have done, are doing, and will continue to do just that!

Mid-Atlantic Chapter

Audrey Ostroski

The Mid-Atlantic Chapter of the American Fisheries Society (MAC-AFS) held our 2023 Annual Meeting in Delaware at the Chase Center on the Wilmington Riverfront from November 16-17. The meeting was a big success with just over 100 people in attendance for a day and a half of amazing talks and informative poster presentations. We had 25 talks, 10 of which were given by students, on topics ranging from crustaceans to diadromous fishes to aquaculture. Some presentations were part of the “Wind Energy and Fisheries Interactions Symposium,” which consisted of five talks followed by a panel discussion on the critical topic for mid-Atlantic fisheries. There were 16 posters displayed during the poster session. The best student talk and poster awards went to Rutgers University PhD students Jackie Veatch and Hails Tanaka for their presentations on “marine grocery stores” and New Jersey juvenile Atlantic surf



Best student talk winner, Jackie Veatch (left), and best student poster winner, Hails Tanaka (right), stand with a MAC-AFS banner after receiving their awards at the 2023 Annual Meeting

clams, respectively. Other highlights of the meeting included the Mentor/Mentee Lunch hosted by Del Pez Mexican Gastropub and the silent auction. The lunch provided an opportunity to raise money for the Chapter as Del Pez donated 20% of the proceeds back to MAC-AFS and for students to interact with and ask questions of fisheries science professionals. The silent auction, featuring a highly sought-after black crappie fish mount, raised money to support student attendance at future meetings. MAC-AFS’s President (Johnny Moore) transitioned to Past President and a new President (Michael Acquafredda) and new President-Elect (Audrey Ostroski) were installed at the 2023 Annual Meeting. Our Treasurer (Rich Wong), Secretary (Allie Hoffman), and Member-At-Large (Kieth Dunton) remain the same. Lauren Cook of Rutgers University Student Subunit is the new Student Representative. MAC-AFS Student Subunits, Rutgers University and University of Delaware, were active this past year and hosted multiple social, educational, and professional development events. Check out their Fish Rapper

sections for more details. MAC-AFS will be hosting our 2024 Annual Meeting jointly with the Northeastern Division of the American Fisheries Society on October 27-29 at the Hyatt Regency in New Brunswick, New Jersey. This year's theme is "Infrastructure and Fisheries Interactions." Please follow us on Instagram ([@midatlantic.afs](#)) and Facebook ([Mid-Atlantic Chapter AFS](#)) and keep an eye on our [website](#) for MAC-AFS updates!

New York Chapter

Jessica Best

The 2024 annual meeting of the New York Chapter of the American Fisheries Society was held February 6-8 in charming Cooperstown, New York at the Otesaga Hotel, the chapter's third time meeting at this establishment. The theme of the meeting was "Fisheries Management in an Ever-Changing Environment: From Inlands to Oceans" and the event was a great success, with 290 people in attendance. The meeting



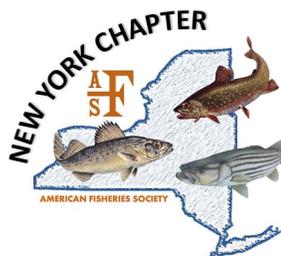
Left: Jaques Rinchard, Ellen Marsden, and Matt Futia. Ellen is receiving the Lifetime Achievement Award

Right: Steve Swenson awarding Tracy Brown and Trout Unlimited with The Conservationist of the Year Award



began with a highly attended all-day workshop given by Warren Leach from Oregon RFID titled "Design, Construction, and Operation of PIT Tag Monitoring Systems". Additionally, a shorter workshop was given by SUNY Cobleskill Instruction and Research Librarian Freya Gibbon regarding best practices for creating accessible documents and data.

The second day of the meeting kicked off with four distinguished plenary speakers: Margaret H. Murphy (AFS Second Vice President), Andrew Gascho-Landis, John M. Farrell, and Tony David. There was a total of 52 oral presentations given over the course of the meeting with seven symposia. There were 45 posters exhibited at the evening poster session, as well as a fun, fishy challenge set up by Doug Carlson to test the identification skills of attendees. After the delicious banquet that was served on the second night, numerous members were recognized with chapter awards. The well-deserved Professional Achievement Award was given to Ellen Marsden, and Tracy Brown accepted the Conservationist of the Year on behalf of Trout Unlimited for all their stellar efforts with conservation, outreach, and education. The Klumb-Spindler Travel award recipients this year were Anna O'Neill, Kate





Left: Chris Bowser and Eva Lagdamen. Eva received the Dave Bryson Memorial Scholarship Award

Below: Susan Cushman giving Stacy Furgal and Jo Johnson their NED Special Achievement Award for their work with the Women in Fisheries Subcommittee

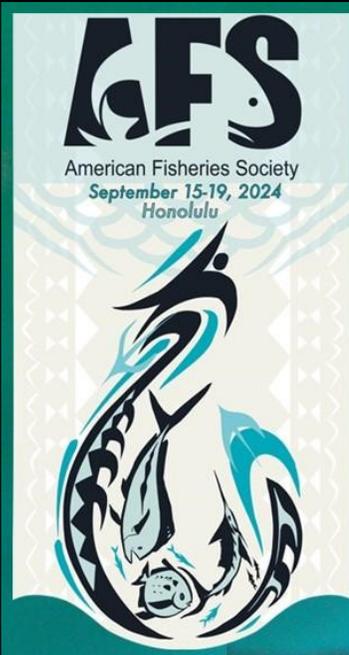


Riordan, Krystal Dixon, Amelia McReynolds. Mya Henry was awarded with the 2024 Diversity Travel Award and Ossining high school student, Eva Lagdamen, was awarded the Dave Bryson Memorial Scholarship Award.

For the first time, the inaugural Fin-tastic Science Blog Contribution Award was given to Doug Carlson for his contributions to the NYCAFS science blog. Going forward, the author of the Science Blog post with the most views in the calendar year will receive the Fin-tastic Science Blog Post-of-the-Year Award at the annual meeting. The banquet concluded with the annual raffle, supported by generous donations from sponsors and members, that brought in over \$4,200 which will help fund student travel awards in the subsequent year. In addition to bestowing awards on all the remarkable students, Susan Cushman presented Stacy Furgal and Jo Johnson with a special achievement award from the Northeast Division for their outstanding work founding the New York Chapter Women in Fisheries Subcommittee

and mentoring program. Congratulations to all our awardees!

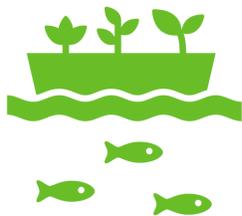
The final day of the meeting started off with a special Women in Fisheries breakfast, where special guest and director of the Gender and Women's Studies Program at SUNY Oswego, Joanna Goplen, spoke to a packed house about salary negotiation and the gender pay gap. After the final presentations of the day, awards were given for the best student presentations. The best poster presentation was awarded to another exceptional Ossining high school student Shae Shandroff, and best student paper presentation was awarded to both Taylor Brown and Alexander Koeberle. Last but not least, the votes were tallied, and the new president-elect was announced for the New York Chapter of AFS, Gelyanne Rivera! Congratulations Gely! A big thank you to President Sam Carey and everyone else involved for all their hard work planning and executing such a successful event!!



Apply by May 31st

[Click here for more details!](#)

Northeastern Division Aloha Student Travel Award



Aquaponics Workshop

June 24–28, 2024

Salem State University



Learn “how to” grow “organic quality” finfish and leafy greens in your in backyard for personal consumption or in your classroom as a hands-on, stem/steam teaching tool. The workshop is made possible through a grant from the Massachusetts Department of Agricultural Resources. There is no charge to participate, but space is limited and those interested should apply early. Participants must attend the entire workshop, which will meet Monday through Friday from 0830 to 1700. For the cost of tuition and fees, academic credit is available from SSU as a graduate course (*Topics in Aquaculture, BIO 705*), undergraduate course (*Research in Biology, BIO 408*) or continuing education (*Explorations in Biology, BIO 137*).



To apply or obtain more information, please contact:

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STUDENT SUBUNIT UPDATES

Penn West

Dr. David G. Argent

The Penn West student subunit kicked off the fall 2023 semester with a canoe trip down the Yough River. About a dozen folks participated! Later that month we toured the Rolling Rock Fishing Club property, near Ligonier, PA. Students learned about hatchery techniques and stream habitat improvement structures. In addition, Mike Allen, the club's hatchery manager, discussed internship opportunities. In November, we had a guest speaker, Jordan Weeks, Zoom-in and give a presentation all about Muskellunge management in Wisconsin. It was awesome!

In spring 2024, we started the year with the PA

AFS Chapter meeting at Allegheny College in Meadville. This was quickly followed up by a trip by members to Lake Erie to help the PA Fish and Boat Commission (PFBC) collect steelhead for their hatchery program. At the beginning of March, Dr. Argent attended the World Fisheries Congress in Seattle, WA. No students attended as they all headed to Gatlinburg, TN for some field excursions and Brook Trout fishing. Also in March, we had two guest speakers - one who discussed macroinvertebrate sampling methodologies and metrics in the Delaware River basin, Dr. John Jackson, and another who spoke about Hellbenders, Ryan Miller. In the last week of March, the group headed back to Linesville to help the PFBC collect walleye from the Pymatuning Sanctuary. This was a busy and fun day as the students helped collect, process, sort, and spawn walleye. A really great hands-on activity!



One of our members shows off the Smallmouth Bass catch of the day!



Subunit members help net steelhead for the PFBC hatchery program

We will be back at the Pymatuning State Park again in April to help with the PFBC's open house. We usually make Gyotaku t-shirts and help with the fish fry. Lastly, members will be helping with some early spring sampling on a few local streams. This work is being done in cooperation with the Partners for Fish and Wildlife to monitor fish and macroinvertebrate populations as they recover from instream habitat renovation work.



Subunit members try to stay warm while volunteering

unit. As a team, our focus this year has been on increasing University participation and fostering connections among our members. We kicked off the year with a social event at McGill's graduate student hub, Thomson House. We also held a networking event which featured a raffle for an AFS-themed mug which was won by a graduate student from Concordia University.



Members of the Quebec AFS Student Subunit and the Executive Committee attend the 2nd Annual Student Symposium

Our second annual symposium, "Tides of Tomorrow: Aquatic Science in the Anthropocene," held in March 2024 was a tremendous success. We saw a remarkable turnout with over 70 attendees, significantly surpassing last year's participation. One of the high-



The symposium provided great networking opportunities for the students

Quebec

Miguel Eduardo L. Felismino

We are excited to bring you the latest news and updates from the Quebec Student Subunit. This year, we had a strong recruitment drive, welcoming over 40 new members, which has resulted in us being the largest we have ever been as a student sub-



Attendees at the symposium gather for a group picture

lights of the symposium was our ability to secure provincial and institutional funding (including the Quebec Center for Biodiversity Science, McGill Graduate Student Association, the McGill Sustainability Fund, and the AFS Education Section), enabling us to recognize and award outstanding research being

conducted in Quebec. We kicked off the event with keynote speaker Andrés Lopez-Sepulcre, from Cornell University, followed by 18 talks from students from all over Quebec. A highlight of the event was our art competition, showcasing science through various lenses, from crochet goldfish to underwater videos and paintings. We had a diverse range of participation from eight different Universities and two CEGEPs (Collège D'enseignement General et Professionnel) as well as government and industry representatives. To wrap up our event, we had a career panel with speakers from the CEGEPs, government sectors, and academia.

Looking ahead, the Quebec Student Subunit's vision is to continue growing the AFS community by involving more Quebec universities and further expanding our reach outside the city of Montreal. To achieve this, we will maintain our outreach efforts and are actively seeking student representatives from other Quebec universities to join us. For more updates on the Quebec subunit, check out the [link-tree](#) to follow us on social media and join our mailing list!



Winners of the Best Artwork (Emma Shubert- left), Best Presentation, and Best Visual Design Awards (Jeremy De Boneville—right)

Rutgers

Sam Alaimo

It was an eventful year for the Rutgers Student Subunit! In April 2023 at our annual Rutgers Day event, we educated the public on the native marine and freshwater fish species that live in New Jersey through a fun coloring activity and fish trivia! In August of 2023, subunit member Alex Ambrose traveled to Ghana to participate in the Coastal Ocean Environment Summer School in Nigeria and Ghana (COESSING) as an assistant instructor in the fisheries focused group. At the University of Ghana in Accra, she spent a week helping students from across Africa to develop fisherman surveys and how to use statistical coding software with fisheries data. Kicking back the school year in the fall, we toured the James J. Howard Marine Science Lab in Sandy Hook, NJ and learned about lab facilities and fisheries research conducted by NOAA. At the Mid-Atlantic Chapter Meeting in November, some of our members presented posters and oral presentations.

Subunit president Sam Alaimo, subunit treasurer Alex Ambrose, member Sophia Piper, and subunit secretary Hails Tanaka presented posters, and members Paul Coyne and Jackie Veatch gave an oral presentation. Hails Tanaka and Jackie Veatch both won the 'Best Student Poster' and 'Best Student Presentation awards', respectively.

During the spring semester, we had a movie night with the film "The Meg" (and discussed its inaccuracies)! We also hosted a career panel, where students learned about fisheries job opportunities in academia and government. Several members also attended the Northeast Cooperative Research Summit in Cape May, NJ, where President Sam Alaimo presented her thesis work about cold pool influences on commercial species dynamics in the Mid-Atlantic Bight and made connections with local NJ fishermen interested in monitoring oceanographic parameters.

In addition to our events throughout the year, our members accomplished many things in and out of the classroom. Dr. Heidi Yeh successfully defended her PhD dissertation in June, and is now the Policy Director for the Pinelands Preservation Alliance. Eliz-



Rutgers Subunit Picture! From left to right: Eamon Taylor, Jake Kuenzli, Lauren Cook (vice president), Hails Tanaka (secretary), Teemer Barry, and Sam Alaimo (president)

abeth Bouchard also successfully defended her master's thesis. Lauren Cook was a co-author on a publication in *Geophysical Research Letters* for work involving ocean biogeochemistry. She also presented at the Ocean Sciences meeting on their research about carbon production by Atlantic menhaden. Finally, Jackie Veatch also presented at the Ocean Sciences meeting about transport and the concentration of plankton in the Antarctic.



Rutgers Student Subunit touring the James J. Howard Marine Science Laboratory in Sandy Hook, NJ with Dr. Beth Phalen (former Branch Chief).



Student Subunit members visit a recirculating aquaculture facility during their tour of the J. Howard Marine Science Laboratory

University of Delaware

Rachel Roday

Over the past year, the University of Delaware (UD) AFS Student Subunit has been busy connecting graduate and undergraduate students with professionals in various fields. We have hosted a number of guest speakers, with the intention of creating a networking space for both established scientists and early career students and postdocs. Our speakers came from local non-profit organizations such as the Center for the Inland Bays, academic-adjacent institutions such as the Smithsonian Environmental Research Center, and the Federal Government (Office of Naval Research). Students have gained insight into the many career pathways that exist after graduation and enjoyed presentations in fields of research similar to their own. We are excited to continue hosting these guest speakers throughout the year. UD AFS members also had the opportunity to attend the Mid-Atlantic Chapter annual meeting in Wilmington, DE in November of 2023, right along the riverfront. The level of expertise ranged from first-year graduate students to post-docs to professors, and the group had a great time learning about research coming



Dr. Matthew Ogburn from the Smithsonian Environmental Research Center delivers a presentation to the students of UD's AFS Subunit



MAC AFS members attending the 2023 annual MAC AFS meeting in Wilmington, Delaware. (Left to right: Dr. Ed Hale, Benjamin Marsaly, Anthony O'Toole, Daniel Millea, Rachel Roday, Dr. Jerome Pinti, Rileigh Hudock, Tess Avery)

out of the Mid-Atlantic region. We also had fun hosting non-academic events for our members, including a beach clean-up and bonfire in Lewes, DE. We're excited to continue our programming in 2024 for our students and community members!

University of Maine

Rylee Smith

In August, a large group of students made their way to Grand Rapids, MI for the National AFS meeting and had a lot of fun presenting their research. Our President, Rylee Smith, even won the Skinner Award! In September 2023, Deborah Alademehin attended the Atlantic International Chapter and won the Soggy Boot Award for best student presentation.

The fall semester included our popular fish printing and fly-tying events. We also defended our title in our annual candlepin bowling tournament against

our longstanding rivals from the UMaine Student Chapter of The Wildlife Society and WON! We are looking forward to a rematch next fall.

The spring semester kicked off with our annual ice fishing excursion to Hermon Pond during Maine's free fishing weekend. The ice fishing trip is one of our most popular events and provides an opportunity for our members to dip some poles in the water and test their ice fishing skills. In early March, we had a great time testing our skills at a craft night making fish themed keychains. This brought a fun element to our meetings, and we talked about Maine's fish with friends and colleagues. As the spring semester comes to an end, we are looking forward to the last few activities for this year. We are excited to assist the Maine Department of Marine Resources with their Rainbow Smelt spawning surveys again this spring, and we are gearing up for the 9th annual UMaine 5K spawning run. The spawning run is our biggest event of the year, and many of our members bring their running shoes out of storage early to begin training for the race. Our hybrid format has been well received and will be making a return



Members of the student subunit gather together at the annual ice fishing event

this year. The 5K helps to fund our favorite activities, student scholarships, and outreach events throughout the next year.

For additional information and updates, check us out on Twitter (@UMaineAFS), Facebook (@UMaineAFS), and Instagram (@UMaineAFS).



UMaine Student Subunit at the candlepin bowling event defending the title against The Wildlife Society



UMaine Subunit member Deborah Alademehin accepts the Soggy Boot Award at the AIC Conference in 2023

FISHERIES NEWS UPDATES

How Many Fishes?

Richard S. McBride

Supervisory Research Fisheries Biologist, and the Chief of the Population Biology Branch, at NOAA Fisheries' Northeast Fisheries Science Center.

A recent book got me thinking. Globally, there are nearly [37,000 valid fish species](#). And in North America? The most recent official number is 5,071 fish species. This exact number is recorded in the 8th edition of "[Common and Scientific Names of Fishes from the United States, Canada, and Mexico](#)," published in 2023 by the American Fisheries Society (AFS).

The 1st edition of AFS's 'Names of Fishes,' published in 1948, listed 570 species. This seminal attempt was focused on the better-known sport, commercial, and forage fishes. Subsequent editions

in the region, or become introduced within the region. One of the highlights of my career was to name a new species of ladyfish, *Elops smithi*, in 2010. This species occurred primarily in the Caribbean Sea, but its range extended into Florida, where I was working back in the 2000s. With my co-authors, we gave it the common name Malacho, a name used widely in the Caribbean region. The description for this new species was partly based on countable characters, particularly the number of vertebrae. In collaboration with some geneticists, we also included molecular evidence that this new species had split from the common ladyfish of the region, *Elops saurus*, about a million years ago. Although the peer reviewers did not question the validity of this new species, for me, the whole process of naming a new species was not complete until I saw it listed in the 7th edition of AFS's "Names of Fishes" book. That was a great feeling.

Species are also removed when two species are

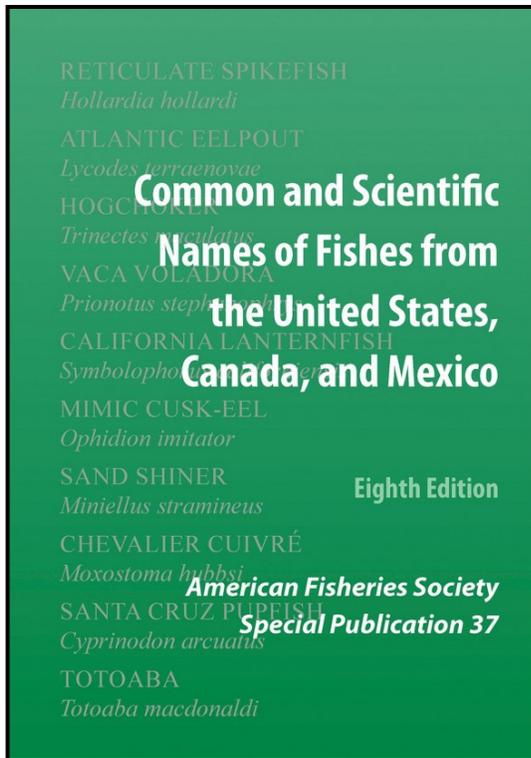


An image of the Elops smithi, holotype, caught in the marine waters of Guyana, from the article published in Zootaxa

were more comprehensive, listing about 2,000 species. The total grew to 3,700 in the 6th edition (2004), which added fishes distributed in Mexico. The total grew again to 3,876 in the 7th edition (2013), which added fishes distributed in the Arctic Ocean. The 8th edition added fishes distributed within each region's exclusive economic zones (EEZ), subtotaling: Canada (1,254 species), Mexico (3,262), United States (3,820), and the southern boundary of the Arctic Ocean along the coast of North America (265).

Species are also added to each edition as new fishes are described, are collected for the first time

combined into one or higher-level taxonomy changes. Species can also stay on the list but their scientific names may change. A notorious example of both is Winter flounder. Winter flounder on Georges Bank differ in shape and color compared to winter flounder along the coast, so much so, they had a different scientific name (*Pseudopleuronectes dignabilis*) in the early 1900s. Eventually, winter flounder became one species, *Pseudopleuronectes americanus*. The differences were still there but they were recognized at the subspecies level, with three biological stocks in U.S. waters: on Georges Bank, and north and south of Cape Cod, MA. In the 5th edition (1991), a taxonomic revision assigned



Cover page of AFS's Names of Fishes 8th Edition

several flatfishes, including Winter flounder, to the genus *Pleuronectes*. The shortening of the genus name was welcomed by anyone who had to write this out in their reports. But by the next, 6th edition (2004), Winter flounder was put back in the genus *Pseudopleuronectes* (!), where it remains in the 7th and 8th editions (yep, I just double checked that). Needless to say, this floundering history does not conform with the goal of avoiding confusion over scientific names, and this unusual example became a running joke when I was in graduate school.

Nonetheless, science should change in the face of new evidence. Such decisions are taken regularly, about every decade, by a "names committee," currently with 10 committee members. They are expert ichthyologists from museums and universities throughout the North American Continent. Katherine Bemis, of NOAA's National Systematic Laboratory in Washington, D.C., is a member. For those looking ahead, between each edition, authoritative sources are [Eschmeyer's Catalog of fishes](#), and more broadly, the [World Register of Marine Species](#).

Not everyone needs their own copy, but for those that do, AFS's 8th edition of the 'Names of Fishes' is very thorough and useful. It includes an introduction

in English, Spanish, and French. The names of fishes are listed in phylogenetic order, indicating Classes, Orders, Families. The scientific name includes the authority (e.g., Linnaeus), and common names for each species appears in all three languages, if they exist. Clearly, the names committee considers the stability of common names as seriously as that of the [scientific binomens](#).

The book has appendices that specify the changes since the last edition as well as names applied to hybrid species. The 8th edition finishes with a comprehensive index.

I expect that most people could probably name only a dozen or two species of fish. Names like [Anchovy](#), [Bass](#), [Cod](#), etc. In light of any edition of this AFS "Names of Fishes" book, such names are remarkably unspecific, all the more so when you become aware that there are more fish species than any other vertebrate category. The general public may have more [pet names for fish](#) – names like Nemo, Floater, or Charlie the Tuna – than knowledge of distinctive, authoritative fish names.

The utility of such a book is obvious, especially in how it expands a bit with every edition. In terms of the U.S. Department of Commerce, this book is an important baseline that lists the biodiversity across the continent and extending out into the EEZ. Without such a book there would be no legal reference to know what species to expect when buying fish at a market or ordering in a restaurant. Without a consensus on which species are which, scientists could not collaborate between institutions, compare the results of published studies, or know what fishes to order for medical testing or experiments in the laboratory. Or just to have a conversation.

A few years back, two Italian scientists came to visit and work for a few weeks in Woods Hole, MA. On the weekend, we went into Boston and stumbled into an open air market that displayed dozens of marine fishes. I knew they would not know the common market names here, so we talked about the fish using family, genus, and species names. On another occasion, an Italian scientist came to hear me speak about American shad (*Alosa sapidissima*). He said he was very excited to eat this fish someday, because the specific name *sapidissima* means 'most delicious.' Latin is very much alive as an international language in our every day life, when we look for it.

Society of Canadian Aquatic Sciences

Kathryn Collet

New Brunswick Department of Natural Resources and Energy Development

The Society of Canadian Aquatic Sciences (SCAS) held their second annual meeting in Fredericton, New Brunswick from February 22-24th, 2024. The stated role of the SCAS/SCSA is “to offer an impartial, diverse, and inclusive forum to share, integrate, and advance knowledge of fisheries, limnology, and aquatic sciences in Canada” (<https://www.scas-scsa.ca/>)



AFS President Cecil Jennings and NED Vice-President (Right) and AIC member Kathryn Collet (Left) with AIC's unofficial mascot "Bear Hat" at SCAS-SCAS, Feb. 2024

AFS President, Cecil Jennings, was in attendance and gave a very well-received talk entitled “**Organization reflections on embracing EDI principles and practices**”. Cecil spoke about how changing demographics in society pose new challenges that require fisheries professionals to rethink current recruitment and retention practices. He noted that AFS has published a series of articles in a special “Diversity and Inclusion” issue of fisheries that highlight the importance of DEI to our profession and how the implementation of meaningful DEI practices is an effective approach for addressing the lack of diversity among fishery professionals and promoting the benefits that accompany a representative workforce. He spoke about how a diverse and representative workforce will help expand the pool for recruitment of new fishery professionals to address a looming recruitment problem and how diverse backgrounds and perspectives can be used to provide better solutions to solve complex problems of natural resource stewardship.

Finally, he noted that despite the documented benefits of a diverse workforce, recruitment and retention of underrepresented groups remain a long-standing problem in fisheries and that there is more work to be done.

Fish Grown on Vermont Trees

Jud Kratzer

Vermont Fish & Wildlife Department

Since 2012, Vermont Fish and Wildlife Department and Trout Unlimited have been working together to improve fish habitat and stream function by strategically adding large woody material, in the form of trees, to northeastern Vermont streams. To date, the partners have spent over 300 days working to improve habitat on over 50 miles of stream. Based on observed responses of brook trout populations to large wood addition, we conservatively estimate that there are approximately 60,000 more Brook trout in northeastern Vermont streams as a



A strategic wood addition structure one year after installation on Murphy Brook in northeastern Vermont, Photo Credit: Jud Kratzer, VFWD



Aerial view of a strategic wood addition structure two years after installation on Tim Carroll Brook in northeastern Vermont, Photo Credit: Jud Kratzer, VFWD

result of these efforts. These results highlight the value of streamside forests and the trees that they contribute as crucial habitat to our streams and rivers. Streamside forests provide shade that helps to keep the water cool, and they filter runoff to keep

water clean. Leaves that fall into streams become food for insects, which are food for fish. When the trees themselves fall into streams, they provide valuable hiding places for fish. In summary, we like to say that “fish grow on trees”.



Vermont Fish and Wildlife Department and Trout Unlimited staff constructing a strategic wood addition structure on the East Branch Nulhegan River in northeastern Vermont. Photo Credit: Joe Norton, Trout Unlimited

RECENT PUBLICATIONS

Marine ecosystem-based management: challenges remain, yet solutions exist, and progress is occurring

In Ocean Sustainability

J. B. Haugen, J. S. Link, K. Cribari, A. Bundy, M. Dickey-Collas, H. M. Leslie, J. Hall, E. A. Fulton, J. J. Levenson, D. M. Parsons, I.-M Hassellöv, E. Olsen, G. S. DePiper, R. R. Gentry, D. E. Clark, R. E. Brainard, D. Mateos-Molina, A. Borja, S. Gelcich, M. Guilhon, N. C. Ban, D. Pedreschi, A. Khan, R. Chuenpagdee, S. I. Large, O. Defeo, L. Shannon, S. A. Bailey, A. Jordan & A. L. Agnalt

Abstract: Marine ecosystem-based management (EBM) is recognized as the best practice for managing multiple ocean-use sectors, explicitly addressing tradeoffs among them. However, implementation is perceived as challenging and often slow. A poll of over 150 international EBM experts revealed progress, challenges, and solutions in EBM implementation worldwide. Subsequent follow-up discussions with over 40 of these experts identified remaining impediments to further implementation of EBM: governance; stakeholder engagement; support; uncertainty about and understanding of EBM; technology and data; communication and marketing. EBM is often portrayed as too complex or too challenging to be fully implemented, but we report that identifiable and achievable solutions exist (e.g., political will,

persistence, capacity building, changing incentives, and strategic marketing of EBM), for most of these challenges and some solutions can solve many impediments simultaneously. Furthermore, we are advancing in key components of EBM by practitioners who may not necessarily realize they are doing so under different paradigms. These findings indicate substantial progress on EBM, more than previously reported.

Implementing Ecosystem-Based Management Globally



Fig. 1. The global challenges, solutions, and progress for implementation of Ecosystem-Based Management (EBM) identified by the pre-workshop poll results and workshop results.

DOI: 10.1038/s44183-024-00041-1

Notes on the Occurrence of Northern Snakehead in a Mid-Atlantic System: 16 Years of Monitoring

In Northeastern Naturalist

Colin R. Rohrback, David H. Keller,
Paul F. Overbeck, and Daniel P. Morrill

Abstract: *Channa argus* (Northern Snakehead) was first discovered in Pennsylvania and the Delaware River watershed in 2004 in Franklin Delano Roosevelt Park (FDRP), Philadelphia, PA. We monitored this population by boat and/or backpack electrofishing from 2005 to 2021. Our objective was to summarize common population characteristics and compare these with other non-native Northern Snakehead populations. Length-at-age data indicated the FDRP population was slower growing and lacked larger individuals relative to other populations. Data from stomach dissection documented feeding on *Anguilla rostrata* (American Eel), *Lepomis macrochirus* (Bluegill), *Lepomis gibbosus* (Pumpkinseed), *Fundulus diaphanus* (Banded Killifish), and *Micropterus salmoides* (Largemouth Bass), suggesting potential impacts to these species. Backpack electrofishing in 2005 and 2008 showed significant decreases in

the densities of American Eel and Banded Killifish which may be due to predation by Northern Snakehead.

DOI: 10.1656/045.030.0406

Industry reported biological data informs population demographics and commercial fleet heterogeneity for American Lobster

In Fisheries Research

C.J. Huntsberger, B. Shank, M.C. McManus, A. Ellertson, and N.D. Bethoney

Abstract: Characterization of the American lobster harvest has traditionally been conducted using at-sea observer or dockside coverage. However, doing so is challenging for the offshore fishery and can result in samples collected from only a few vessels, which may not represent the entire, diverse fleet. Additionally, there is no dedicated offshore fishery-independent survey for lobster resulting in limited data available for the US offshore portion of this fishery. Since 2013, The Commercial Fisheries Research Foundation has trained 29 vessels, with broad spatial sampling across the fishery, to collect

biological data aimed to improve management. To identify spatiotemporal lobster patterns and potential vessel effects, the demographics of 145,663 lobsters were evaluated by k-means cluster analysis. This analysis showed the majority of catch for each sampling period grouped into one of three distinct categories.



Northern Snakehead (*Channa argus*)

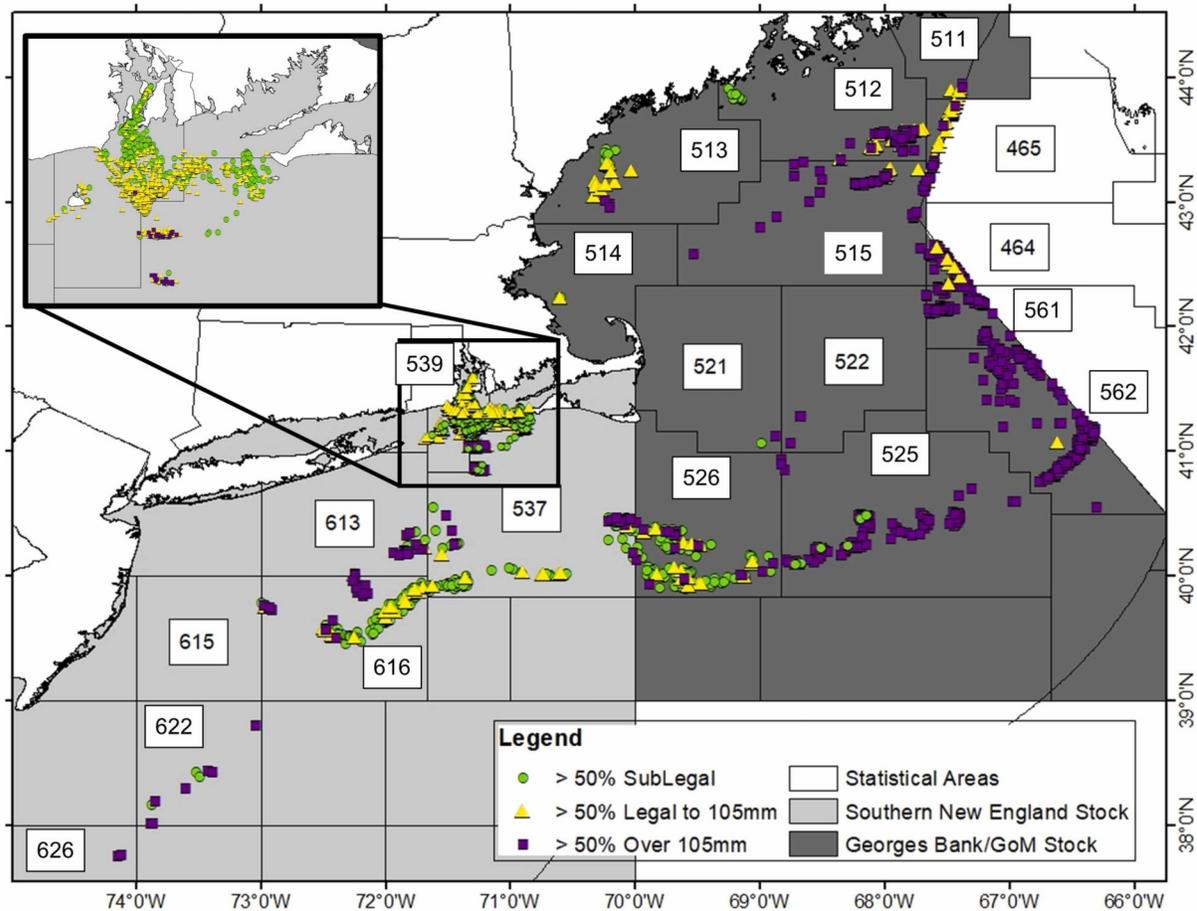


Fig. 4. Results of the cluster analysis showing the location of each sampling labeled by their unique cluster defined as either a majority of sublegal lobsters (green circles), a majority of lobsters between the legal size and 105 mm (yellow triangles) or sampling events where the majority of the lobsters were larger than 105 mm (purple squares). The location of the catch is overlaid on the NOAA statistical area and the lobster stock areas

ries: sublegal, between minimum legal size and 105 mm (75th percentile), or larger than 105 mm. These groups were distributed between broad geographical areas where spatial differences were shown to have the biggest impact on the catch demographics, however these differences did not always follow management boundaries. For example, the difference in catch between Georges Bank and Southern New England, does not align with the current stock boundaries between the Southern New England and the Gulf of Maine-Georges Bank Stock. This analysis could be easily adopted to compare fishery dependent data with management boundaries for other fisheries

DOI: 10.1016/j.fishres.2024.106952

Temperature- and ration-dependent winter growth in northern-stock Black Sea Bass juveniles

In Transactions of the American Fisheries Society

Max D. Zavell, Matthew E. P. Moulard, Catherine M. Matassa, Eric T. Schultz, Hannes Baumann

Objective: The northern stock of Black Sea Bass *Centropristis striata* has spatially expanded over the past decade, potentially due to warming northwest Atlantic Shelf waters affecting overwintering.

Methods: To gather empirical data on temperature-dependent energetics, we quantified winter growth

and lipid accumulation in juveniles from Long Island Sound using two experiments.

Result: Experiment 1 measured individual length growth (GR), weight-specific growth (SGR), growth efficiency, and lipid content at constant food levels and three static temperatures (6, 12, 19 °C), resulting in decreasing GR from 0.24mm/day at 19 °C (SGR=0.89%/day) to 0.15mm/day at 12 °C (0.54%/day) to 0.04mm/day at 6 °C (0.17%/day). Even at the coldest temperature, most juveniles sustained positive GRs and SGRs; hence, the species' true thermal growth minimum may be below 6 °C. Lipid accumulation was greatest at 12 °C, which is close to what overwintering juveniles likely encounter offshore. Experiment 2 measured the same traits but combined a representative thermal overwinter profile (20 °C→13 °C, October–March) with seasonally varying rations designed to mimic low and high levels of food availability offshore. Monthly GR and SGR responded in the direction of

seasonal food level changes. The “winter pulse” consumption average of 1.7%/feeding elicited a mean GR of 0.15mm/day and SGR of 0.55%/day, whereas the “winter dip” consumption average of 3.8%/feeding yielded faster GR (0.20mm/day) and SGR (0.71%/day). Growth efficiency ranged between 15% and 30% and was inversely related to food consumption. In both experiments, juveniles disproportionately accumulated lipid over lean mass, with lipid proportions tripling in experiment 2 from 4% at 65mm to 12% at 120mm.

Conclusion: As inshore winter waters continue to warm, the energetic trade-offs of overwinter offshore migration are likely to shift, potentially leading to a year-round inshore Black Sea Bass presence.

DOI: 10.1002/tafs.10452

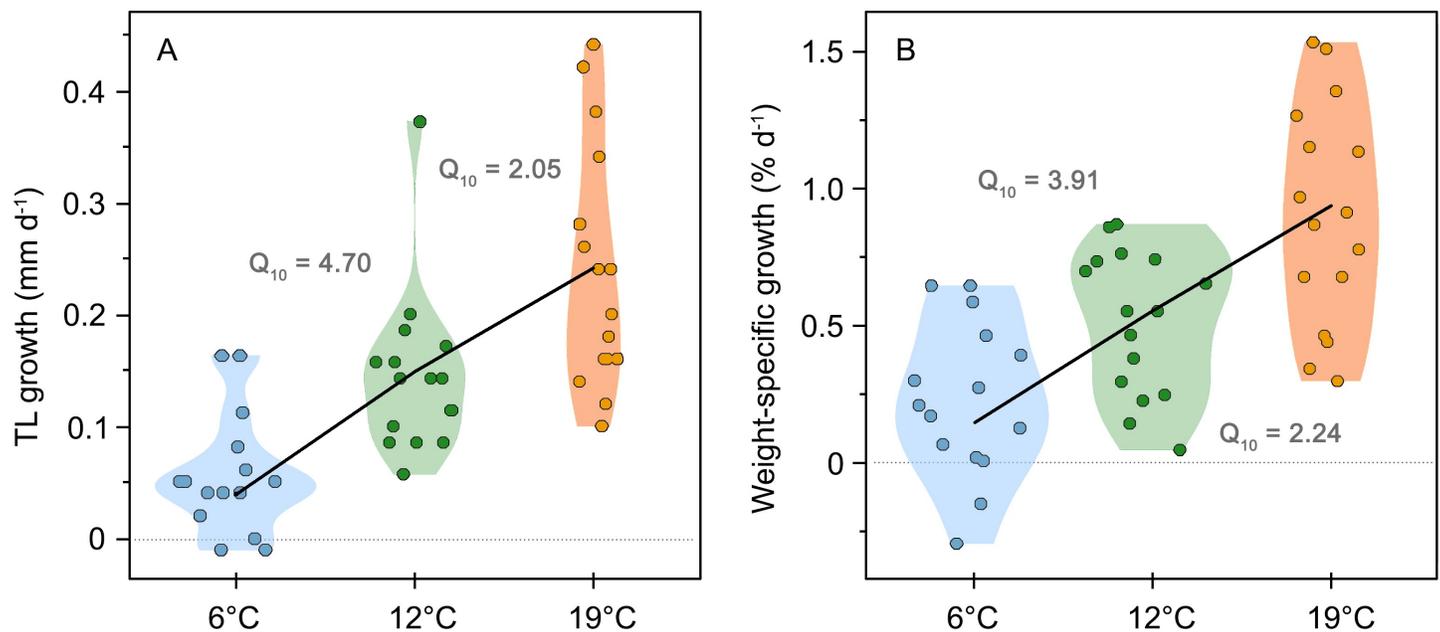


Fig. 3. Jittered violin plots for experiment 1 depicting (A) total length (TL) growth (mm/day) and (B) weight-specific growth (%/day), of juvenile Black Sea Bass reared at 6 °C (blue circles), 12 °C (green circles), and 19 °C (orange circles) for 42–78 days. Each symbol represents an individual fish. Black lines connect treatment means. The Q₁₀ values (gray text) were calculated for each temperature interval.

First Record of *Faxonius propinquus* (Girard, 1852) in the Delaware River watershed and new record of another non-native crayfish species, *Procambarus acutus* (Girard, 1852)

In BioInvasions Records

Daniel P. Morill and David H. Keller

Abstract: *Faxonius propinquus* is considered native to the Susquehanna River watershed but is not native to the nearby Delaware River watershed in North America. Here we show that *Faxonius propinquus* is now established in the Delaware River watershed, which is reason for concern. We also provide published records to describe more fully the distribution of *Procambarus acutus*, a species considered non-native in the Delaware River when found upstream of the Atlantic Coastal Plain. We provide evidence that indicates that *F. propinquus* has become established in the Lehigh River, a sub-watershed in the Upper Delaware River, and that *P. acutus* has expanded into this portion as well. In addition, we provide evidence of hybridization occurring between the native *Faxonius limosus* and a non-native congener.

DOI: 10.3391/bir.2023.12.4.22



Fig. 2. Image of rostrum of *F. propinquus* specimen with median carina evident. Photo by Daniel Morrill

American lobster and Jonah crab populations inside and outside the Northeast Canyons and Seamounts Marine National Monument, USA

In Marine and Coastal Fisheries

Stephen A. Arnott, Michael P. Long, Aubrey Ellertson, N. David Bethoney

Objective: There is international pressure to increase the worldwide expanse of marine protected areas (MPAs). However, MPAs often lack preexisting long-term biological baselines, which are essential for assessing MPA effects and for refining the conservation and socioeconomic benefits they confer to society. Our study addresses this issue by establishing demographic baselines for two commercially important species prior to a proposed fishing ban inside the Northeast Canyons and Seamounts Marine National Monument, a recently established MPA on the continental shelf break approximately 200km southeast of Cape Cod, Massachusetts.

Methods: Samples were obtained by the Commercial Fisheries Research Foundation's American Lobster and Jonah Crab Research Fleet, which is an industry-based, fishery-dependent data collection program. Specially trained participants recorded year-round biological data from their 2013 to 2021 commercial catches of American lobster *Homarus americanus* and Jonah crab *Cancer borealis*. Samples were taken from an area inside the MPA and from two areas outside the MPA, spanning 130km to the east and west.

Result: American lobster sizes and sex ratios varied between areas, and their sizes, sex ratios, and proportion of ovigerous females differed between submarine canyons within areas. American lobster siz-

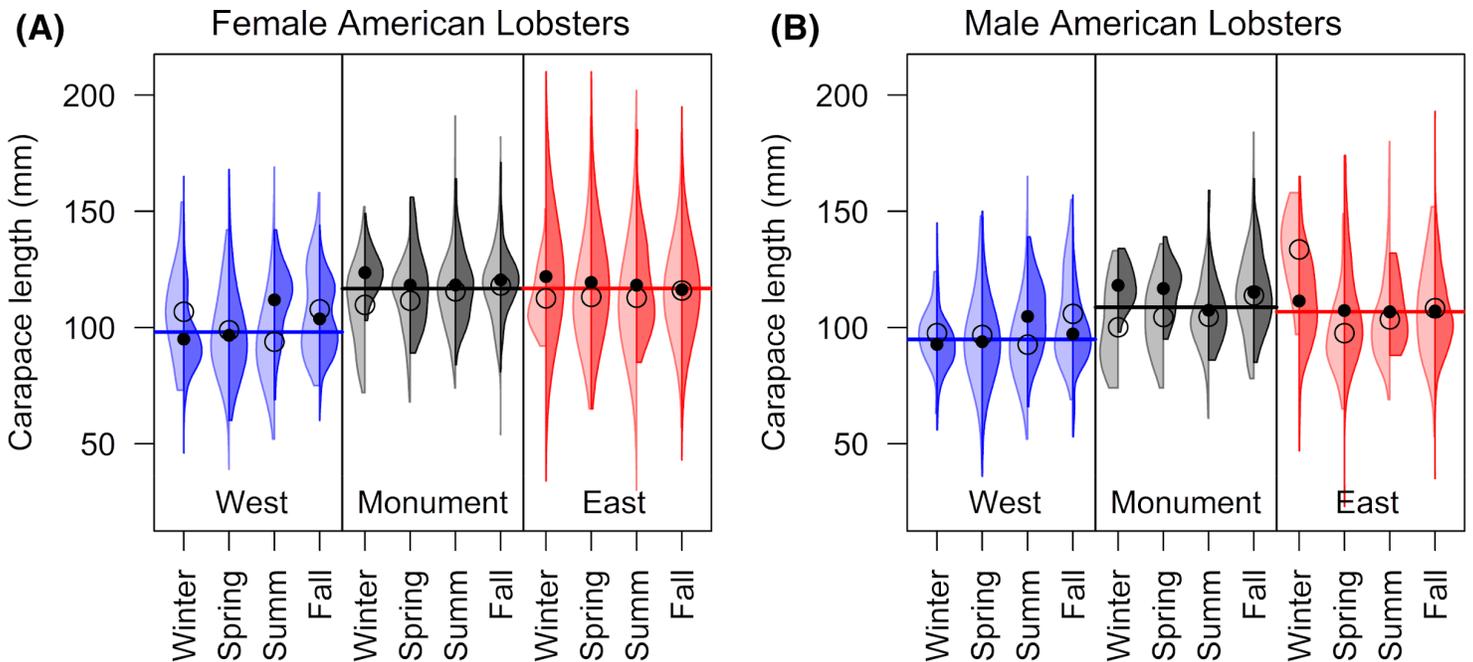


Fig. 2. Plots showing smoothed size distributions of (A) female and (B) male American lobster carapace lengths, grouped by area, season, and depth zone. Within each season, the left distribution (lighter shade) represents depths $\leq 250\text{m}$ (open circle=mean), and the right distribution (darker shade) represents depths $> 250\text{m}$ (filled circle=mean). Colored horizontal lines represent the overall mean within each area. Data were pooled across vessels, sampling sessions, and years. Colors denote sampling area (West=blue, Monument=gray, and East=red).

es, sex ratio, proportion of ovigerous females, and prevalence of shell disease were also affected by season and/or depth. Jonah crab parameters did not vary between areas, but sex ratio varied with season and depth, and the proportion of ovigerous females varied with depth.

Conclusion: These demographic baselines are the only data available, at a sufficient spatial and temporal resolution, for evaluating the effects of a proposed fishing ban in the MPA, and they fill important data gaps for stock assessments. To evaluate possible future population changes, it will be necessary to continue collecting data from inside and outside the MPA using comparable methods, and to account for the preexisting sources of variation that we have identified.

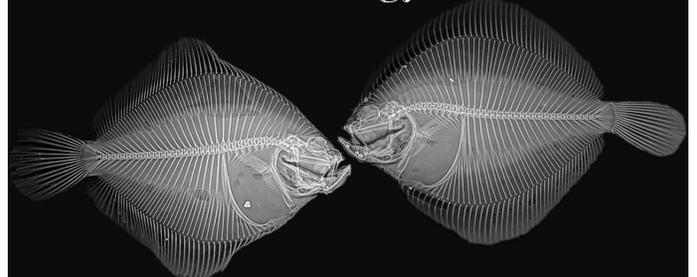
DOI: 10.3391/bir.2023.12.4.22

Have fishy news
to share?

Submit to the
2025 Northeast
Fish Rapper!

Email: matthew.mensing@maine.edu

18th Flatfish Biology Conference



November 13 & 14, 2024

ACKNOWLEDGEMENTS

Thank you for contributing to the 2024 Northeast Fish Rapper!

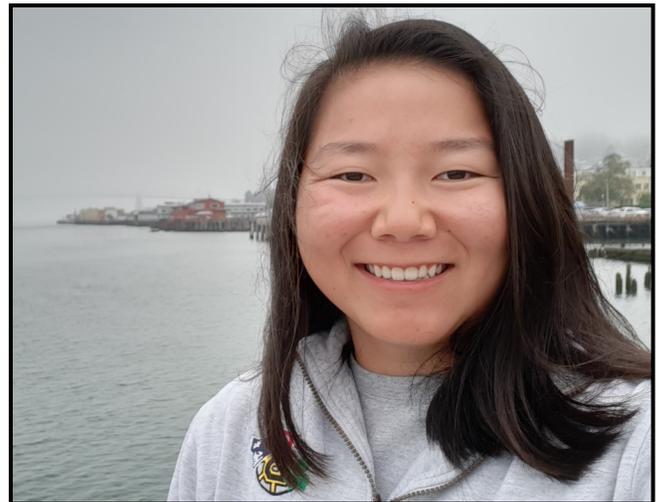
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 Vermont Fish and Wildlife Department

Meet the Editors



Matt Mensinger is a PhD student at the University of Maine, member of the UMaine Student Subunit. He has been editing the Northeast Fish Rapper since 2019. His research investigates predation during smolt migration. His email is matthew.mensinger@maine.edu



Carolyn Merriam is a Master's student at the University of Maine and Treasurer of the UMaine Student Subunit. Her research uses acoustic telemetry to characterize adult Atlantic salmon pre- and post-spawn movement in the Penobscot and Machias Rivers in Maine. Her email is: carolyn.merriam@maine.edu

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