Spring 2025

The Northeast Fish Rapper

Newsletter of the Northeastern Division of the American Fisheries Society

President's Message

Andrew Bade

This is a challenging time for the American Fisheries Society, its members, and the natural resources we seek to protect. Federal workforce reductions, attacks on federal research funding, and executive orders targeting diversity, equity, and inclusion programs have impacted countless current and prospective members, as well as the people and natural resources who depend on their efforts. Declining membership, a less lucrative publishing contract, and the loss of some funding partners among federal and state agencies challenge the long-term financial health of AFS and thus its ability to continue delivering important member services and programs. Canada and some European countries have also updated their travel guidelines to the United States, leaving international members unable to travel to the United States for AFS meetings. The loss of international collaboration may further reduce membership and the relevance of AFS on the global stage. On another front, the United States Environmental Protection Agency recently announced the "biggest deregulatory action in U.S. history", including rollbacks on climate and wastewater regulations that may directly impact fisheries resources. I remain confident that our passionate and engaged members, the lifeblood of AFS, will continue to see us through the challenges of our day, just as they have every day since 1870.

Since our founding, the membership has navigated AFS through the many twists and turns of history: the addition of 12 states to the Union, the recognition of Canadian independence, women's suffrage, the civil rights movement, the Great Depression, two world wars, multiple global pandemics, and – you get it. We have been through a lot, and these events have changed us, often for the better.

For example, the 234-foot *USS Albatross*, the first U.S. research vessel built for fisheries and oceanographic research that was launched in 1882, was placed under the control of the Navy from 1917-1919. It was moved from the west coast to Guantanamo, Cuba, to patrol in the Caribbean

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American Fisheries Society

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and the Gulf of Mexico to support the Entente during World War 1. After the war, the *Albatross* went back to work in the North Atlantic where it remained until it was decommissioned at Woods Hole. World War 1 led to an unprecedented level of death and destruction. And yet, the Allied Powers coming together in the war effort also promoted the broad inter-governmental cooperation that we rely on today. For example, the United States and Canada began seeking the first international agreement for joint management of a marine resource in 1918. This effort culminated in the Convention for the Preservation of the Halibut Fishery of the Northern Pacific Ocean and Bering Sea, a foundation of modern marine fisheries management that was signed by Canada and the United States in 1923.

Emmeline Moore, elected in 1927, was the first woman to lead AFS – only seven years after the 19th amendment was ratified, and about 10 years after getting her start in the profession, thanks in part due to the shortage of men during World War 1. Her contributions to the field are diverse and numerous, with her 13-year survey of the Lake George watershed being particularly impressive as the largest in the world at the time. The New York Department of Conservation named a research vessel, the Emmeline-M, in her honor in 1956. In 2009, the American Fisheries Society created the Emmeline Moore Award, given annually to a person committed to expanding diversity in the field of fisheries.

More recently, the COVID-19 pandemic dramatically changed the landscape for fisheries professionals and the resources we steward. In addition to the tragic loss of life, meetings went virtual, workers went remote, and many people used the increased free time to engage with nature in ways that bucked long-term trends, with some states seeing double digit increases in fishing license sales. Many research projects were halted or cancelled, and many long-term datasets were interrupted with staff unable to conduct field work. Since then, hybrid meeting options have made our meetings more accessible to members who are unable to travel, hybrid work options reduced greenhouse gas emissions and improved work-life balance for many fisheries professionals, and new stewards and advocates for our fisheries resources were developed through that reengagement with nature.

Through it all, we are still guided by our passion for fish, fisheries, and the people who rely on them. Many of the issues discussed at the inaugural meeting of the then American Fish Culturists Association in New York City, such as the need for standardized common names of fishes and addressing migratory barriers for anadromous fish, would still fit neatly into a meeting agenda 155 years later. So, in wondering what you can do to face the moment, I encourage you to let your passions guide you. Many NED members have written letters of support for programs under threat, such as the Maine Sea Grant which had its funding temporarily rescinded in March. Others have traveled to Washington, D.C., to educate elected officials about the value of fisheries science or participate in rallies. Many more have simply continued their exceptional work in fisheries research, management, conservation, teaching, outreach, and more. All these approaches are valid and contribute to the health and sustainability of our profession.

None of this diminishes the real and varied threats that we face or the long road ahead to rebuild and grow from them. However, I hope that you find the same comfort, inspiration, and faith in the future from our history as I do. This too shall pass.

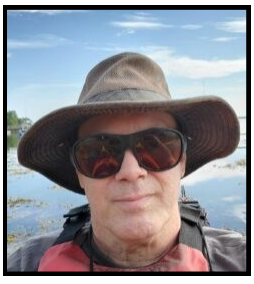
Sincerely,

Meet the rest of the NED officers!

President-Elect

Kathryn Collet
New Brunswick DNRED

Vice President



Russell Easy
Acadia University

Secretary Treasurer

Margaret Conroy
DNREC Division of Fish and Wildlife

Past President

Heather Stewart
Florida Fish and Wildlife Conservation Commission

UPCOMING MEETINGS

155th AFS Annual Meeting

August 10-14, 2025
San Antonio, Texas

Highlights from the MAC/NED Joint Meeting

October 2024 New Brunswick, New Jersey

Mike Acquafredda

On October 27-29, 2024, the Northeastern Division (NED) and the Mid-Atlantic Chapter (MAC) of AFS jointly held an annual meeting in New Brunswick, NJ. The theme of the meeting was "Examining Infrastructure and Fisheries Interactions." This meeting provided a platform for sharing information and ideas about the latest advancements in regionally specific fisheries and aquaculture science and management. Cutting-edge science, new policy perspectives, challenges facing the region, and success stories worth celebrating were discussed through oral presentations, poster displays, and social events.

More than 210 people attended the meeting, including 85 graduate, undergraduate, and high school students. Attendees included representatives from academia, non-profit organizations, federal and state agencies, and private industries. On the first day of the meeting, attendees had the option to attend up to three professional development activities, including "Grants Management 101," "Improving Your Scientific Writing," and "Introduction to Gyotaku (Art of Fish Printing)".

Two special sessions and workshops highlighted the meeting's theme: "Cumulative Effects of Offshore Wind on Fish and Fisheries" and "Exploring the Impacts of Dam Removal on Fisheries Among Northeast U.S. Basins". The meeting's plenary speakers, Dr. Lisa Methratta (NOAA NEFSC) and Dr. John Waldman (Queens College), kicked-off the special sessions and facilitated the workshops. The wind energy workshop included breakout groups, while the dam removal workshop included a panel of invited speakers. Overall, the meeting consisted of 38 oral presentations (including the 2 plenary talks) and 32 poster presentations. Of those, 37 talks and posters were presented by students. The meeting also included several student-focused activities, such as a student-only mixer event and a mentor/mentee lunch. Twenty students also received free lodging and several more received other forms of conference travel support. Keeping with

The audience listens intently to a presentation at the 2024 NED/MAC AFS Joint Annual Meeting in October.

Participants from the "Introduction to Gyotaku (Art of Fish Printing)" professional development workshop at the 2024 NED/MAC AFS Joint Annual Meeting show off their pieces.

Students mingle at the student-only mixer event the night before the 2024 NED/MAC AFS Joint Annual Meeting.

a MAC AFS annual meeting tradition, the conference included a silent auction and raffle, which raised money to support future student engagement with AFS meetings and other programs.

Emory Barrett won first place for best student poster presentation followed by Kristie Semanchik in second place and Rachel Davitt in third place. Justin Herne won first place for best student oral presentation followed by Clayton Nyiri in second and Peter Hennessy in third place. Also at the 2024 annual meeting, a vote was held to choose MAC's new logo. Lauren Cook's design won and can be viewed below. Lauren also won NED's Special Achievement Award. Scott Decker was also recognized with the Meritorious Service Award, Ben Gowell with the John Moring Student Travel Award, and Carl Widmer with the NED Walking Stick.

The Executive Committees of MAC AFS and NED AFS would like to thank the many sponsors and donors whose contributions made this meeting possible. Likewise, the Executive Committees would like to express their gratitude to the Meeting Planning Committee, the student volunteers, the staff of the New Brunswick Hyatt Regency, and everyone else who helped make this meeting a huge success!

Justin Herne (left) and Rachel Davitt (middle) accept their best student presentation awards from MAC President Mike Acquafredda (right) at the 2024 NED/MAC AFS Joint Annual Meeting.

Lauren Cook (left) accepts the NED Special Achievement Award from NED President Andrew Bade (right) at the 2024 NED/MAC AFS Joint Annual Meeting.

ANNOUNCEMENTS

Call for Abstracts

Mike Poll

Please consider submitting an abstract to present at the "Offshore Wind, Fish, and Fisheries – Emerging Knowledge and Applications" Symposium, as part of the American Fisheries Society's (AFS) 155th Annual Meeting (August 10-14, 2025, San Antonio TX). If not planning to present, I hope you will consider attending what should be a great session! Similar to recent years, this symposium will broadly address interactions of offshore wind with fish, and commercial/recreational fisheries. Presentations may address but are not limited to: emerging ecological and socioeconomic research, oceanographic and meteorological interactions, innovative methods for assessment, scale considerations, current regulatory processes, cooperative research, management practices, empirical studies, laboratory investigations, modeling, monitoring design, human dimensions, or survey recommendations. Of particular interest is lessons learned that can inform coexistence of wind and fisheries. You can see previous year's talks on ROSA's website: 2021, 2022, 2023, and 2024. Abstract deadline is **April 22, 2025**.

Please reach-out to anyone on the Organizing Committee, listed below for more information: **Mike Pol**, Responsible Offshore Science Alliance, **Brian Dresser**, Tetra Tech, Inc., **Ursula Howson**, Bureau of Ocean Energy Management, **Brendan Runde**, The Nature Conservancy, **Andrew Lipsky**, National Marine Fisheries Service, **Elizabeth Methratta**, NOAA NMFS NEFSC, **Morgan Brunbauer**, New York State Energy Research and Development Authority, **Fiona Hogan**, Responsible Offshore Development Alliance, **Angela Silva**, National Marine Fisheries Service

Hope to see you in San Antonio!

Coming Soon: AFS Estuaries Section Student Travel Awards for AFS 155 in San Antonio

Justin Stevens

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 2025 Annual Meeting!

The Section will award up to two students (one M.S. and one Ph.D.) attending AFS 155 in San Antonio in person. More details to come!

AFS Estuaries Section 2025 Elections

The AFS Estuaries Section is seeking nominations for our 2025 elections!

Executive committee positions include president-elect, secretary and treasurer. Please consider nominating yourself for a leadership position in the Estuaries Section!

Check out the 'Governance' tab to view bylaws and officer positions.

Reach out to **Michaelcurtis3@my.unt.edu** for questions.

Dr. Chris Sullivan has recently joined the New York Cooperative Fish and Wildlife Research Unit in Ithaca, New York, as the new Assistant Unit Leader. Chris earned his PhD from the University of Connecticut in May 2024, where he conducted research on thermal refuge use by salmonids in the Housatonic River. He is eager to collaborate with both new and familiar colleagues across the Northeast. Don't hesitate to reach out to him at cjs446@cornell.edu—he's looking forward to connecting!

Northeastern 2025 Division Awards

Nominations due July 10, 2025!

The **Northeast Division's (NED)** Awards Committee currently administers four awards recognizing excellence in professionalism/service in northeastern fisheries and aquatic science:

- Dwight A. Webster Memorial Award of Merit
- Meritorious Service Award
- President's Award
- Special Achievement Award

Additionally, the NED-AFS offers a separate travel award to support attendance at our annual events. Information on eligibility and application for this award is available on the John Moring Student Travel Awards page.

To submit a nomination:
Nominating colleagues a great way to express how much we appreciate their hard work. Requests for nominations are sent to Chapter and Division officers, Division committee chairs, and Division past-presidents. A call for nominations is sent to the membership via e-mail through the AFS and is published in the Division's newsletter that comes out in January or February. After reviewing nominations in all four award categories. The NED past-presidents vote on the nominees. Check out here for more information!

CHAPTER UPDATES

Atlantic International Chapter

Rosanne MacFarlane

The Atlantic International Chapter of AFS held its annual meeting from November 3-5 in Sunapee, New Hampshire. We were hosted by the Lake Sunapee Protective Association – Center for Lake Studies. This was an excellent opportunity for our AIC members to find out more about the LSPA and its involvement in watershed management in the Sunapee region. We were made to feel quite welcome at their wonderful office and interpretive center. Keynote speaker for the meeting was Thomas Ballestero from the University of New Hampshire's Stormwater Center.

Meeting attendees listen to the keynote speaker at the annual meeting in Sunapee, New Hampshire.

We are happy to announce that our 2026 annual general meeting will be held at the Manoir du Lac Delage in Quebec City from September 21-23. It has been many years since we've had a meeting in Quebec and we are looking forward to meeting old friends and making new ones. Many thanks to Eva Enders from the Institut National de la Recherche Scientifique (INRS) for heading up our 2026 Local Arrangements Committee.

New York Chapter

Gelyanne "Gelly" Rivera

The 2025 Annual meeting of the New York Chapter of the American Fisheries Society was held February 5-7 in breathtaking, small town, Bolton Landing, New York at the Sagamore Resort. The theme of the meeting was "The Life Aquatic with NYCAFS: An exploration of fisheries science, management, and connectivity". With 335 people in attendance, the event was a big success.

The annual meeting kicked off with two knowledge-filled and highly interesting workshops hosted by Florian Reyda (SUNY Oneonta), Hannah Whitcomb and Matthew Bodnar (Vermont Department of Fish and Wildlife) and by Dr. Katie Bills Walsh from Cornell University's Center for Conservation Social Sciences. Jay Beugly and Jeremy Farrell led a tour of the Darrin Fresh Water Institute- a multidisciplinary environmental research center dedicated to understanding the structure and function of aquatic, terrestrial and atmospheric systems. Before the welcome social began, the Youth and Education Committee, along with Women in Fisheries (WiF), had a student/WiF mixer that included a bingo icebreaker. The mixer gave students an opportunity to interact with each other as well as professionals in the field.

Professional Achievement Award Amanda Higgs.

Conservationist of the Year Award – Hudson River Fisherman's Association Joe Albanese and Gil Hawkins.

On the second day, Chris Solomon opened the plenary talks with a presentation on "Science, Management, and Connectivity in Recreational Fishery Landscapes", followed by Kristi Leora Gansworth presenting "Multinational Perspectives on Cultural Keystone Species".

The session concluded with James L. Markham presenting "The Importance of Applied Research for State Fisheries Management". A total of 53 oral presentations were given during the meeting. There were 57 posters presented, and a very fun and challenging display of fish models to identify hosted by Doug Carlson and Chip Cotton, of SUNY Potsdam and SUNY Cobleskill. Due to sudden travel restrictions, several federal presenters were unable to attend the NYCAFS annual meeting, so we would be remiss if their efforts to share current research weren't recognized. Thank you, Isabella Mustafa, Kyle Morton, Collin Farrell, David Minkoff, Justin Ecret, Taher Fletcher, and Bryan Ross for your contributions. Women in Fisheries kicked off the "Lunch and Learn" with a short seminar from Diane

Klumb- Spindler Travel Award Jonathan Truscott, Susana Keilig, Matthew Scott, and Benjamin Spitz.

Diversity Travel Award
David Tracy and Andrew Hill.

Fin-Tastic Science Blog Award
Gelyanne "Gelly" Rivera and Henry Freundlich.

Timmins, New Hampshire's Inland Fisheries Division Chief, on leadership skills that are useful in every career stage. Lunch was followed by three contributed sessions of oral presentations, including a career panel discussion moderated by Henry Freundlich where attendees heard different perspectives and advice on entering the field of fisheries.

After the amazing and delicious dinner was served, numerous members were recognized with chapter awards. This year the Professional Achievement Award was given to Amanda Higgs for her outstanding service and devotion to the protection and enhancement of New York's fisheries and aquatic resources through a long career of research and collaboration, especially with sturgeon- congratulations! The well-deserved Conservationist of the Year Award was given to the Hudson River Fisherman's Association, accepted by HRFA's president Joe Albanese and Environmental chair Gil Hawkins. HRFA is a non-profit organization whose objectives are to encourage the responsible use of aquatic resources and protection of habitat and to assist, where possible, in efforts to abate pollution and promote sportfishing and the management of that recreation.

Since 1966, they have been a leader in protecting the Hudson River and its fisheries, taking on pollution, restoring habitats, advocating for sustainable practices, and increasing access. They have led efforts to help improve fish populations like striped bass and sturgeon, while their educational programs, such as "Hooked on the Hudson," inspire countless community members to care for the river and engage youth and others in outdoor recreation.

The Klumb- Spindler Travel was awarded to Matthew Scott, Benjamin Spitz, Susana Keilig, and Jonathan Truscott. The 2025 Diversity Travel award was given to David Tracy from Saint Regis Mohawk Tribe and Andrew Hill from Cornell University. Closing off the awards, the Fin-Tastic Science Blog Contribution Award was given to Gelyanne Rivera and Henry Freundlich. This award was given based on the science blog post published on the NYCAFS webpage with the most views. The banquet concluded with the annual raffle supported by generous donations from sponsors and members, generating $4,000 which will help fund student travel awards for the coming year. Special thanks to Inno-

Best Student Poster Award Susana Keilig.

Best Oral Presentation Award Justin Herne.

vasea for donating a NexTrak R1 Receiver, which was auctioned off and won by Amanda Higgs. Thank you to everyone who contributed, along with our sponsors and congratulations to all who received awards!

On the final day more great contributed presentations were given, chapter shirts and mugs were sold, and the day concluded with student awards and closing remarks. The best poster presentation was awarded to Susana Keilig and the best oral presentation was awarded to Justin Herne. After the votes were tallied, a new chapter AFS logo was chosen and the new president- elect was announced for the New York Chapter of AFS. Congratulations to Francis McParland! And thank you Grace Gonzalez for contributing an amazing logo. An enormous thank you to President Jess Best and everyone involved for making this amazing event happen! With all, stay tuned for next year's meeting.

Pennsylvania Chapter

Aaron Henning

The Pennsylvania Chapter partnered with our neighbors, the Ohio and West Virginia Chapters to hold a joint technical meeting March 4-7 at Oglebay Resort in Wheeling, WV. The meeting was a great success as we were pleased to offer 52 oral presentations, 34 posters and four workshops for the over 180 attendees. Our chapter also awarded $1200 in cash prizes to the top three student poster and podium presenters. The meeting's best overall student presentation was awarded to our own Emily Bierer, a PhD student at Duquesne University whose research focuses on blue and green pigment in darters. Emily was also the recipient of our annual Cooper Award, a $500 prize for student research in honor of the late Edwin Cooper. Cole Pennington of Commonwealth University-Mansfield won best student poster with his work on total phosphorus dynamics in the Tioga River Water-

shed. Dr. Stuart Welsh of the West Virginia Cooperative Fish and Wildlife Unit gave an excellent plenary - 'Hornyheads, Madtoms, and Darters: Narratives promoting public awareness of our freshwater fauna'. Good fun, food, and fellowship was had at the welcome social and the event culminated with the inaugural 'Three Rivers Throw Down' cornhole tournament with the overall title going to the team representing ORASNCO after narrowly defeating WVDEP. Competitive fisheries trivia was provided using the Kahoot! platform and emceed by past-past-president and chapter stalwart Matt Shank. It was a great experience getting to work closely with other chapters and we hope to make this joint meeting a regular occurrence.

Above: Images from the Joint OH-PA-WV AFS Meeting.

Chapter President Aaron Henning presents Emily Bierer with the 2025 Cooper Award and Best Student Presentation Award.

Chapter President Aaron Henning presents Cole Pennington with the PA Chapter's Best Student Poster Award.

STUDENT SUBUNIT UPDATES

Cornell

Nathan Wu

The Cornell AFS subunit has been actively engaged in educational and hands-on experiences. In the fall semester, we organized 'Bionight', where we collaborated with other biology-focused clubs like the Herpetology Society, Birding Club, Wildlife Society, etc. We hosted a trivia night, which attracted a fantastic turnout and fostered connections between students across various fields of biology. In the spring semester, we hosted an otolith extraction workshop hosted by the Adirondack Fishery Research Program, where participants learned how otoliths are used to determine fish age. Fish heads were then provided for the participants to experience extracting otoliths. This hands-on experience provided students with valuable experience in fisheries research techniques and generated greater public interest in aquatic science. In addition to our events, we have been maintaining our educational aquarium, following a structured volunteer schedule. We hold monthly meetings to ensure its upkeep. We also send weekly emails to our listserv, sharing a compilation of fisheries-related jobs, grad positions, internships, and events. We are excited to continue educating the public about aquatic sciences!

Participants in the Otolith Extraction Workshop at Cornell.

Cornell AFS Student Subunit members.

MATES

John Wnek

The Marine Academy of Technology and Environmental Science (MATES) subunit of the American Fisheries Society is conducting two projects that are addressing bycatch in Barnegat Bay, NJ. We are conducting a derelict fishing gear recovery program that is in conjunction with Stockton University through the NOAA Marine Debris analysis of the derelict gear collected. We are only allowed to collect derelict gear during the winter months (December through March), which are not

active blue crab capture months (using crab pots). The team consists of eight MATES students and volunteers who will join us in the field.

We have other subunit members working on ways to reduce bycatch by researching the effectiveness of bycatch reduction devices (BRDs), which are inserted into the funnel of crab pots. The question is about the size of crabs captured using BRD types, and the effectiveness in reducing the non-target catch (bycatch). The MATES AFS subunit will provide updates on these initiatives.

The MATES BRD Team holding BRD "bundles" that we distribute for free.

MATES subunit members working on the NOAA Marine Debris Program initiative.

Our first derelict item collected from an oyster aquaculture project!

Penn West

Dr. David G. Argent

Last fall, we started the year off with a float trip down the Mon River. We floated from Gallatin to New Eagle. Later that semester we had a guest speaker Dr. William Kimmel discuss the importance of macroinvertebrates and biological monitoring. In November we went to Erie for steelhead fishing and offered some help to the PA Fish and Boat Commission with their steelhead collection efforts.

For the month of March, we are forgoing a formal meeting and instead taking a field trip to the Rolling Rock Fish Hatchery.

AFS Penn West members with nets on a trout run.

Connor Haskins with a nice Steelhead trout.

We will meet with Mike Allen, the hatchery manager and staff there. They will be giving us a tour of the facility and their stream habitat improvement work. In April, we will be taking a canoe trip either down the Monongahela River or the Youghiogheny River, it largely depends on flow and temperature. In addition, we will be traveling to Linesville to help the PA Fish and Boat Commission spawn their walleye. We have also been participating with Mission Mondays sponsored by the PA Fish and Boat Commission. I am currently trying to arrange a meeting with Normandeau to discuss what they do and job prospects.

Recent December graduates Connor Haskins, Emma Gowton, and Abbey O'Farrell with Dr. Argent.

Québec

Erin Francispillai

This past year the AFS-Québec (AFS-QC) Student Subunit has grown in membership and acquired club status at McGill University. In Fall 2024, we hosted a social event – "Find Your Shoal" – to increase our community, sell AFS-QC merchandise (t-shirts and sticker sale), and gather in-person. In September 2024, two members from our executive committee were also able to attend the 154th Annual AFS meeting hosted in Honolulu, Hawai'i. Both members were granted travel awards (from AFS Northeastern Division, John E. Skinner Memorial award and/or AFS Equal Opportunities Section) to attend. This event allowed us to branch out and connect with a much wider AFS

Veronica Groves (AFS-QC vice-president) receiving the Aloha Student Travel award from the AFS Northeastern Division for the 154th Annual AFS meeting in Honolulu, HI.

Erin Francispillai (AFS-QC graduate representative) receiving the Aloha Student Travel award from the AFS Northeastern Division for the 154th Annual AFS meeting in Honolulu, HI.

community. We even met other Québec-Canadians, gaining new contacts/external university representatives for our team back home! On March 25, 2025, the AFS-QC Student Subunit hosted our third annual symposium, "Communicating the Current – Aquatic Sciences in a Social Environment" at the PGSS Thomson House situated on McGill University's campus. Our event showcased aquatic research from student members across five different universities/institutions in Québec, hosting over 60 attendees and 24 presenters (French and English). We were very excited to present Dr. Zofia Taranu from Environment and Climate Change Canada (ECCC) as our symposium keynote speaker. Dr. Taranu is a freshwater ecologist specializing in statistical modeling of ecological systems, with a focus on multi-trophic responses to environmental stressors. In addition, she participates in local science outreach initiatives, sharing her interests with broader audiences. Our event also hosted a panel of science communication professionals: Laurence Martel (Outreach for Organisation Bleue), Isabel Julien (Science Communication Advisor for ECCC), Marie-Christine Lafrenière (podcast host of "Les Lucioles"), and Dr. Andrew Hendry (Professor of Biology at McGill University). In the lead-up to the event, we created an information booklet for the symposium and coordinated funding sources from McGill University, the

Attendees, presenters and speakers of the AFS-QC's 3rd annual symposium: 'COMMUNICATING THE CURRENT – Aquatic Sciences in a Social Environment'.

Erin Francispillai (AFS-QC graduate representative) receiving the Equal Opportunities Section Student Travel Award for the 154th Annual AFS meeting in Honolulu, HI.

AFS-QC's Executive Committee.

Québec Centre for Biodiversity Science, the Biology Graduate Student Association, the AFS Education Section, and the AFS Atlantic International Chapter. We also held an art competition and sticker design competition. Entries were showcased and voted for during the event, and awards for best presentation

Veronica Groves (AFS-QC vice-president) with the John E. Skinner Memorial Award for the 154th Annual AFS meeting in Honolulu, HI.

and most sustainable project were handed out as well. Our symposium was low-waste and accessibility-friendly, and we received Platinum level certification through McGill University's Sustainable Events Certification Program – the highest level offered. Overall, the AFS-Québec Student Subunit is continuing to grow in community and science communication.

AFS-QC Find Your Shoal event here

Rutgers

Hails Tanaka

The Rutgers University Subunit of the American Fisheries Society (RU AFS) had an eventful year! We tabled at the annual Rutgers Day held by the University in April 2024, and we showcased the amazing fish and shellfish in the local New Jersey waters with a fun interactive activity. This past April and September, we hosted two seine day experiences for graduate and undergraduate students from Rutgers University and Stockton University at the Rutgers University Marine Field Station (RUMFS).

We ran seine nets along the shore and identified cool animals local to the area. Members of RU AFS attended both the national AFS meeting in Hawaii,

Presidents from September 2024 (left to right): Hails Tanaka (current president), Sam Azaimo (past-president), and Lauren Cook (past-past-president).

Rutgers Day 2024 (left to right): Alex Ambrose (treasurer) and Lauren Cook showcase the local aquatic species in New Jersey.

as well as the joint Mid-Atlantic Chapter and Northeast Division meeting in New Brunswick, NJ. In the spring semester, we held a graduate student panel for undergraduates across the New Jersey area. We had participants from Rutgers, Stockton, and Monmouth Universities.

Our members reached above and beyond this year. We had Sam Alaimo present part of her dissertation work at the national meeting in Hawaii. At the MAC-NED joint meeting, Lauren Cook was awarded the Special Achievement Award by the Northeast Division and Rachel Davitt won Best Student Poster. Many of our members were also present at the joint meeting, including all members of the executive board of RU AFS. Current treasurer Alex Ambrose submitted and published her first first-author publication in Journal of Shellfish Research this past winter.

Seine Day at RUMFS in April 2024.

Stockton

Mark Sullivan

Stockton University Marine Science Program students attended the Mid-Atlantic Chapter / Northeastern Division AFS "Examining Infrastructure and Fisheries Interactions" joint meeting in New Brunswick, NJ (Oct. 27 – Oct. 29, 2024). Undergraduate students Mackenzie Briggs, Juan Diego Chaparro, Bryan Gaskill, Ryan Luty, and Alexander Wendel participated in the Mentor / Mentee Luncheon, which paired students with AFS fisheries professionals, while Landon Geddes and Seth Sims presented at the evening poster session on oyster aquaculture and striped bass stock origins, respectively. The "Introduction to Gyotaku (Art of Fish Printing)" Professional Development Activity inspired Marine Biology / Environment Science double-major Seth Sims to offer his own Gyotaku workshop at Stockton University on Feb. 28, 2025 in coordination with the Stockton Fishing and Conservation Club. Students were supported at the MAC-NED AFS meeting by Stockton faculty Adam Aguiar, Dana Christensen, Christine Thompson, and Mark Sullivan. Stockton students are looking forward to additional opportunities to connect with AFS during the upcoming year!

Stockton alum Jared Handelman and Seth Sims present research on striped bass stock origins and microhabitat preference.

University of Connecticut

Jeremy Cruz

The AFS UConn subunit has been providing a lot of career building experience for our members since last spring through both hands-on and professional development type events. We've had biologist presentations, resume workshops, trash cleanups, fish collection facility tours, and more. Our most successful meetings by far have been fishing trips where members can come out, learn how to fish, how to identify common fishes of Connecticut, and simply engage in the outdoors! We're excited for what the rest of the spring holds for us!

An example of Gyotaku fish printing from the MAC-NED AFS meeting professional development workshop.

University of Delaware

Rachel Roday

Over the past year, the University of Delaware (UD) AFS student subunit has continued to foster connections between students and professionals in fisheries science and marine conservation. We were thrilled to

host a series of guest speakers, including professors from nearby universities (Stockton, UMCES), and the director of a nonprofit dedicated to shark conservation. These talks provided students with valuable perspectives on current research, career opportunities, and conservation efforts across a variety of disciplines.

In 2024, several of our members traveled to the American Fisheries Society Annual Meeting in Honolulu, Hawaii. The conference brought together professionals, early-career scientists, and students from across the country. It was a fantastic opportunity to engage with innovative research, attend workshops, and network with leaders in the field. In addition to academic exposure, our subunit hosted a viewing of the Mid-Atlantic Fishery Management Council (MAFMC) meeting, giving members a unique opportunity to observe real time fisheries management discussions. We look forward to continuing this momentum in 2025 by creating even more opportunities for our members to learn, connect, and grow!

MAC AFS UD subunit executive committee attending the 2024 AFS Annual Meeting in Honolulu, Hawaii. (Left to right: Noah Motz, Rachel Roday, Rileigh Hudock).

MAC AFS members attending the 2024 AFS Annual Meeting in Honolulu, Hawaii. (Left to right: Anthony O'Toole, Jasper McCutcheon, Rileigh Hudock, Daniel Millea, Dr. Edward Hale, Rachel Roday, Dr. Brendan Campbell).

University of Maine

Gregory Kronisch

This year we emphasized undergraduate participation with more hands-on activities, including our ever-popular fly tying and fish printing events. In addition, we held workshops on aquatic entomology where members picked through kick net samples of leaf litter and tried their hands at identifying macroinvertebrates, as well as another event about fish identification and the importance of using meristic characters. We also assisted the USGS Cooperative Research Unit to lead a public fish printing event at the Maine Science Festival using shiners!

As per tradition, we hosted an annual ice fishing trip to Hermon Pond during Maine's free fishing weekend. Despite our best efforts on that particularly cold and windy day, we only caught one black crappie and two chain pickerel - although it may have been the same one twice! Regardless of the slow fishing, we had a great time out on the ice and we were able to introduce nearly a dozen members to ice fishing....the hot chocolate and grilled burgers definitely helped morale.

Finally, we are in preparation for our 10th annual Spawning Run 5K at the end of April. This is our largest event of the year, drawing folks from other departments and even outside the university! In addition to running on the official race day, some runners have opted to participate virtually throughout the week. The event is our primary fundraiser and helps us improve on-campus activities and outreach events for the following year.

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

Subunit president, Greg Kronisch, shows off a shiner at a fish printing activity for the Maine Science Festival.

Fly tying workshop (with mood lighting) led by our secretary, Jakob Hallett.

Members of the student subunit at Maine's free fishing weekend.

Fisheries News

Introduction to the Union City Aquatic Conservation Center

Joshua D. Arnold, Pennsylvania Fish and Boat Commission

The Union City Aquatic Conservation Center (ACC) is the first facility of its kind for the Pennsylvania Fish and Boat Commission (PFBC). While the other twelve hatcheries operated by PFBC focus on producing gamefish to be stocked for the use of recreational anglers, the ACC focuses on the restoration of non-game native species through the release of propagated and cultured species. The ACC originally had its start in 1905 as the Union City State Fish Hatchery. During that time, the facility cultured a wide variety of gamefish species over a century as a hatchery. In 2018, the first freshwater mussels were added to the hatchery in addition to the gamefish production. In 2022 the decision was made to switch from gamefish production to non-game species.

The primary focus of the ACC has been the propagation and rearing of freshwater mussels. Freshwater mussels are among the most imperiled groups of animals in North America with upwards to 70% of species being listed at either a state or federal level and roughly 10% of species are extinct in North America. The causes of the decline of freshwater mussel fauna include historical over exploitation, changes to habitat and water quality, and the introduction of invasive species.

Freshwater mussel propagation is a slow and labor-intensive process. Adult mussels are collected from local streams and checked for gravidity by looking for swollen gills in female mussels. At the

Freshwater Mussels being propagated in the hatchery.

ACC the freshwater mussel larvae, or glochidia, are collected from female mussels using hypodermic needles inserted into the gills to gently flush the glochidia from the gills. The glochidia live on the host fish for upwards of six weeks before dropping off as juvenile mussels where they can be collected and counted. Juvenile mussels are added to various recirculating aquaculture systems as they grow, where they are fed algae. During warm summer months, larger juveniles, greater than 10 mm, are moved out into ponds where they can feed on live algae.

After about two years the juvenile mussels have reached about 25 mm, where they are large enough to be stocked out into several watersheds in Pennsylvania. Streams that are stocked with propagated freshwater mussels include Dunkard Creek, Allegheny River, Clarion River, and Kiskiminetas River. Since 2018, more than 22,000 juvenile mussels have been stocked by ACC staff with goals of stocking more than 35,000 in the next three years. To date the ACC has worked with ten species of freshwater mussels including the federally endangered Northern Riffleshell.

While freshwater mussels are the focus, the ACC currently works with one non-game fish species, the Chesapeake Logperch. It is currently listed as threatened in both Pennsylvania and Maryland due to limited distribution.

Since 2023, the ACC has held roughly 50 adult fish with the hope of getting them to breed and then raise the fry to juvenile size before being stocked. Similar operations are currently being done at Pennsylvania State University and Lamar National Fish Hatchery (USFWS). To date the ACC has produced roughly 1,000 fry, but unfortunately no fry has lived past 10 days due to a variety of reasons.

In addition to freshwater mussel and non-game fish restoration efforts, the ACC is also dedicated to head starting Blanding's Turtles. Blandings Turtles are among the rarest species in Pennsylvania. Head starting is the process of raising hatchling turtles in ideal conditions with amble food, so they grow at an accelerated rate. Hatching turtles are held at the ACC for nearly a year before being released. Instead of being released at the size of a one-year-old turtle, prone to predation, they are released at roughly the size of a five- or six-year-old turtle making them less likely to be predated upon with a healthy fat storage to allow them to adjust to a natural environment.

In the future, the ACC looks to continue raising the number of freshwater mussels stocked and increasing the number of species, as well as expanding into new species of non-game fish and herpetofauna. In the next five years, PFBC is looking to refit and upgrade an existing hatchery in Huntsdale PA to be a sister facility to the ACC that will focus on the rearing of American Shad and Freshwater Mussels native to the Susquehanna River Watershed.

Chesapeake Logperch

Blanding's Turtles

Environmental DNA Confirms Shortnose Sturgeon in the Connecticut River Between Turners Falls, MA and Bellows Falls, VT

James Garner works in Dr. Jeremy Andersen's insect lab at UMass Amherst to extract DNA from filters. A fish-free space is ideal for keeping low concentration samples uncontaminated. Photo credit Kate Buckman.

James Garner, University of Massachusetts Amherst

"UMass Amherst PhD candidate James Garner and Dr. Kate Buckman of the Connecticut River Conservancy (CRC) have made a significant discovery: environmental DNA (eDNA) analysis has confirmed the presence of the endangered shortnose sturgeon (*Acipenser brevirostrum*) in the Connecticut River upstream of two hydropower dams between Turners Falls, MA, and Bellows Falls, VT. This provides the first definitive evidence validating long-standing anecdotal reports of the species in these waters. The research team detected sturgeon DNA at multiple locations and time points upstream of the Turners Falls, MA and Vernon, VT dams, indicating the species may exist in sufficient numbers to be regularly detected using eDNA. This discovery comes at a critical time - as the relicensing process for multiple hydropower dams and a pump-storage facility, owned by Great River Hydro and FirstLight Power Resources, is underway in the studied section of the Connecticut River.

James Garner hands a collected water sample to a colleague on the boat. Photo credit Kate Buckman.

These findings raise important questions about how shortnose sturgeon reached upstream habitats despite historic dam barriers. Further studies using additional techniques are now needed to better understand these populations, their historic and present connectivity, and habitat usage and needs.

This research was made possible through funding from the Lucy Downing Nisbet Charitable Fund, Bank of America Co-Trustee and the Jack and Dorothy Byrne Foundation."

Link to the press release here.

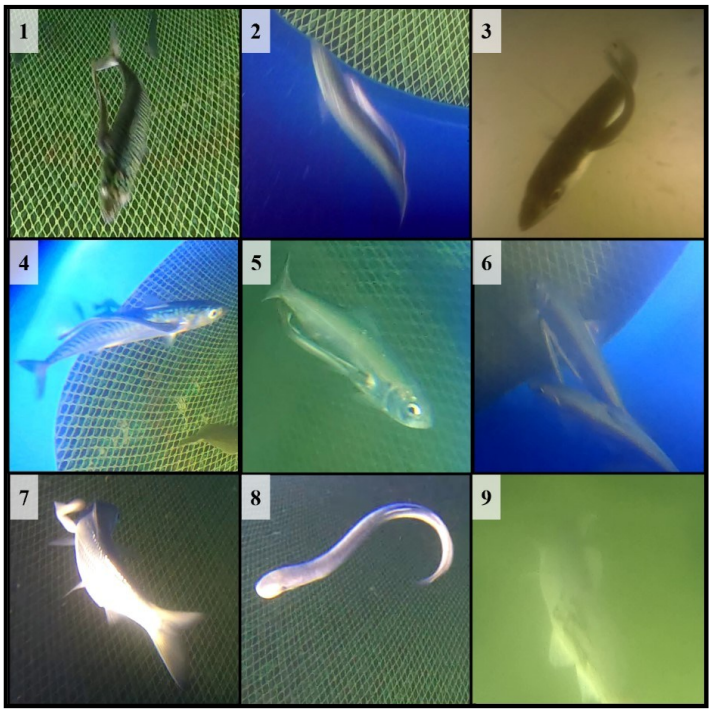
UMass Dartmouth Researchers Use Innovative Video Trawl Survey to Observe Rare and Endangered Marine Species

Nicholas M. Calabrese

New Bedford, MA – Researchers at the University of Massachusetts Dartmouth's School for Marine Science and Technology (SMAST) are leveraging cutting-edge video trawl technology to study marine species in their natural habitats, providing new insights into rare and endangered species in the Gulf of Maine.

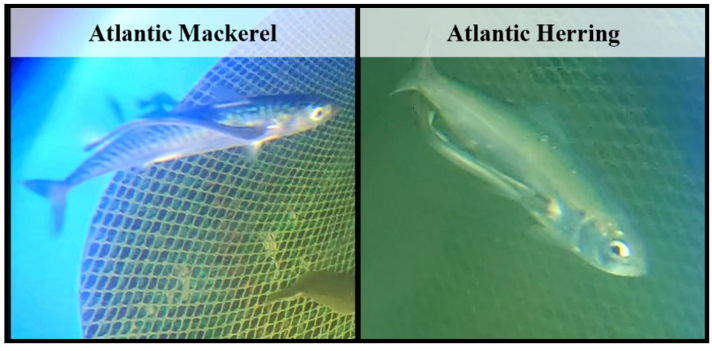
The SMAST video trawl survey is a non-invasive optical system designed to observe fish populations using cameras and lights, eliminating the need for traditional, more invasive sampling methods. Unlike conventional trawling, this approach allows researchers to collect critical data on species distribution and behavior while minimizing environmental impact and fish mortality.

The SMAST video trawl was initially designed as an alternative method for assessing groundfish stocks but has since proven valuable for documenting the behaviors and distributions of rare and endangered species. This work underscores the importance of non-invasive research methods in advancing marine science and preserving biodiversity. The most recent surveys, conducted between 2019 and 2025, revealed remarkable observations:



Sea Lamprey (Petromyzon marinus): 46 instances of sea lamprey were documented, with eight observed during winter surveys. Host species included Atlantic mackerel, Atlantic herring, and haddock, with lamprey sizes ranging from 5 cm to 22 cm. This data offers valuable insights into the poorly understood marine stage of sea lamprey.

Atlantic Sturgeon (Acipenser oxyrinchus): A significant aggregation of 43 endangered Atlantic sturgeon was recorded during a single open-codend tow off Race Point, Cape Cod, Massachusetts. The sturgeon, measuring between 5 and 7 feet, were captured on video in situ, highlighting the potential of this technology for studying critically endangered species.

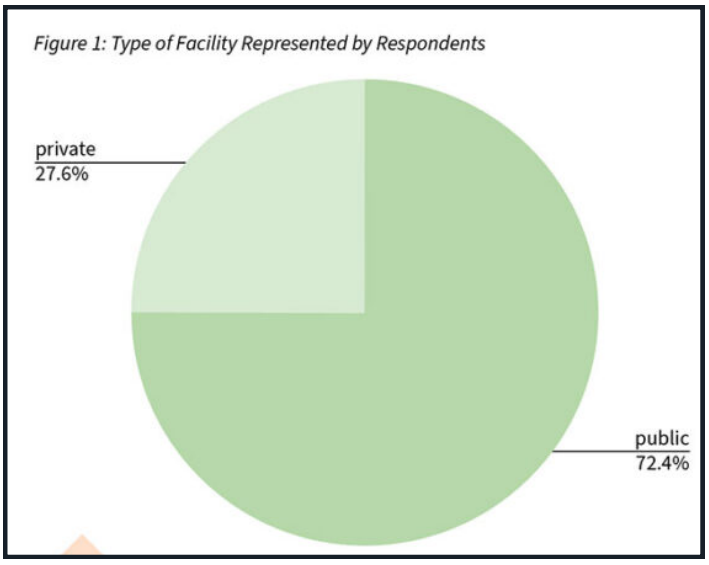


Hiring for the blue future: A survey on hiring practices within North American aquaculture

Sheila Chairvolotti and Thomas Chairvolotti

"Individuals seeking to enter the field of aquaculture are often given varying advice about the training and skills which are needed to obtain a job in aquaculture. Within the field of aquaculture there are many career opportunities, including jobs from the level of seasonal employment through program administration. Many hatchery managers and aquaculture company owners are asked to share with students and prospective employees at career fairs or other events to explain how best to prepare for a career in aquaculture. In this advisory capacity, aquaculture personnel often relay their own career path or the hiring standards of the organization that they represent."

Link to the full article here.



Of the 196 responses, 142 were from representatives of public aquaculture facilities and 54 were from private facilities.

Flatfish Biology Conference 2024

Stephen Dwyer

The 18th Flatfish Biology Conference took place on November 13 and 14, 2024. Conference organizers and co-chairs Steve Dwyer and Elizabeth Fairchild welcomed attendees and Northeast Fisheries Science Center Director Jon Hare provided lively opening remarks. His presentation, based on a survey of registrants, included a flatfish word cloud and quotes on what attendees enjoy most about studying flounder. Jon also recognized outgoing conference co-chair Renee Mercaldo-Allen for her service. Steering Committee member Tom Munroe followed with a keynote address about the "amazing but relatively poorly known" hogchoker. A total of 19 talks and five poster presentations rounded out the program and included presenters from Nova Scotia, Texas and Washington State. The Steering Committee expressed appreciation to several departing long-time members including Chris Chambers, Carla Curran and Elizabeth Fairchild (co-chair for the 2022 and 2024 meetings) and welcomed incoming members Mark Wuenschel of the Northeast Fisheries Science Center's Woods Hole Laboratory, Stacy Farina of Howard University and David Taylor of Roger Williams University. Donations from HDR Engineering, Southern New England Chapter of the American Fisheries Society and the Dominion Foundation helped to make the 2024 conference possible.

FBC Steering Committee 2024.

RECENT PUBLICATIONS

Description and potential sources of a shell deformity in North Amercan freshwater mussels (Unionoida)

In Journal of Aquatic Animal Health

Peter D. Hazelton, Andrew Gascho Landis, Andrew McElwain, Kyle Olivencia, and Jason Carmignani

Abstract:

Objective: Freshwater mussels of the order Unionoida are among the most imperiled taxa in North America, and many species are undergoing enigmatic decline without fully understood causation. Disease pathology and parasitology have been identified as areas with significant knowledge gaps in relation to these declines. We investigated a shell deformity of unknown cause that is widespread in northeastern North America by adding to the clinical description from a mussel assemblage in Massachusetts with a deformity prevalence exceeding 50%. We build upon previous qualitative descriptions of this deformity with investigations of shell morphology and mussel age.

Methods: We conducted a qualitative survey of the mussel community to evaluate the prevalence of deformity. Mussels were classified as deformed based on the presence of a distinct truncation of the posterior margin of the shell. For the eastern elliptio Elliptio complanata, we evaluated the shell height, shell length, and height : length ratio of animals classified as deformed versus normal and we conducted a comparison to a reference population. We also incorporated shell thin sectioning and aging to qualitatively describe the deformity in cross section and to compare age distributions between deformed and normal eastern elliptio.

Result: We observed the presence of this deformity in four species, including the eastern elliptio, eastern lampmussel Lampsilis radiata, eastern pearlshell Margaritifera margaritifera, and creeper Strophitus undulatus. In cross section, the deformity

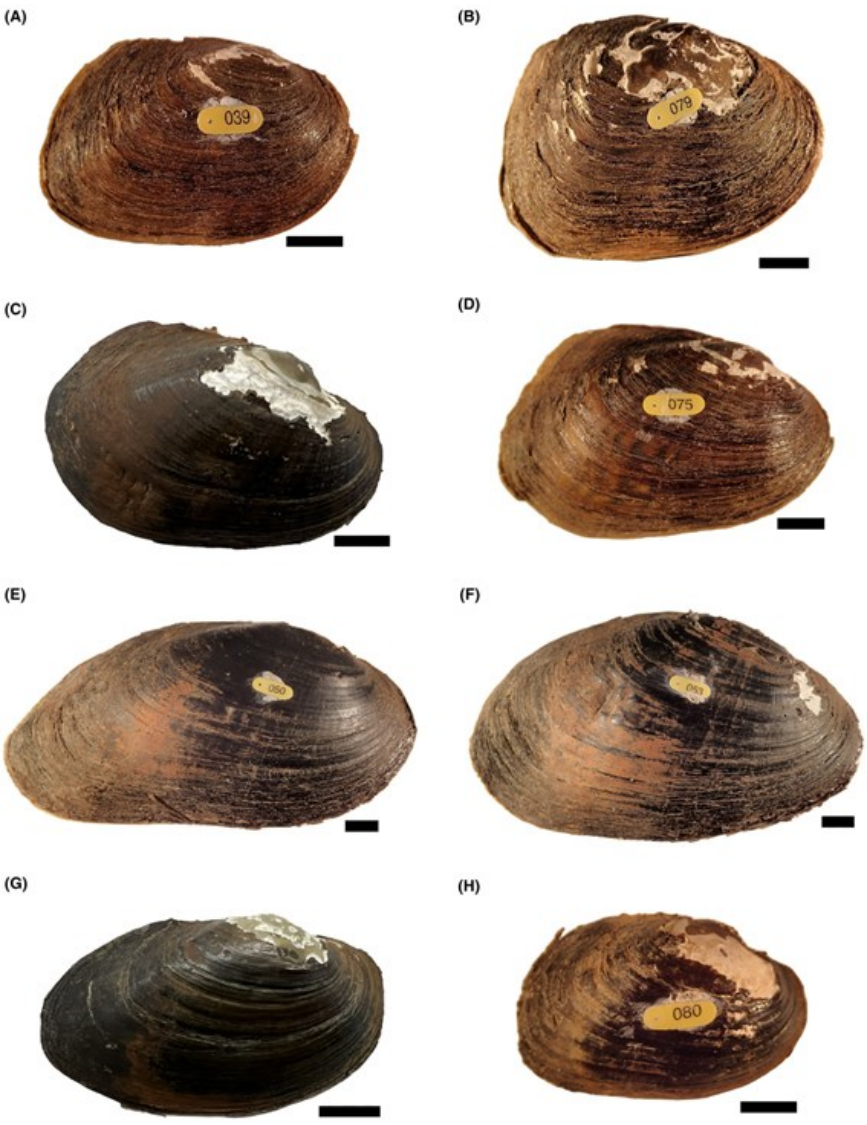


Figure 2. *(Left) Comparative presentation of normal (left) and deformed (right) shells across species: (A), (B) eastern elliptio; (C), (D) eastern lampmussel; (E), (F) eastern pearlshell; and (G), (H) creeper. All specimens were collected at the North Nashua River, Massachusetts, study site except as follows: the eastern lampmussel in panel C was collected from the Taunton River, Plymouth County, Massachusetts; and the creeper in panel G was collected from the Mill River, Franklin County, Massachusetts. (Scale bars = 1 cm).*

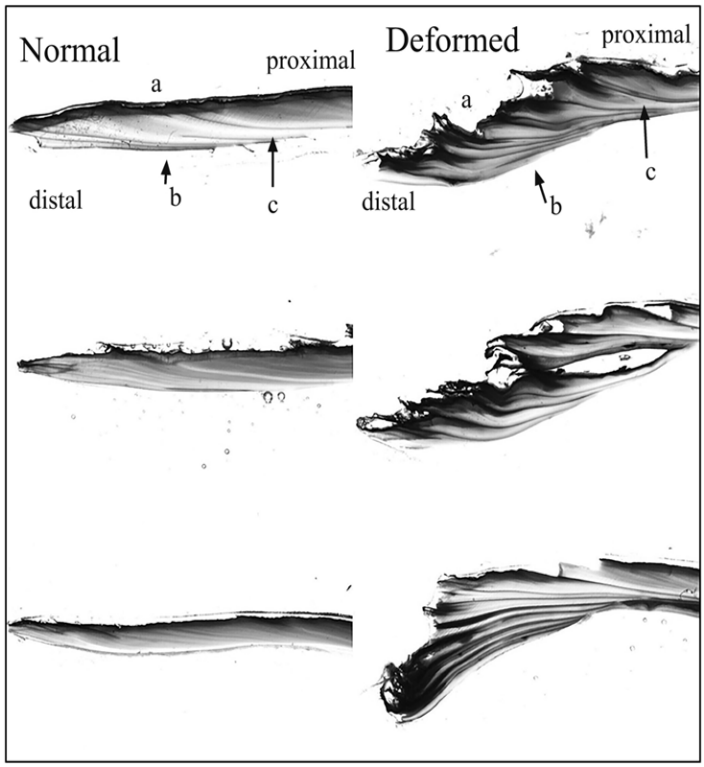


Figure 4. *Comparison of shell thin sections from normal (left) and deformed (right) eastern elliptio. Each picture represents a thin section from one individual. Sections were made through the umbo (proximal) to the posterior -ventral (distal) margin of the shell, showing the periostracum (a), the nacreous surface (b), and the growth rings (c). Deformed mussels were characterized by what appears to be a repeatedly broken or disturbed trajectory of growth, resulting in a ragged periostracum and possible disturbance rings.*

appeared to be caused by repeated disturbance in growth in the posterior portion of the shell. Deformed eastern elliptio had markedly shorter shells for a given shell height when compared to normal and reference mussels, and they tended to be older at shorter shell lengths than normal mussels from the same site.

Conclusion: The cause of the shell deformity in the United States remains unknown, although it appears similar in description to the deformity caused by a commensal midge, Xenochironomus canterburyensis, which infects a distantly related freshwater mussel in New Zealand. We highlight potential causes and the need for further investigation.

DOI: 10.1002/aah.10232

Shifts in habitat use and demography of American lobsters in coastal Maine (USA) over the past quarter century

In Marine Ecology Progress Series

Robert N. Jarrett II, Damian C. Brady, Richard R. Wahle, and Robert S. Steneck

Abstract: Some species are so linked to specific environments that their habitat association almost becomes a species-defining character and is used by managers and policymakers to direct their conservation. The American lobster Homarus americanus is among the most valuable fisheries species in North America and among the best studied benthic marine invertebrates in the world. Its populations and habitats have been studied and detailed in publications for over 35 yr. This lobster species was known to dwell in shelters, and their populations had historically been concentrated in shelter-providing boulder habitat. Our study revisited 20 long-term monitored sites at 10 m depth along more than 320 km of the Gulf of Maine. Surprisingly, we recorded fundamental changes in lobster abundance, habitat use, and distribution. Specifically, lobster population densities declined overall and occupancy in boulder habitats declined 60%, while densities on featureless ledge and sediment habitats increased 633 and 280%, respectively, from 2000 to 2019. Lobster rock shelter occupancy declined in recent years, but average body size increased, due in part to declines in smaller size classes. These demographic changes may result from both reduced recruitment and intraspecific competition resulting from the lower population densities. Habitat changes at our monitored sites included declines in kelp abundance, increases in diminutive algal turfs, and nearly 3°C warming of benthic water temperature in July (1995–2021), some of which may have contributed indirectly to those shifts. While these changes in shallow water habitat and demography have implications for the lobster fishery and stock assessments, it also illustrates previously undescribed behavioral plasticity.

DOI: 10.3354/meps14691

First records of threadfin shad (Dorosoma petenense Günther, 1867) in the upper Delaware River estuary indicate northward range expansion

In Bioinvasion Records

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

Abstract: We provide the first records of threadfin shad (Dorosoma petenense) in the Delaware River estuary, and the first records of this species in the Delaware River basin since they were stocked in a pond but unable to over-winter in 1977. We collected threadfin shad by boat electrofishing on four separate sampling events and in two tributaries to the Delaware River from August 5, 2022, to August 30, 2023. We briefly speculate on the potential impacts of the species, provide mechanisms to explain their occurrence, and discuss our findings in the context of climate warming and range expansion. These records provide the northernmost account of threadfin shad on the eastern seaboard of North America, excluding a questionable record from the Atlantic Ocean near Nova Scotia in November 1998. **DOI:** 10.3391/bir.2024.13.2.19

Figure 3. *Photograph of threadfin shad (Dorosoma petenense) (top) and gizzard shad (Dorosoma cepedianum) (bottom) collected in Cooper River Lake on August 5, 2022.*
Photograph by David H. Keller.

Indications of recovery of anadromous fishes in a mid-Atlantic estuary of North America: Spatial and seasonal patterns near a dam

In Marine and Coastal Fisheries

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

Abstract:

Objective: Rivers on the east coast of North America once supported vast runs of anadromous fishes, such as Blueback Herring Alosa aestivalis and American Shad A. sapidissima. Declines in runs were attributed to, in part, dams and poor water quality that have since been improved by fishways and improvements to wastewater treatment, respectively. The goal of this study was to determine the status of anadromous fishes upstream and downstream of a dam in a heavily urbanized tributary that has undergone improvements in fish passage and water quality.

Methods: We used boat electrofishing to index fish densities during the spring and summer over 2 years.

Result: We found a substantial run of anadromous Blueback Herring, a species that was extirpated in the 1970s but observed in low numbers in the 1990s and early 2000s. We also found a general

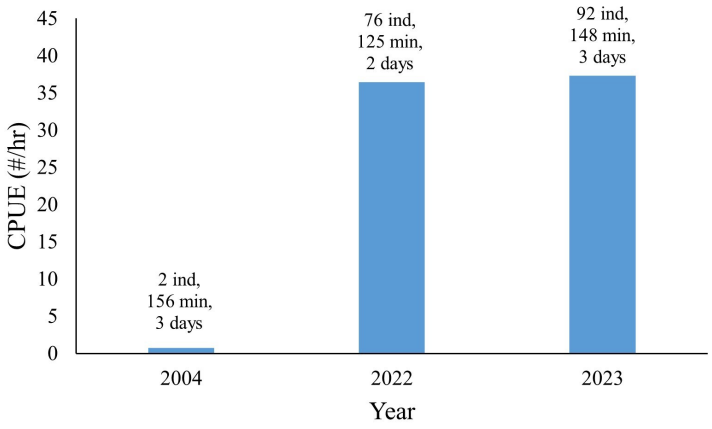


Figure 6. *Boat electrofishing CPUE (catch per hour) grand mean for Blueback Herring caught in Cooper River Lake in the spring of 2004 (Smith 2005) and this study in 2022 and 2023. Total number of individuals caught (ind), minutes (min), and days electrofished from May 5 to June 1 are shown for each year.*

pattern of decreasing densities of Blueback Herring and Striped Bass Morone saxatilis upstream of the dam than downstream, suggesting that the dam remains a major impediment to the full recovery of Blueback Herring and other anadromous fishes despite a fish ladder being installed in 1998.

Conclusion: Our study demonstrates that highly urbanized rivers, such as the Cooper River, can and in some cases do support substantial runs of anadromous fishes. It is important that urban waters be considered for restoration efforts such as improved fish passage to increase access to historical spawning grounds if these fisheries are to recover. Continued monitoring of urbanized streams and tidewater is needed to better describe the long-term responses of anadromous fishes to efforts that ameliorate threats caused by urbanization.

DOI: 10.1002/mcf2.10320

Evidence for size-based predation risk during Atlantic salmon (Salmo salar) smolt migration

In Journal of Fish Biology

Matthew A. Mensinger, Alessio Mortelliti, and Joseph D. Zydlewski

Abstract: Hatchery supplementation is frequently employed during the conservation and recovery of imperilled salmon populations. At the smolt stage, hatchery rearing practices often produce individuals that are larger than wild conspecifics. Under this 'bigger is better' strategy, it is assumed that larger fish are less susceptible to predation during migration. We tested this hypothesis on hatchery-reared Atlantic salmon (*Salmo salar*) smolts with fork lengths representative of those of natural and hatchery origins, allowing us to isolate the influence of size from rearing history. From May to June 2023 we characterized predation risk for acoustic-tagged ($n = 50$) and tethered ($n = 192$) smolts of various sizes through a mostly free-flowing section of the Penobscot River, Maine, USA. Across both methods, more than 50% of smolts were predated, with the majority of predation events being attributed to smallmouth bass (*Micropterus dolomieu*). Tethered smolts of all sizes experienced similar predation risk. In the acoustic telemetry component of this study, smaller, wild-sized smolts incurred greater overall mortality relative to standard hatchery sizes (95% vs. 75%), the majority of which occurred within 3 km of the release site. Collectively, these results allude to a strong predation influence imposed by smallmouth bass on smolts in freshwater sections of the Penobscot River and small-bodied migrants may incur greater predation risk, particularly near stocking sites.

DOI: 10.1111/jfb.70011

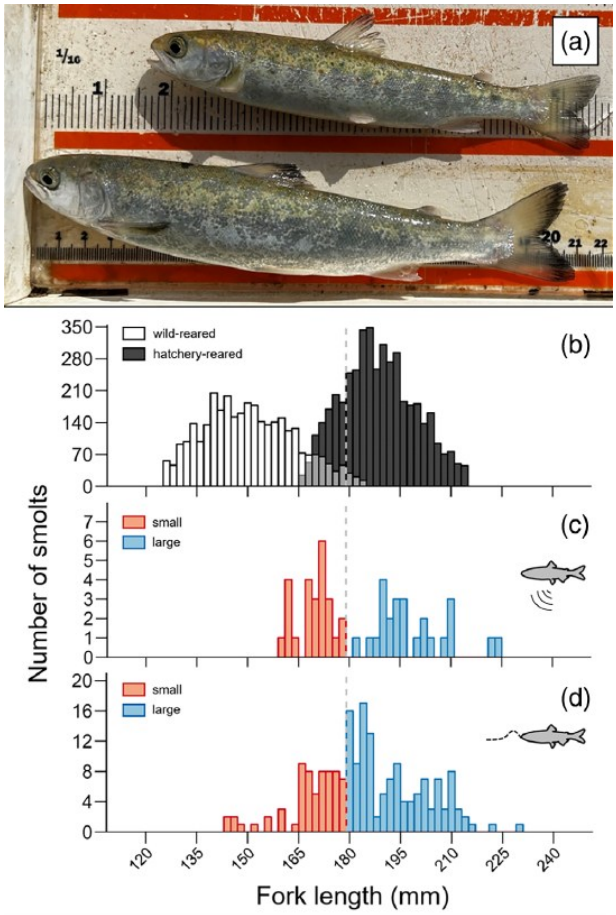


Figure 1 Differences in fork lengths for Atlantic salmon (Salmo salar) smolts used to assess length-based predation risk. (a) Examples of Atlantic salmon smolts from small (top, 167 mm fork length) and large (bottom, 202 mm fork length) length classes used in this study. (b) Lengths for central 95th percentiles of naturally reared smolts captured in rotary screw traps (white bars) and acoustic-tagged, hatchery-reared smolts (dark-grey bars) in the Penobscot River Watershed, Maine, USA. Fork lengths for (c) acoustic-tagged and (d) tethered smolts used in the study for small (red bars) and large (blue bars) size classes. All histograms binned by 2-mm intervals and dashed grey line (x = 179 mm) distinguish small from large size classes.

Patterns in Fish-Assemblage Structure Over a Decade of Monitoring in the Upper Delaware River Watershed

In Northeastern Naturalist

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

Abstract: The Upper Delaware River watershed has historically maintained high water quality and healthy fish assemblages. Emerging threats such as climate change could negatively affect this watershed as increased streamflow, precipitation, and temperature have been observed. We monitored fish assemblages at 6 tributaries in the Upper Delaware River watershed over the last decade (2013–2023). We found an overall stable state of assemblage structure with low amounts of variation, demonstrating the resilience of this community. We calculated index of biotic integrity (IBI) scores and found that biotic integrity appeared stable throughout the course of our study. Lastly, we identified trends in increasing densities for *Rhinichthys cataractae* (Longnose Dace) and *Anguilla rostrata* (American Eel) as well as an oscillating pattern in American Eel mean lengths over time.

Conclusion: Our study demonstrates the resiliency of fish assemblages in the Upper Delaware River Watershed over the last decade. Assemblages have remained largely intact with small amounts of variation. IBI classifications indicate continued integrity of this system. Considering concerns surrounding American Eel populations at the beginning of the century (Bowlby 2018, Castonguay et al. 1994, Haro et al. 2000), increases in American Eel densities in the Upper Delaware River watershed and other recent studies (Bowlby 2018, Kahn 2019) are encouraging. We also document a cyclical pattern in American Eel lengths over time that may be related to the NAO. American Eel length can be used as a proxy for age (i.e., Zhu et al. 2013), and this pattern likely reflects cyclical patterns in the emigration of larger silver eels and the immigration of smaller yellow eels. Future monitoring studies in the Upper Delaware River watershed should focus on responses to climate change and invasive species. Observed changes in the density for 2 common species in our study may be related to climate change, and more changes could follow. Additionally, 2 invasive species, *Channa argus* (Cantor) (Northern Snakehead) and *Pylodictis olivaris* (Rafinesque) (Flathead Catfish), were recently documented in the Upper Delaware River watershed within the last decade (US Geological Survey 2024a, b). These species have spread throughout the lower Delaware (Brown et al. 2005, Rohrback et al. 2023, Smith et al. 2021) and have had negative effects on native species in Mid-Atlantic systems (Rohrback et al. 2023, Schmitt et al. 2019). Both Northern Snakehead and Flathead Catfish prey upon American Eel (Rohrback et al. 2023, Schmitt et al. 2019), a migratory species of conservation concern. Spread of these 2 invasive species in the Upper Delaware watershed could alter trophic dynamics and degrade ecosystem health. These invasive species were not encountered in our sampling, suggesting absence or low densities in these streams. Moving forward, future monitoring is needed to document and assess any impacts emerging threats such as continued climate warming and invasive species may have on fish assemblage structure in the Upper Delaware.

DOI: 10.1656/045.031.0203

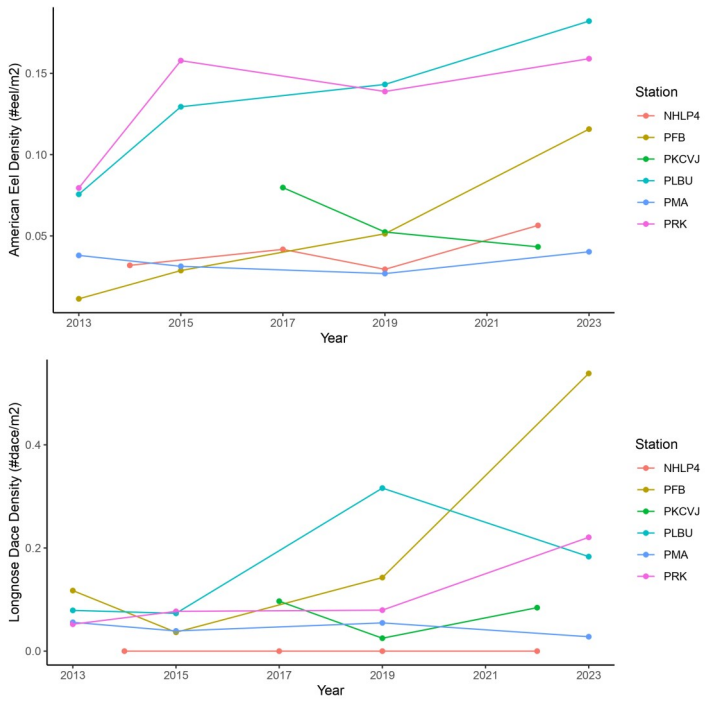


Figure 3. *American Eel and Longnose Dace average densities (#/m²) at 6 stations sampled in the Upper Delaware River watershed from 2013 to 2023.*

ACKNOWLEDGEMENTS

Thank you for contributing to the 2025 Northeast Fish Rapper!

Atlantic International Chapter of AFS

Cornell Student Subunit

MATES Student Subunit

Mid-Atlantic Chapter of AFS

New York Chapter of AFS

NOAA Northeast Fisheries Science Center

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Stockton Student Subunit

University of Connecticut AFS Student Subunit

University of Delaware AFS Student Subunit

University of Maine AFS Student Subunit

Meet the Editors

Carolyn Merriam is the fisheries biologist for the Houlton Band of Maliseet Indians in Maine. She graduated from the University of Maine Orono with her M.S in Wildlife Ecology in 2024.
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Poushalee Banerjee is a 2nd year PhD student at the University of Pittsburgh. Her research focuses on the interaction between native and non-native aquatic species, environmental policy, and GIS.
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