Winter 2026 Edition

AFS SNEC Newsletter

SNEC Winter Science Meeting

On Wednesday, January 14, 2026, 137 participants from seven states attended SNEC's one-day winter science meeting at the University of Rhode Island. The program featured 16 talks and 19 poster presentations spanning both freshwater and saltwater fisheries.

AFS President Elect Margaret Murphy, Previous SNEC President (2023-2024) Corinne Truesdale, SNEC President Elect Max Zavell

From left to right: Tracy Maynard, Abigail Archer, Max Zavell, Eric Schultz, Karina Mrakovcich, Syma Ebbin, Margaret Murphy, Michael Burgess, Christian Conroy, Stephen Dwyer

Recently Published Member Research

Counting eggs before they hatch: Comparing metrics of spawning seasonality in Blueback Herring

In situ observations of juvenile Sea Lampreys in the Gulf of Maine from a noninvasive trawl survey

Movement dynamics of MYY and wild Brook Trout in southern Rocky Mountain streams

SNEC Student Section!

UMASS AFS Student Subunit *Update!*

The UMass AFS Student Subunit held two member meetings in 2025. During the first meeting, 20 students and potential members were introduced to AFS, and the group discussed future activities like practical skill workshops (net mending, fly tying), service projects (river clean-ups) , networking, resume-building, and group trips to sites such as hatcheries and Gloucester Marine Station. The second meeting was a joint event with the UMass Wildlife Society student chapter where 30+ attendees deployed minnow traps in the Campus Pond, providing hands-on experience in fish identification. The first Spring meeting of 2026 will include mending gill nets and purse seines (and there will be pizza!) New ideas and collaborations are welcome. Please contact Reese Dorroh (*rdorroh@umass.edu)* or Becca Cusick (*rpcusick@umass.edu*) to get involved!

Student & Job Opportunities

Director, Division of Fisheries and WIldlife, Westborough, MA

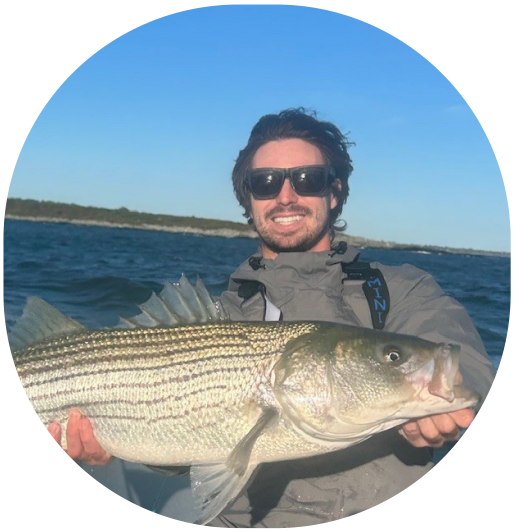
Summer 2026 Boat Captain, Boston, MA

HS Teaching Assistant, Woods Hole, MA

Marine Science Educator, New London, CT

Q&A with Connor Coscino

Interview by Katherine Helmer



Connor Coscino is currently a PhD student in the Brewster Fisheries Lab at the University of Dartmouth's School for Marine Science and Technology (SMAST). His research focuses on using quantitative techniques to improve and promote ecosystem-based fisheries management methods. At the most recent SNEC meeting, Connor presented on how portfolio theory, an economic theory used to manage risk in portfolios of economic assets, can help us better manage our fisheries.

Adding an Economic Theory to the Tackle Box for Commercial Fisheries Management

You're currently a PhD student at SMAST. Could you describe your journey and offer advice to prospective PhD students looking for a program?

I grew up in Southern California and really loved fishing, so I always knew that I wanted to do something related to that. For my undergraduate degree, I went to UC San Diego and majored in marine biology. That's where I first became involved in research at the Scripps Institution of Oceanography (SIO). I got involved in the California Collaborative Fisheries Research Program, or CCFRP. For that project, I was working on evaluating California's network of marine protected areas through hook and line surveys. I ended up working in that lab as a technician throughout my undergraduate career and ultimately led those research surveys. I stuck around and did a master's degree at SIO working on data limited fisheries assessments, and that's what started my interest in quantitative fisheries science. After graduating with a master's degree, I took a job as an environmental scientist with the California Department of Fish and Wildlife doing salmon restoration work in Northern California. That was a good life experience, but I really wanted more opportunities to learn and continue developing. At the time, a friend of mine from SIO had started a PhD at the UMass Dartmouth School of Marine Science and Technology (SMAST). After talking with him about what he was learning and the research he was doing, I realized that I needed to go back to school and pursue higher education >>

Q&A

Right before my job appointment was coming to an end, I coincidentally saw an advertisement for a PhD position here at SMAST, so I applied and now I'm here!

As far as advice, I would say: create opportunities for yourself. You really need to go out and create a space to make these opportunities happen. Then, take those opportunities and follow science, wherever that may take you.

You had a master's degree and field experience. What motivated you to pursue a PhD?

I really wanted more of those analytical skills, and I just wasn't going to get that working at an agency job. I also just really enjoyed doing research and answering research questions. I wanted to do research that had direct management impacts and was contributing to the wider conversation in the field. I would also say that the outlook for salmon in Northern California has not been great and there's some major issues with how the water is used there, so to work around those major issues without really addressing them was a little bit tough for me. I wanted to move away from that and do research that people would actually listen to.

Your SNEC presentation on Modern Portfolio Theory for Multispecies Management introduced economic concepts to fisheries science. What is portfolio theory and how does it relate to fisheries?

Modern portfolio theory originated in the field of finance as a method for constructing a portfolio of financial assets, such as stocks and bonds, by looking at the trade-offs between risk and return. When you have a diversified portfolio, some assets may decline in value. However, that decline can be mitigated by other assets that are increasing in value, so your portfolio's overall revenue remains stable. The key finding here was that diversifying assets that are negatively correlated, or assets that behave independently from one another, can reduce your overall portfolio risk. Risk is a funny thing because, despite its prevalence and importance, nobody can really define it, and nobody can really agree on what it means. So, I think it's best to think of it as uncertainty about a future outcome that we can try to quantify. Traditional financial literature uses volatility as a measure of risk, but there's plenty of debate about this. >>

Q&A

To apply this to fisheries management, we can think of each fishery as a financial asset that can continue to produce revenue indefinitely, assuming that we are harvesting them sustainably. The revenue from each fisheries asset is variable due to different biological and economic factors. When we try to look at the variance of many different species together, some species may become more available during certain periods than others, and there might be more revenue from some species than others. So, we can take advantage of this to try to identify the optimal harvest strategies considering the different risk and return trade-offs. This can help us look at how efficient the harvest is and how the risk profile for a fishery has changed over time. It could also be used to explain fisher behavior. For example, maybe they're becoming more consolidated around certain fisheries for an economic reason, and we can see that because the full catch limit of another fishery isn't being completely taken advantage of. We can also use this strategy to think about permitting structure to see if having tightly constrained permits is reducing how fishers are able to diversify their catch. Using this theory, we can evaluate the commercial fishing landscape for management entities like the state or federal government or the commercial fishers themselves. There are different scales of how you could look at this, and you can structure the analysis differently depending on what you want to find.

Pause!

For those of us who maybe only took, say, one economics class in high school and then forgot about it completely like the author of this Q&A, I've included an example below that explains the application of this theory in a bit more detail. For those that want more background information, I found that watching this YouTube video on portfolio theory was helpful for me before conducting this interview

Q&A

During his analysis (spoiler), Connor has identified that the monkfish fishery isn't being fished to its full potential – that is, fishers rarely hit the catch limit in pounds for monkfish. The reason for this could be that it's not very economically efficient for fishers to catch a lot of monkfish, because the price for this species is very low compared to others. They can focus their attention and gear on other species that sell for higher prices to cover their operating costs and make a profit.

However, the monkfish fishery has been more profitable in the past. "Monkfish were quite popular in the 90s and early 2000s.", Connor says. "They were featured in a cookbook recipe and their popularity exploded. Monkfish were also commonly eaten overseas, so there were a lot of opportunities for exports. Then the fishery got overfished, and since they weren't as prevalent in markets and were more difficult to export, fishers and exporters found alternatives. As a result, the pathways for marketing monkfish were lost. When the monkfish stock finally recovered, those supply chains never rematerialized, and demand couldn't bounce back."

Now, the profit to be made from fishing for monkfish isn't enough to justify hitting the catch limit. The way to apply portfolio theory to this problem from a management perspective would be to recognize this lack of economic efficiency and to find management solutions that would incentivize fishers to catch monkfish and customers to buy it, increasing the revenue coming from that fishery. That way, in the future, when revenue produced by other, more profitable fisheries declines for whatever reason, the monkfish fishery can pick up the slack, and the overall revenue of the region can remain stable. One way to do this, Connor mused, could be to reestablish some of the supply chains that had trouble bouncing back after the monkfish stock crashed.

Q&A

What findings have emerged from your project so far?

I want to condition this by saying that there's still a lot of work to do. Findings are preliminary and there's still work to do to improve the methods. But I will say that it seems to be, as I mentioned in the presentation at the SNEC meeting, that the efficiency, or the dollars of revenue per dollars of risk that the region is taking, has roughly been stable until the last few years. We've really seen a decline, and that could be due to climate change, overfishing, or other economic issues due to consequences from the pandemic. The other thing that I think has really surprised me is that in doing the optimization within the analysis, we're able to explain some of the reasons why full catch limits aren't being taken advantage of. For example, for some fisheries like monkfish (see Pause! box above) or haddock or even squid, in any given year, the full catch limit is generally not utilized, and management has been wondering why that is. Looking at fishers in aggregate, there is some amount of risk aversion in their behavior over time where they are moving away from these fisheries that are not that efficient for them. The idea is that we could sustainably harvest more, but the issue, as the stakeholders have identified, is that the prices are too low for them to want to harvest more.

Did you have a background in economics before this project? What drew you to this work, and how did you adapt to a new field?

I had no background in economics whatsoever. I took one economics class in undergrad as an elective and I don't remember anything about it. What interested me about this project was that it really was just something new. It feels relevant. It seemed like it had growing potential where I could do something meaningful. This method might become increasingly relevant in the future as we try to move to ecosystem-based management strategies. I also wanted to go to grad school, and it was within the ballpark of what I wanted to do enough to jump on the opportunity. As far as how I've been able to handle it and what I've done to learn more about economics, I've tried to dive into the financial and economic literature as much as possible, as well as other forms of financial and economic media from YouTube videos and podcasts. My strategy was basically trying to dive into these different fields as much as possible and learn whatever I can.

Planning spring fieldwork? Have questions about eDNA? Don't know where to start?

Start here.

The Gloucester Marine Genomics Institute has launched an eDNA service platform that can help you put together a project, analyze samples, and interpret results. eDNA is a developing field, and GMGI is looking to engage with scientists at any step in the process. If you're wondering if eDNA is the right tool for your project, visit the eDNA Service Platform website.

Dr. Yuan Liu, eDNA Service Platform Manager

"As the manager, one of my core goals is to position the platform as a scientific collaborator first and a service vendor second. I want partners to see us not only as a lab that processes samples, but also as a thought partner in study design. I want the platform to be approachable and collaborative. Many researchers are curious about eDNA, but are unsure how to start or integrate it. Creating a space where questions are welcomed, even basic ones, helps expand adoption responsibly."

Contact Dr. Liu at yuan.liu@gmgi.org

Stay tuned for a Q&A session with Dr. Liu in the 2026 Spring ASFS SNEC newsletter!

GLOUCESTER MARINE GENOMICS INSTITUTE