DRAFT PROCEEDINGS OF THE

ATLANTIC STATES MARINE FISHERIES COMMISSION

ATLANTIC COASTAL COOPERATIVE STATISTICS PROGRAM

COORDINATING COUNCIL

Beaufort Hotel
Beaufort, North Carolina
Hybrid Meeting

October 17, 2024

These minutes are draft and subject to approval by the Atlantic Coastal Cooperative Statistics Program (ACCSP) Coordinating Council. The Council will review the minutes during its next meeting.

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ATTENDANCE TO BE FILLED ON A LATER DATE

The Atlantic Coastal Cooperative Statistics Program Coordinating Council of the Atlantic States Marine Fisheries Commission convened in the Rachel Carson Ballroom via hybrid meeting, in-person and webinar; Tuesday, October 17, 2023, and was called to order at 8:30 a.m. by Chair Jason McNamee.

CALL TO ORDER

CHAIR JASON McNAMEE: Welcome everyone to the Atlantic Coastal Cooperatives Statistics Program Coordinating Council Meeting.

We've got a couple important things on the agenda today, so we'll call this meeting to order and take care of the first couple of items on the agenda here.

APPROVAL OF AGENDA

CHAIR McNAMEE: The first being the agenda. Are there any modifications, edits, deletions to the agenda that anyone would like to make: If you do, please raise your hand. Not seeing any hands around the table, any hands online? Geoff, can I look to you for that?

MR. GEOFF WHITE: You may, and no hands online.

CHAIR McNAMEE: No hands online either, so with that, I will look around the table to see if anybody has any objections to approving the agenda as submitted. Please, raise your hand if you have an objection. Seeing no hands around the table, and assuming no hands online as well. We will consider the agenda approved as submitted by consent.

APPROVAL OF PROCEEDINGS

CHAIR McNAMEE: Next up are the proceedings from the August, 2023 meeting. Are there any edits, deletions, corrections to those proceedings from anyone on the Coordinating Council? Seeing non hands around the table, any hands online? No hands online. I will ask the question again, are there any objections to approving the proceedings as submitted?

Please, raise your hand if you have an objection. No hands around the table, no hands online, we will consider the proceedings approved by consent as submitted.

PUBLIC COMMENT

CHAIR McNAMEE: Next up we've got public comment. There are a few folks in the room back there, is there anybody that wishes to make a public comment on anything that is not on the agenda?

No seeing any hands in the audience here, anyone online with their hand up? No hands online, either, so we will consider that our public comment period, with that we move on.

CONSIDER APPROVAL OF FY2024 ACCSP PROJECT AND ADMINISTRATIVE PROPOSALS FOR FUNDING

CHAIR McNAMEE: I was just going to move us to our next agenda items, which is Consideration for Approval of the FY2024 ACCSP Project and Administrative Proposals for funding. We've got a presentation that we'll work our way through. Just to give you something to think about. When we start to think about motions and things like that, it might be best to split the motions up, so we've got a couple of buckets here, right? We've got the administrative proposals; we've got maintenance proposals and new proposals. It might be most succinct to tackle those one by one with individual motion. Just be thinking about that as we're going through the presentation here. I think that will keep things orderly when we start to take action on these. With that I will go ahead and turn it over to Geoff first, so Geoff, whenever you're ready.

MR. WHITE: Good morning on this beautiful day in Beaufort. Before I hand it over to Julie for the presentation on the funding, I did want to note there are a few extra dimensions to the funding this year and the options. I wanted to take a moment to frame those, just to make sure that we've covered that.

First, the annual kind of expected funding of 3.5 million is normally split between 75 percent maintenance and 25 percent new. That is really the base funding and approach that was presented to the Operations and Advisors, as they ranked through

the proposals and that information went through. Another dimension is the unallocated $250,000 from last year's budget that is currently in the ACCSP Administration budget, ready to be allocated.

The decision on that in a prior Coordinating Council meeting was to maintain flexibility and have the Coordinating Council choose where and how to use those funds. Those were not automatically split to the 75 percent and 25 percent maintenance and new. Those are up for discussion; those other funds are up for discussion.

The Advisors and the Operations Committee were given advice to provide recommendations on how to use those funds, that would be useful to the Coordinating Council, but ultimately the decision on what projects get funded with the unallocated funds is of course up to your discretion and action today. I just wanted to make sure that it was clear. The rankings exist in the order and recommendations that they are.

The unallocated funds, as they come up under the motions, we try to be clear about what comes under base funding, and how the discussion and Coordinating Council wants to decide how to use the unallocated funds. That is a little bit of background on why those recommendations from the Ops and Advisors were framed that way. That was ultimately to maintain the decision making and choice at this body. Julie.

MS. JULIE DEFILIPPI SIMPSON: Good morning, everybody. I am going to be presenting today on behalf of the Operations and Advisory Committees, their recommendations and their rankings. What we wanted to do is start out by showing sort of a comparison between the Operations and the Advisors rankings. This is because we use to present them individually, and then in some recent years we've actually been just presenting the combined rankings. As you know, each person's ranking has an equal weight.

However, as we will talk about later, we have a dearth of advisors right now. Their collective opinion is not as powerful as it used to be. We wanted to separate it to show you the difference between the two groups in the ranking. We'll start with the maintenance projects here. They are color coated, so the left column is the Operations and the right is the Advisors. The colors will show you the projects that are different. In this case there are only two projects that ranked differently for the maintenance proposals. There was a lot of agreement in the maintenance proposals. For the comparison for the ranking on the new projects there was a lot more difference. I used as many colors as I could find that tried to be different, and hopefully you're not colorblind. This again just shows the difference. One of the things that you can see, however, is that in the partner columns we've colored those green, as the ones that when we combined the rankings are the ones that get funded.

One of the things that you can see is that while there are differences in the rankings, for the most part the majority of the projects that are recommended for ranking do fall into the top, for both groups. Despite their being differences between the groups, and some of the projects falling a little bit lower than other projects. For the most part there is agreement between the two groups.

But we did want to give you the visual of this, so that you could see the difference between the Operations and Advisors. As Geoff mentioned, we usually start with a 3.5 million. There has been a "FINcrease" which is a little bump up, and that has become fairly standard, so we've gone ahead and put that in there now.

That makes it 3.53 million. Then we also have, as Geoff mentioned, the $250,000 from the 2023 unallocated. That leaves us 3.78 million as the funding available. With the Administrative Grant, seven maintenance proposals and nine new proposals, the total proposed funding was 4.76 million, so obviously we don't have enough money to fund everything.

There are going to have to be some hard decisions made today, and I know that the Operations and Advisors also spent a considerable amount of time and thought in putting together their

recommendations, because they know that not funding things is always a struggle. We're looking here, and it's called average ranking, but it really isn't an average of the Operations and Advisors. Again, it's a combined ranking of the maintenance projects.

What you can see is that the top six projects are ranked in green and are proposed for funding. Then the Rhode Island project on the Whelk Research Fleet would not be funded, based on the amount of funds available, and also the recommendation of the Operations and Advisory Committees.

Using the 3.53 million, we are going to look at the new projects. The top three projects would be funded or the South Carolina Vessel Project for the Southeast Fisheries Science Center Dockside Biosampling, and then also the Massachusetts Oracle Forms Redesign. Then other proposals that were considered to be very strong, and considered that the Operations and Advisors would like to find funding for, are the Improving Catch in Effort from the Mid-Atlantic Council, and then also the Economic Impact of Rhode Island Fishing Industry.

It was asked to specifically point out that the majority of Operations and Advisory Panel member ranked the economic proposal as high as they possibly could. However, that form has a range for a module that doesn't allow a score above six, whereas biological and catch and effort can have up to a ten. Even being ranked as high as possible, it doesn't come up as high in the rankings. That is one of the reasons they are recommending going out of order. Because there is a lot of pots of money this year, and not enough money to fund everything, we tried to put together a little infographic that tries to explain how the money is being distributed. The yellow boxes represent the recommendations of the Operations and Advisory Committees. At the top you have the 3.53 million, and that gets split into the $881,000 and the $293,000 and those go into the maintenance and new proposals respectively. Then there is 2.3 million for the Administrative Grant, and that does include Option 2, which is a Xamarin option, and then there is $44,000 that does go into the GARFO Overhead.

From the $250,000 unallocated, $65,000 of that is recommended to go into the maintenance projects to fully fund that sixth project, and then the remaining would go towards the top three new proposals. Based on what the new proposals get from the 3.53 and the 250, they can fund the top three new proposals.

But then in order to fund those last two that were highlighted in orange, there is only $130,000 remaining funds, and the recommendation is to try to fund the Mid-Atlantic Council Tilefish and Rhode Island Economic with those remaining funds. I'm just going to walk through the recommendations as they were outlined by the Operations and Advisory Committee.

For the Administrative Grant, they want to fully fund the base budget, and include Option 2. They felt that Option 1, while it was important, that those funds could be used this year elsewhere, and that that Option 1 could be presented again, potentially next year. For the maintenance projects.

Their recommendations are to use a portion of the 250K which you saw in the infographic from the last slide, to fully fund the top six maintenance proposals, but should not fund the seventh project, the Rhode Island Whelk. Their reasoning for that is that that species is not in the top quartile of a biological matrix.

For the new projects, they want to use the new project banks, and the remaining portion of the 250 carry over to fund the top three new proposals. I had listed those earlier. Again, they felt the two projects that were below, which were the Mid-Atlantic Council Tilefish and the Economic Impact in Rhode Island, are both seen and valued, and the Committees recommend that they both be considered for funding.

The Tilefish Project is the next highest ranked project, and the Economic Project was again ranked as highly as possible, given the range for the program priorities. There is that early funding that Geoff mentioned earlier, as well, and the Committee's recommend that the early funding be used for

Option 2 in the Administrative Grant, and for the South Carolina DNR Project, to add HMS fields to the VESL. Both projects are able to start work on that timeline, and because of the nature of implementing those projects, no funds would need to be moved.

Activity would be able to begin fairly quickly. Finally, their recommendation is, the Committee's request that the Funding Subcommittee be convened by this group, to review and potentially update the available point ranges of program priorities in the ranking process, with the consideration of the increased importance of socioeconomic data in recent years. A number of the factors that the group cited were things like windfarms, whales, so many other projects, where socioeconomic data is becoming much more important. They feel that those projects should be able to receive a higher ranking. The Funding Subcommittee is made up of members of this group, as well as members of the Operations group. In order to convene, this group would have to charge that group to convene. As was mentioned earlier, it is probably potentially easiest on everyone's brains if we try to break this up a little bit, as we make our recommendations, so I will pass it back to the Chair for next steps.

CHAIR McNAMEE: Great, thank you so much, Julie. Okay, let's start off with any questions for Julie, before we get to work here. Any questions anybody has for Julie on the proposals or the rankings or any of that stuff? We'll let it get just a little more uncomfortably silent, just to make sure. It seems like everybody is okay. I appreciate having this slide up before us here.

You know we've got a couple of buckets, and it will probably be easiest to kind of tackle them one by one, to keep everything nice and clear. You can start off with any one of those that you would like, but looking for somebody to offer some sort of a motion on what to do with the different proposals and the funding available. Yes, so we're trying to be as helpful as possible here. We have some draft motions prepared already. No obligation, just in case it helps.

Let's start with Number 1, if we can pop that one up. This will be consideration of the Administrative Grant. Here is a proposed motion we've got up here, if somebody would like to make that. It would be to move to approve the FY2024 ACCSP Administrative Grant as the base budget inclusive of Option 2 ($50K) for a total of $2,310,327. Anybody wishing to make that? I see John Carmichael in the back.

MR. JOHN CARMICHAEL: Yes, to get the ball rolling here, I'll **move to approve the FY2024 ACCSP Administrative Grant as the base budget inclusive of Option 2 ($50K) for a total of $2,310,327.**

CHAIR McNAMEE: Excellent, thank you, John, and I have Erika Burgess with a second. We've got a motion made; it's been seconded. The seconder was Erika Burgess. Any discussion. Geoff, did you have something? Oh yes, sorry, make sure you have your microphone. Just remember to turn your microphones on.

We've got a motion, motion made by John Carmichael, seconded by Erika Burgess. John, do you wish to say anything more on that? No, Erika, anything to add? No, anyone wishing to have any discussion on the motion? Okay, not seeing any hands around the table. Anyone flagging us down online? Okay, why don't we go ahead and move this along, and I'll call the question. **All those in favor of the motion, please, raise your hand.**

MR. WHITE: Three online, got you.

CHAIR McNAMEE: Okay, so that count is 19 in favor. Actually, folks online, put your hand down. Anyone opposed to the motion, please raise your hand. Any abstentions to the motion, please raise your hand, and any null votes. Actually, can we have null votes in the Coordinating Council? Okay, great, all right, that motion passes 19 to 0 to 0. Thank you very much for that. Why don't we go ahead and move on to the next draft motion. We'll go right down the list here, so Number 2, which is the maintenance proposals. Okay, so we've got a draft motion up on the board and I've got a hand raised. I think it's Brandi. Go ahead.

MS. BRANDI SALMON: I **move to approve the top six (6) FY2024 ACCSP Maintenance projects as recommended by the Operation Committee and Advisors, including $65,819 of the $250K carryover funds.**

CHAIR McNAMEE: Thank you for that, Brandi, second by Ingrid. We have the motion made by Brandi, seconded by Ingrid. I don't know your last names yet, I'm sorry.

MS. SALMON: Salmon, pretty easy.

CHAIR McNAMEE: All right, so we've got a motion, it's been seconded. Would either of you wish to speak further to the motion? Okay, anyone else wishing to have discussion on the motion? Any hands online, Geoff?

MR. WHITE: No hands online.

CHAIR McNAMEE: All right, well why don't we keep it moving along and I will go ahead and call the question. **All those in favor of the motion, please raise your hand. Okay, thank you for that. Folks online, please put your hands down. All those opposed to the motion, please, raise your hand. No hands in the room.**

MR. WHITE: No hands online.

CHAIR McNAMEE: Okay that's zero, any abstentions? None in the room, okay, so that motion passes 20 to 0 to 0. Thank you for that everybody. We'll keep moving along here. Okay, so we've got a draft motion up here, also could have an alternate motion if anybody wanted. Dan McKiernan.

MR. DANIEL McKIERNAN: **Move to accept the recommendations of the Operations Committee with the modification of funding both the MAFMC proposal "Improving Catch and Effort Data Collection from Recreational Tilefish Anglers" and the RIDEM proposal "The Economic Impact of Rhode Island's Fishing Industry" per the agreement that these two entities reached to alter their funding request to not exceed the new proposal allocation.** I'll speak to that if I have a chance.

CHAIR McNAMEE: It didn't make its way this way, Dan, so we'll get that so we can put that up on the board. Hang on a second, folks. Okay, thanks for that everybody. All right, so we have the motion up on the board here for folks to take a look at. Motion made by Dan McKiernan, any seconds to the motion? Okay, seconded by Renee Zobel. We have a motion up on the board, it's been seconded, any discussion? Dan, I'll come back to you.

MR. McKIERNAN: Would you like me to speak to it?

CHAIR McNAMEE: Yes, please, Dan. Thank you.

MR. McKIERNAN: Following up on Julie's earlier comments of her description of the process. This proposal would have ranked higher, but not for the scoring system of the rankings, in terms of priorities. The Rhode Island DEM study particularly has broad applicability. I can't tell you how many conversations that I've been in over the last two years with the industry members arguing with the wind developers, talking about economic multipliers.

Too often, numbers are thrown around, 3.5 to 4, but we know that an economic multiplier can vary among species, depending on how the product is handled, et cetera. I'm also pleased that the Mid-Atlantic Council has kind of stepped up, and has offered to assist to maybe get these projects over the goal line. I would really appreciate support on this particular motion.

CHAIR McNAMEE: Renee, anything to add?

MS. RENEE ZOBEL: Sure, I mean I can echo Dan's sentiments about the economic multiplier. We have a study done in 2007 that I reference people to all the time for our commercial fisheries, so incredibly important after talking with our Ops member. I completely understand the rationale behind moving this up.

I had the question talking to Bob over here, sidebar about how these two projects were going to get

funded if we voted them forward. I am pleased to hear that there has been some work in the background to fully fund those projects in a way that is manageable for them.

CHAIR McNAMEE: We also have a hand online, Brandon Muffley. Brandon, unmute whenever you're ready.

MR. BRANDON MUFFLEY: Great, thank you, Mr. Chair and thanks to the maker and seconder of this motion. I certainly support it. Certainly, I support the Council's proposal. We've spent a lot of time working on this, and trying to increase engagement of our tilefish anglers in getting them to report.

I think it could provide a lot of good information as the Commission and the Councils are thinking about mandatory reporting in some of our other recreational fisheries. I think it could be really useful. I fully support the Rhode Island proposal as well. I think there has been some good economic proposals over the last few years that just haven't made it, because of the way we have things structured.

I fully support getting something onboard for Rhode Island, and supporting their project. We have already had conversations with Rhode Island about how we could modify each other's proposals, so that we could get the work done that we want to get done, or that we need to get done, at least the core components of it.

This is a little unclear. I guess you all are going to leave it to the Council and the state of Rhode Island to work those numbers out. Is that my take on what this motion means? Again, we've already been doing that, but I just want to be clear, in terms of how we're going to come to an agreement of what the funding number would be. But fully support the motion, and appreciate the opportunity to comment.

CHAIR McNAMEE: Brandon, thank you very much, and yes, just to answer your question. Roughly 130K that is available for the two, and so per the letters, they both offered that they would work to adjust the numbers in a way that allowed both of the projects to work. You know originally there was a number of like $30,000 kind of moving from one to the other that they thought they could both make work.

In any case, that is how that would work, they would just negotiate that knowing what the cap was. Both of them felt under a couple of different scenarios that they could make their projects as effective with less funding by drafting components that they could follow up with later, or other things like that. Thanks for that, Brandon. Okay, we've got two more hands online. I'll start with you, Richard Cody. Feel free to unmute whenever you're ready.

MR. RICHARD CODY: I just wanted to offer to Brandon and the Mid-Atlantic, if they require any technical support for the catch and effort data collection, please feel free to reach out to us at Office of Science and Technology. I just wanted to put that offer out there. We would be happy to collaborate on that.

CHAIR McNAMEE: Thank you, Richard. Next up I have Kathy Knowlton, go ahead, Kathy and unmute whenever you're ready.

MS. KATHY KNOWLTON: Good morning. I just wanted to add my support for these two options in particular. The Economic Impact Proposal, it's not only for the reasons that have been enumerated this morning, but also the ability for this project to be transferred to other ACCSP partners, in terms of coming up with the protocol for economic multipliers. That is one of the things that ACCSP does best, is having a partner start with one project, and it being able to be transferred to other partners, as we always refer to it as the bang for our buck. Additional reasons for this.

CHAIR McNAMEE: Next up we have Carrie Kennedy. Go ahead, Carrie.

MS. CARRIE KENNEDY: Thank you. I think I just want to express maybe a word of caution or concern, that it feels like we're maybe a little out of process. It's not so much that I disagree or don't understand the importance of these projects, but I do think that ACCSP has the ranking priorities. The Advisors and

the Operations Committee have the priorities that they have, and we are through some workshops in the future, going to be exploring the priorities and importance of things like accountability.

While I understand that there is some socioeconomic room in ranking for projects. I think that maybe what needs to happen is that we need to sort of evaluate some ranking criteria, that maybe it's appropriate at this point, because I certainly understand my state doesn't have a lot of economic information about our commercial fisheries, and I suspect that as we walk through offshore wind, and other ocean planning issues, those things are going to become more important. I think ACCSP needs to reflect that in their ranking criteria a little better.

CHAIR McNAMEE: Thank you, Carrie. You know however things work out here, I have flagged that recommendation as well, so I'll be sure to come back to that one way or the other. Thank you for that. We've got another hand online, David Gloeckner. David, go ahead and unmute whenever you're ready.

MR. DAVID GLOECKNER: Well, after what Carrie said, I can just say ditto. I think we have a process in place. Those priorities are there deliberately, right, for all of the modules. It seems like at this point we had not thought we were to the point where the economic module had risen to the degree that the other modules are prioritized. But it seems like now might be the time to move forward, and I think we will reevaluate those priorities.

I think that should take care of my issue I have with the economic survey, or the economic project. The other thing I wanted to say is, I wasn't really clear, but it sounds like she's like Rhode Island and the Council hadn't reached an agreement on how to split those funds yet, but it kind of reads like they have. We might want to just be clear that they are going to decide how to split those funds.

CHAIR McNAMEE: Any other discussion from folks? Bob, go ahead.

EXECUTIVE DIRECTOR ROBERT E. BEAL: Yes, just kind of commenting on, yes, the negotiation between the Council and Rhode Island DEM. I have the utmost confidence they'll figure it out, but it is a pretty significant cut going from those two projects totaled $225K and there is only $130K available. It's a, I don't know 40 plus percent cut to those projects.

But I think we may want to have on the record some sort of backstop, if they are not able to come to a resolution and a negotiated spot that goes back to the Funding Subcommittee, sort of the what if. I don't think it's going to happen; I think they'll figure it out. It sounds like they made a lot of progress. But probably worthwhile to have some backstop process in place, just in case they need some help finishing their negotiation.

CHAIR McNAMEE: Yes, thanks, Bob. Geoff, go ahead.

MR. WHITE: Appreciate that, Bob, and I was just talking about it. We used the ACCSP Leadership Team as kind of a subset of the Coordinating Council to accomplish that task.

CHAIR McNAMEE: Thanks for that, sounds like a good resolution there. Erika, go ahead.

MS. BURGESS: Would you like a motion to amend the current motion that's on the board?

CHAIR McNAMEE: Thank you, Erika. The interpretation I just had of that discussion just a moment ago was that we didn't have to do an amendment. But I was wrong. If you would be willing to having an amendment that would add on something to the effect of, if an agreement can't be reached by the Mid-Atlantic and Rhode Island, that the decision will be remanded back to the Leadership Group, something to that effect. I wouldn't say it like that, but something better than that.

MS. BURGESS: I don't promise better, but I'll try. I would like to make a **motion to amend to add a sentence at the end of the current motion that states if Rhode Island DEM and the Mid-Atlantic Fishery Management Council are unable to reach an agreement on how to split the funds, that the final arbiter would be the ACCSP Leadership Team.**

CHAIR McNAMEE: All right, thank you, Erika, we'll get that up there and cleared up a little here, so just bear with us. Does this look okay, Erika? Pretty close to what you offered? Great. A motion to amend has been made by Erika Burgess, is there a second to the motion to amend? Made by Megan Ware, thank you, Megan. We have a motion to amend up on the board. It's been seconded. Any further discussion on this motion to amend? No hands in the room, anyone online? Dave Gloeckner, go ahead.

MR. GLOECKNER: I just want to point out that we are saying in this amendment that if they are unable to reach an agreement, yet in the first it says per the agreement, like they've already reached the agreement. We may want to modify that to make sure that we're clear that an agreement has not yet been made on how to split those funds.

CHAIR McNAMEE: Do you have a suggestion of where that should go, David? I'm just not clear on a part.

MR. GLOECKNER: I'm not sure how to reword it. It probably should say something like the Rhode Island and the Council will work to develop an agreement how to split the funds, I guess, or to alter their request. As long as it just doesn't say the agreement. Instead of per the agreement, I'm not sure where to go with it.

MR. WHITE: From a process standpoint, I'm thinking we may want to address the motion to amend, and then ask Dan McKiernan if he would be willing to just change the word "two entities reached." Change from reached to, to reach or will reach. That way we can handle the motion to amend first, and then we're back to the main motion, and I think at that point Dan would be agreeable to a friendly amendment.

MR. GLOECKNER: That's fine, Geoff, as long as we're just clear that they haven't reached an agreement yet that works fine.

CHAIR McNAMEE: Erika, go ahead.

MS. BURGESS: I suggest that there is no alteration that is needed, we're talking about two separate agreements here. They've already reached an agreement to foot the funds. The second agreement is how they split the funds. I think we're creating extra work. We can leave it as it is.

CHAIR McNAMEE: I can live with that. Geoff can live with that. Maybe I'll look back to you, David online, does that sound reasonable to you?

MR. GLOECKNER: Yes, that's fine. I think the motion to amend is clear that the agreement that I was assuming had been met has not been met yet, so I think that's fine.

CHAIR McNAMEE: Excellent, okay. We've got another hand online, Julie Evans. Go ahead, Julie, and unmute whenever you're ready.

MS. JULIE EVANS: Yes, my name is Captain Julie Evans, I represent East Hampton Town Fishing Industry, and I would like to add my support to the economic impact of Rhode Island's fishing industry effort, as we would benefit from that information here in East Hampton, as we have also had our fishing industry work around the offshore wind industry that has placed a lot of burden on our fishermen. I would add my support to that. Thank you very much for recognizing me.

CHAIR McNAMEE: Thank you, Julie, I appreciate the comments. Let's take care of this motion to amend. Does anybody need any more time on this, any more discussion? Not seeing hands around the table, any remaining hands online? Let's go ahead and call the question on the motion to amend. **All those in favor of the motion to amend please, raise your hand.**

Okay, 20 in favor. Hands online, please put them down and we'll do any one opposed to the motion, please raise your hand. No hands in the room. No hands online. Any abstentions? None in the room, none online. Great, so the motion to amend passes. We'll get the new main motion up on the board, just bear with us. Go ahead, John.

MR. JOHN CLARK: Just a process question. Is there any reason why these can't be done by consent, without us taking a vote each time, if there is no opposition?

CHAIR McNAMEE: I don't know, I'm going to look to my right. All right, thank you, John, for making us more efficient.

MR. CLARK: Yes, as a geezer, you know raising my hand all the time is getting tiring.

CHAIR McNAMEE: Getting worn out, sorry, John. We'll take it easy on you now then. Okay, so we're back to the main motion here. The amendment has been, well, it's the main motion now. Any further discussion on this before we call the question? None here in the room, no one online, so let's take John Clark's, sorry I was just checking.

We have the main motion here, **are there any objections to the main motion? If you object, please raise your hand. None in the room, none online, so the motion passes by consent**. Great, thanks everybody, appreciate that. With that, we can move on to the final motion here. Okay, this one had to do with the early funding. There it is.

Okay, so we have a draft motion for folks to consider. The draft motion here is to **move to approve early funding option (November 2023) be used for Option 2 of the Administrative Grant ($50,000) and for the new SCR DNR project to add HMS fields to VESL, on the order of $112,900**. There is a draft motion, anybody wish to make that motion? Motion made by Erika Burgess, is there a second? Seconded by John Carmichael. Any discussion on the motion from anyone?

No hands in the room, anyone online? Okay, why don't we try the John Clark method here again. **Are there any objections to approving this motion? If you object, please raise your hand. No hands in the room. Any hands online? Motion passes by unanimous consent**. Thanks everybody. All right, before we move on to the next item, I just wanted to get back to you. There was a recommendation for some tasking to the Funding Subcommittee. There was some discussion about the economic data. I think it would hold for some of the social science stuff that may be needed moving forward. I was wondering if anybody wants to speak to potentially tasking the Funding Subcommittee.

I don't think we need to make a motion here, I think we can just make the request to take up that recommendation at the Ops Committee, if anybody wishes to. I just wanted to remind folks that that was kind of in the information that we received. Back to the Board, anybody want to make a comment on that? Yes, Carrie, go ahead.

MS. KENNEDY: Yes, I'm happy to make the recommendation that they need to reevaluate and consider boosting socioeconomic and accountability in ranking.

CHAIR McNAMEE: Great, thank you, Carrie. Not a motion here, just a request made. Anyone else wishing to speak to that? Erika, go ahead.

MS. BURGESS: I was very excited to see this brought up in the ACCSP briefing materials for this meeting. I am very passionate about the social sciences, and their value to our decision-making process. I would like to see them receive higher ranks as projects are considered in the future, and I encourage the Committee to reevaluate those rankings.

CHAIR McNAMEE: Excellent, so a couple of folks in favor of some tasking to the Funding Subcommittee. Anyone else wishing to comment? Any hands online? David, go ahead.

MR. GLOECKNER: I was just going to lend my support to revisiting the priorities. I think it's about time.

CHAIR McNAMEE: Great, thank you very much. I think that is all based off the recommendation that we received, so I think we've got enough guidance there, so I appreciate that everybody. Let's move along here.

CONSIDER APPROVAL OF SCIFISH POLICIES FOR ACCSP'S CITIZEN SCIENCE MOBILE APPLICATION

CHAIR McNAMEE: The next agenda item that we need to tackle is Consider Approval of SciFish Policies for ACCSP's Citizen Science Mobile Application.

We had kind of a little preliminary meeting a month or so ago, where some of the information was introduced. You've had some time to think on it a little bit. Here we are to kind of make the final call here. With that I will turn it over to Julie, to take us through a quick presentation, so Julie, whenever you're ready.

MS. SIMPSON: What I want to do today is just talk about the SciFish Policies. We're going to do a little bit of a shorter version than we did in August. But if there are any questions, we can definitely go back and answer them. We do want to start out by thanking the SciFish Organizing Committee.

They've been working on this project for about three years now, and putting together the applications that exist, and in doing the beta testing, and a lot of writing for creating the policy's that you got in your materials. Thank you to everyone from all of these organizations that participated in this process. An introduction to SciFish is that Citizen Science is evolving, and it is a very potentially powerful tool for better understanding fish populations. Citizen Science is a tool that has even been mentioned in the Atlantic recreational priorities. There is a growing interest in Citizen Science to supplement data collection. The development of SciFish, which is not just a mobile application for collecting the data, but also the project builder, where folks can build their project, will help support capturing and sharing information on the Atlantic coast.

Our long-term goal is to develop the Citizen Science mobile application, the project builder, so that you can easily create a customizable application. This will remove the need to develop standalone applications, and will help to standardize the data. Some of the drivers of this are to reduce the cost needed for each of the individual projects, by removing the need to develop software for each project, reduce the time to create applications from the ground up in getting a project going, and increase the consistency in the data fields and data structure.

One of the things that we did want to sort of reemphasize, is that this doesn't necessarily make projects free, there are other costs to standing up the projects that are part of your outreach and other aspects of the projects. Even though the software is potentially free, it just reduces the cost of projects, it doesn't eliminate them altogether.

Moving on to the SciFish vision and mission, these are stated in the policies. Again, this is about standardizing data fields, centralizing the collection of data, therefore those data are more available for science and management, and by giving a flexible project builder platform, we've minimized the cost and resources needed for more projects.

We wanted to note a few of the additions and changes that have been made since the August meeting, based on the recommendation from this group. We did add language that the SAP, which is the Advisory Panel recreational group, will bring in their consulting expertise as needed. We did specifically note statistical skills in MAT language.

We did also add language about account creation in the policies itself, and the privacy policy link, which previously was not an active link now does link to a website with privacy policies. SciFish administration and oversite, it will be administered through the ACCSP, and the primary oversight will be by the SciFish Advisory Panel or SAP.

This is a new group within the ACCSP. The role of the SAP will be to draft and recommend the SciFish policy updates as they are needed. Then to oversee and implement the SciFish application process, which I will talk briefly about in a minute. Then also, to coordinate and review SciFish project updates. We feel it's very important to make sure that we are checking in with the projects that we have, to make sure that they are maintaining the standards, and doing the things that they said they were going to do in the applications.

The approach for project development is that we are focusing on data collection from marine and diadromous fisheries on the Atlantic coast, specifically filling data gaps or data deficiencies that have been addressed by research needs, oftentimes stock assessments recommend research or data collection, and this is a place to fill those gaps. We want to use intentional design, and clearly articulate how the data are collected, and also how those data are going to be used in management and/or stock assessments. This is something that needs to be identified prior to the beginning of a project, not after the data have been collected. Finally, this encourages the collaboration between scientists and fishermen. The application process is multi-step. There is going to be a preapplication. We will be accepting those in April, June, October and December. Then there will be full applications that are accepted in February and August.

These are designed to coincide with other funding opportunities, so that as you get funding from another source you can then step through the SciFish application process and use that project builder, rather than developing software on your own. For the application topics, there are boxes here that list all of the topics. We did go over these in August, so I'm not going to go over each one of them in detail.

But I do want to point out that the ones on the right, the last two columns are in the full location only. The preapplication is designed for us to get an idea of your project. Once you are approved through the preapplication, then you will be allowed to submit a full application. At that time the application is a little bit more intensive.

We will ask for things like the data management plan volunteer training plan and communication plan, which indicates to folks that they should have those, because if you can't upload one and/or write one for us, then that is a gap in your project planning. For the review criteria, in the preapplication we are essentially looking for, have you answered all of the questions fully.

If you have, are you addressing how the data will be used in assessment inner management, and also, is this project a good fit for citizen science. Very important to recognize that not all projects are a good fit for citizen science. It's a very useful tool, but like any other tool, it can't be used for everything. In the full part application, we do have a more rigorous review. Those criteria are ranked by specific numbers, and they are ranked by the entire group.

An average of those rankings is taken, and then if the score is not high enough for any, if there are any criteria that falls below a three, then that application would not be approved. We would work with the applier, in order to fit them up to the point of being accepted. For account creation we have Option 1, which is currently in place.

This is a SAFIS account, which is a standard ACCSP account that is created by a PI. A second option would be an auto approval, essentially this is a non SAFIS account, and so someone could essentially just sign up, and then the user would be creating their own account in the SciFish project.

Option 3 is a combination, where a PI would choose whether they wanted to use Option 1 or 2. We previously mentioned that this was an important aspect that needed to be addressed, because there was interest by North Carolina to be using Option 2, and that due to the number of people that they were going to be having, creating those accounts was going to be burdensome for their staff.

That situation has become potentially more critical, and so I will allow Brandi to speak to that later. But that is definitely something that will need to be addressed, probably rather sooner rather than later. Some of the additional policy topics that are covered in the documentation that you'll receive, are hardware requirements, data access to resources, security, transparency, branding. All of these items are covered in the materials that you received. You also have the link that you received in August with a video on how the project builder works, and all of those were available in your materials. Some of the key takeaways is that, if you are a project PI, you do need to be either an ACCSP partner, or you need to be sponsored by an ACCSP partner.

Sponsor's will essentially be not required to do the work, but making sure that the work that is being done is meeting the proper standards. We are focusing on supporting citizen science. In the beginning we are going to be limiting the current data fields, and not adding new data fields, just in the interest of simplifying the initial rollout of the project.

Then we wanted to again reemphasizes that project development doesn't require funding, but it does use ACCSP resources. We will have to create a SciFish Advisory Panel, and that will be done through applications from individuals, and then recommendations from this group or appointments from this group, rather.

Then we will definitely have to address account creation quickly. The process that we've gone through is that we presented to this group in August. We presented to the Operations and Advisory Committee at their meeting in September, and they did make a motion to approve, and recommend approval from this group, and that has been done. Today we are putting this in front of you as consideration for action.

Finally, we did want to talk about the rollout of the project. If it is approved today, then in December we will finalize the project builder and all of our outreach documentation, including a new page on the ACCSP website. In January of 2024, we would put out a call for the SciFish Advisory Panel members, and then in February, membership would be approved and we would hold our first SAP meeting, and then the first round of preapplications would begin to be accepted in April of 2024. I will turn it back to you, Mr. Chair.

CHAIR McNAMEE: Excellent, thank you so much, Julie, good info. We've got a couple of folks who can help out as the questions are coming along, so we might go to other folks, besides just Julie. Open it up to the Council for questions. Yes, Brandi, go ahead.

MS. SALMON: Yes, so I just first want to give some kudos to Julie and all the staff that are working on SciFish. They are awesome, and they've been working so hard to consider all the different avenues and things to be able to finalize these things here. Good job to you folks, you guys are awesome. One thing that Julie kind of mentioned a little bit earlier was the Option 1, Option 2 and Option 3 for being able to create, Option 1 being to create the accounts and Option 2 is not creating accounts.

The direness that Julie was adhering to was that North Carolina just last week had legislation passed that requires mandatory reporting of five species in North Carolina, which is like, Oh my gosh! There is some expectation that that reporting would be through a smartphone application, which is right up this alley here. But we haven't made any decisions on how we're going to move forward with that, but it would be extremely important to put a lot of eggs in the basket of making sure that we can build in the flexibility in SciFish, to be able to have the option to not require every person to create an account. If every person in North Carolina that fishes, millions of anglers have to report to an Ap, it's just not possible for us to be able, it would create an account for every single person. The ability to have options when you come into SciFish to have a project in there, to be able to do something like that is really what we would love to have. I think that other states would be able to benefit from that as well.

CHAIR McNAMEE: Thank you, Brandi. Any response, Julie or Kathy or Julia?

MS. SIMPSON: I would just say that we are, I think in the SAP or in the SciFish Organizing Group. I think a lot of those folks may rollover to the SAP. But we are very aware of that, and so I think that moving to Option 3 is going to be the desired path forward, especially because there are projects, such as relief through the South Atlantic Council that do like the ability to be able to connect with each of their users, and do that outreach. By having that need to create the account through them, is actually an important aspect of their project. I think that because there are varying needs Option 3 is likely going to be the necessary technology moving forward.

CHAIR McNAMEE: Yes, John, go ahead.

MR. CARMICHAEL: It's great to see this coming to fruition. You know it was an idea a long time ago to develop a tool like this, so it's really awesome the work that you guys have done, getting it this far. I think it's interesting hearing from Brandi, with the idea of using this for something that's mandatory reporting, because I think out of the gate that sort of puts us in a thought of, you know what really is the purpose of SciFish.

The vision says its citizen science, and you know we've always tried to separate the idea of citizen science, the people doing things voluntarily, from mandatory catch reporting, the kind of stuff that is covered by things like the vessels and eTrips and that sort of thing. I think it's great to have the tool.

But I do think it could be perhaps a challenge for fitting something like that into this framework, because once you make something mandatory, you are kind of changing the game of fishermen. One of the goals of citizen science is to keep it voluntary, and let people help us fill data gaps. You know it's going to be interesting to see where this goes. I think we do need to resolve the idea of creating the accounts, because one of the values of having, there has to be a count, obviously.

It's got to be efficient if you get thousands of people, I can imagine. Seeing what it takes to deal with a few people, that is going to be a challenge. We should try to work that out at the end of the day, we do still have that ability to have useful account information, and we can track the fish throughout the system.

Because that has been a hallmark of the ACCSP process, and I think it's really important to making sure the data you use are using and get in these programs, can be put in the context of all the other data collection programs that are out there, because that's always been a challenge of kind of one-off things and studies that people do. If you can't take a bunch of measured fish and know whether or not they are duplicates of an MRIP sample or a TIP sample. Then you get into assessment world and it's like, well, I can't necessarily use those fish. The beauty of what ACCSP has done, is to let you know you can use those fish, and I can put this fish that was reported and released, in the context of a TIP sample or an MRIP sample, et cetera, and know where this fish fits into that greater pool of stock assessment data. As long as that part if preserved, I think it's fine to have some flexibility in how individual entities come up with creating accounts.

CHAIR McNAMEE: Appreciate the comments, John. Any response, Julie? Okay, just wanted to check. Brandi, go ahead.

MS. SALMON: I just wanted to respond to John's comments. Even if SciFish is not the vessel for mandatory reporting, it would still be nice to be able to have the technology built in to a system, to be able to go to something, even if it's something outside of SciFish. But having it in SciFish for other projects that would be voluntary, would be beneficial to other people as well.

CHAIR McNAMEE: Excellent. Okay, we've got one hand online, and then I'll come to you, Marty. Richard Cody, go ahead.

MR. CODY: Yes, just wondering if Julie could speak a little bit to data access. You know we've talked a lot about setting up an account and so on, but maybe you could elaborate a little bit on how that might work.

CHAIR McNAMEE: Go ahead, Julie.

MS. SIMPSON: Sure. Right now, the PIs automatically have the ability to look at their data and manage it in the Data Warehouse interface. As with any other data, ACCSP is acting as the stewards of these data, and the PIs are the owner of the data. If you are interested in access to the data's current new project, you would need to contact that PI.

If they give you that approval, then we would allow you to see those data through the Data Warehouse application. Part of the outreach will be a website that has a list of all of the projects, and a little bit about each of those projects, so that anyone who is potentially interested in data could at least see those projects listed on the website, and also the PI contact information, so that they could initiate that process.

CHAIR McNAMEE: Richard, any follow up?

MR. CODY: No, that's great. Thank you, Julie.

CHAIR McNAMEE: Great, Marty, go ahead.

MR. MARTIN GARY: Thanks, Julie, for the presentation. Just a question about the Advisory Panel. The call is going to go out in January. Can you give some more insight on what you are looking for, the size and makeup, you know when we put that call out, what are we looking for?

MS. SIMPSON: Yes, we're looking for a group of approximately 8 to 12 people. We would like as much variation as possible, in terms of regional representation. In our previous presentation we did have a slide where we are looking for someone from each of the primary regions. We want state folks, we want federal representation, we would like to see an Ops Member and a Coordinating Council member on there, as well as an Advisor.

We are also looking for one staff member to be on that group. We are looking for a range, but we recognize that if you're an Ops Member and you also happen to be from the northeast, you can wear both of those hats, to check those boxes. What we will do is we will be putting out an announcement, at minimum through the ACCSPs monthly committee newsletter, and then potentially through some other avenues of soliciting applications, and then this group would make appointments to that SAP.

CHAIR McNAMEE: Other discussion, questions, anything? John.

MR. CLARK: This is more just curious about North Carolina's mandatory reporting. Besides the logistical nightmare, how was it going to be enforced?

MS. SALMON: Good question.

MR. CLARK: I figured as much, but I just wanted to ask.

MS. SALMON: Yes, there is specific legislation language that has sort of a phase in approach, so we have essentially a year to build whatever we deem appropriate to be able to collect the data. Then after that year, we start with verbal warnings, and then a year after that we start with, I think some kind of written warnings. Then after that, another year after that it would be like a $35.00 ticket or something like that.

MR. CLARK: Did they give you much funding?

MS. SALMON: They gave us 5 million dollars to spend in a year.

CHAIR McNAMEE: There are no hands left around the table, anybody online? Okay, so this is an action item. What we are looking for is some sort of a motion, potentially to approve or whatever else you might wish, but we are looking for some action here. We have a proposed motion up on the Board, if anybody wishes to make it, or start there and modify it. John, go ahead.

MR. CARMICHAEL: Yes, I think this is good, so I'll **move to approve the SciFish Policies and the launching of the SciFish Project Builder and application**.

CHAIR McNAMEE: Thank you, John, so the motion has been made by John Carmichael. Anyone wishing to second that? John Clark seconds the motion. John Carmichael, anything you wish to add as the maker of the motion?

MR. CARMICHAEL: Yes, again, just to recognize the years of work that have gone into this, and seeing this as a flexible tool. Maybe this is just the start of the type of work that we can do here with these types of things, be more efficient. Years ago, we spent a lot of money building a lot of apps, so it's nice to see this get to this point.

CHAIR McNAMEE: John Clark, anything to add?

MR. CLARK: No, Mr. Chair, I'm exhausted from raising my hand so much.

CHAIR McNAMEE: You had two there without, adding that second, sorry. Okay, so any further discussion by the Board? Any hands online? All right, so let's try this approach again. **Are there any objections to approving the motion that is up on the board? If you object, please, raise your hand. No hands around the table, any hands online?**

All right, so the motion passes by unanimous consent. All right, thanks everybody, and really nice job to the team that has been working on this for so long. It's super cool.

PROGRAM AND COMMITTEE UPDATES

CHAIR McNAMEE: All right, moving on to the next agenda item, we have Program and Committee updates, and I'm going to turn that over to Geoff White, whenever you're ready.

MR. WHITE: Excellent, thank you, Mr. Chair. Just before we move forward, I also want to say thank you to Julie and the entire SciFish group that has brought that forward. It's an excellent amount of work and effort that they've brought to us, and it's a movement for ACCSP to start addressing more of the citizen science data collection and dissemination in a new zone, so very excited about that.

For our program updates there is usually a long list of ongoing activities. Today we've got a short list of focus items that we did want to share and highlight with you in this presentation. The first one is just a quick point that ACCSP is now fully staffed. We added Skye Thomas to the data team in July. She is a Virginia native, she completed her Masters at UNC Wilmington, and her shellfish and aquaculture and GIS information is going to be very useful.

She is currently working a lot on the biological module, and the data inputs into that from a couple of our partners. Welcome, Skye! Moving forward to the software. The software group has been quite busy with a long-term project, the validation project. Julie hosted a workshop in May of 2023. This is really focused on electronic trip reporting, the SAFIS eTrips application. We had a lot of different partners in person for a week-long meeting there, and they really went through the process and data flow details of the diagram below.

You don't need to read at this point, but it was identifying all of the data flows of where work was occurring, where it was occurring on paper or is it manual, where it could be electronic, and where could those items be added in to that SAFIS electronic trip reporting, as data field validations, responses back to the end user to improve data quality and those types of items.

The red stars are listed as kind of the pain points. Here are items that took a lot of manual effort, or had a lot of difficulty in completing those tasks, and then the yellow stars are validations that needed to occur. Some of this was an in-person process, some could be electronic. One of the exciting things about this is we did have funds from FIS to move forward and begin the programming from that. That project has already begun. What you can see here. We have a contractor, we've got funds from FIS, and we've begun to program the validations into the background of how eTrips works. That includes an interface in SMS, the SAFIS Management System, testing of how that works. The partners are going to be required to enter some information about what are the boundaries that can be entered into those fields.

We're working now on some of the core fields of that, and between now and February, we'll be adding in additional validations, in terms of what are the range checks, is it numerical or is it character. Then what are the warning messages that should come back. In January, we'll be focused more on the attributes.

The attributes of some of our software naming of detailed items that are a lot more flexible, that might be individual partners. They might be fields that can be added or subtracted, depending on what permit you have and what type of report you're submitting. I just wanted to give you guys an update that this work that had been defined earlier in 2023, is now ongoing, and we're looking to implement that in early 2024.

This is in line with some of the software long term project plans. The items in 2022 were completed, and the items for 2023 registration tracking is an additional way to manage the fishermen, the dealers, the entities, the business entities in between them, and who can see different records and have access to things.

That is a structural change we're doing internally at the moment, and that will be rolled out for partners that wish to submit the additional fields and tracking information into the data systems in 2024. Future steps will involve including those fields into electronic trip reporting and electronic dealer reporting. But right now, the structure needed to be created first, before we move forward with other designs.

Moving into next year, this is also part of the action plan is the electronic dealer reporting redesign. Being able to move the online form to be more flexible. There is a whole series of a switchboard for what questions can and can't be asked, and updating that to an API submission that are processing behind the scenes, and really getting a refresh of the electronic dealer reporting platform that has been in place for many, many, years, so it is ready for a refresh in that standpoint.

The goal of a 2025 rollout is really to align the different pieces of the online, the mobile, the API. Any file upload components to all be pushed out at the same time, so the regulations, depending on how data are submitted, would all be applied at the same point in time. These projects and other new ones will certainly be discussed during the upcoming spring committee meetings.

The Information Systems meeting will really be looking at how to implement registries and tracking, how to expand one stop reporting. If you recall, one stop reporting was the initiative to make sure that folks that had multiple permits could be able to submit one report through the SAFIS eTrips API, or data collection systems, and have that shared with multiple federal entities, so if they've got a southern and a northern permit, that they can see that one report and have it shared behind the scenes with both of those entities. The next steps in that are to include more of the state requirements, and a state-specific questions, and partners questions that wanted to be added to the one stop reporting. There are a few more of these items coming up, but given that we're coming to the third year of a three-year software development plan.

Having a plan for staff and a priority by the partners, in terms of where to go next, including other developments supportive of your process, and also the data management needs. At this point we're at a pause, and just going to see if there are questions on some of the software development, or future planning that you wanted to ask at this point.

CHAIR McNAMEE: Okay, so looking to the Council, and questions for Geoff? Not seeing any around the table, none online? Okay.

MR. WHITE: Okay, so we'll keep moving.

CHAIR McNAMEE: Keep moving along, thanks, Geoff.

MR. WHITE: The next slide is really about the work that has been done by the Biological and Bycatch Committees. They had historically had some metadata inventory, what programs exist. Last year they had tried to move from an older Excel Spreadsheet format to actually having a database version that is searchable by end users.

That was developed and deployed in the spring of this year, and the Committees were able to go in, and over the summer, add partner specific programs and make those available via the CSP Data Warehouse and on the website. At this point there are 78 projects that have been populated, that cover 56 species. Going from an older, kind of static form, they can certainly add more information as it comes available.

But if people are interested in, oh, what biological data collection programs exist for my favorite species in my favorite area. You can go into this tool and have a quick reference of, what are the programs, who are the contact points. When did it

start? What are the types of data collection that are occurring? It doesn't have all the detailed information included here, in terms of the actual data rows, but it does have a reference point to what programs exist over time. We're rather excited to get that one out.

I covered this already, but it does include additional things, the sampling methodology, the primary contact information, but no new information. I think we've covered all this. But the exciting part is really the centralized catalogue that people can search online. This is just a quick screenshot of what it looks like, so when you're into the nonconfidential dataset over on the left-hand side, the menus of the ACCSP Data Warehouse, there is now a new item that says bio and bycatch.

It shows a search set of inventories and programs that exist, and when you highlight a particular row, as I've identified in yellow, it gives you more information about that down below. I think we're going to keep moving. Another item that had come up through Coordinating Council several years ago, was the development of the 2022 Accountability Report Best Practices Workshop, was identified to compare data collection programs, the audits and the trips versus dealer reports. This was mentioned by Carrie Kennedy, it's been a work that Julie has organized the workshops on, and given the ability to schedule things and the propensity for the federal government to stay open, and be included in the workshop. We have shifted this from late 2023 to February 12 through 16, 2024. This will be an in-person meeting down in Charleston.

We've got a lot of the folks identified that will be there already. Really excited to get the process flow laid out. What are the important activities that are going to occur, and really how to combine and improve data quality and accountability between systems. I think our next slide goes to a little bit more of an infographic on that.

By identifying the workload, the staffing and the skillsets, kind of the pros and cons of what can be done with the resource availability, and then evaluating a rubric for implementing new or updated programs. It's going to be all things that will go into this idea of an accountability toolbox, which will help move partners forward, and ACCSP help to address what data collection is occurring.

How does it align between one data stream, fishermen reporting, and another data stream the dealer reporting, and even beyond that? Before we go further, Julie did you want to add anything at this point? Okay, and then we had planned to kind of be quick here, and so moving forward I wanted to highlight that at the Ops and Advisors Meeting, we did hold Advisors elections.

Dee Lupton, as a new Advisor this year, we're excited to have her on, was voted in as Chair and Fran Karp will be Vice—Chair. We want to also extend thanks to Ellen Goethel for her commitment, her energy and her always point on observations of the process, and being able to move things forward. Thanks to all for that.

The next slide is really a call to action for all of you. Our Advisors, as Julie pointed out earlier, as a group that has been shrinking. There are currently six listed here, but one member does, I believe, needs to drop out. We're down to five active Advisors, and really would love to have each of you consider new advisors to be participating here.

It could be recreational, commercial data associated, you know any of those zones, but to have greater partner participation on the Advisory Group would be fantastic. We would love to have you guys think about who you can appoint, and get them appointed so that they can be active in 2024. That is the end of the highlighted points for the program update.

We've got one more slide we're going to allow a point for questions, but also, I did want to note the two rather important things related to ACCSP would be the MRIP Fisheries Effort Survey Session, it begins at 10:45, and also a lot of the items we talked about as future planning in 2024, are part of Goal 3 in the Action Plan, which is being presented tomorrow during the Business Meeting. With that we'll stop and ask for questions.

CHAIR McNAMEE: All right, thank you so much, Geoff, way to cover a lot of material in a very succinct way. Questions from anybody for Geoff on what he covered? Anyone online? Okay, last call, no questions or comments for Geoff? It looks like none, Geoff. Thank you very much, appreciate that. Anything you want to add there?

MR. WHTIE: We're good, thank you, Mr. Chair.

CHAIR McNAMEE: That was our last main agenda item.

ADJOURNMENT

CHAIR McNAMEE: We're on to Other Business. Have not received any requests to add anything under Other Business. Just a quick scan around the table, to see if anybody has second thoughts about that. I know John Clark is not going to raise his hand, so I think we are ready to adjourn.

Can I have a motion to adjourn from somebody on the Council? John, I'm going to count that. John, with a motion to adjourn, can I have a second? Thank you, Marty. Any objections to the motion to adjourn? Seeing none; we are adjourned. Thanks, everybody.

(Whereupon the meeting adjourned at 10:00 a.m. on October 17, 2023)

ACCSP FY25 RFP Summary of Changes

1. RFP

1.1. General Changes

1.1.1. Updated dates appropriately

2. Funding Decision Document

2.1. General changes

2.1.1. All dates have been updated

2.2. Appendix A (**PAGE 15**)

2.2.1. Added Year 5 value ($142,344) for PRFC electronic reporting project

3. Biological Priority Matrix – No Changes

4. Bycatch Priority Matrix – No Changes

5. Recreational Technical Committee Priorities – No Changes

6. Socioeconomic Priority Data Elements – No Changes

7. Timeline for Proposal Review

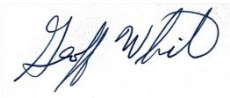
7.1. Dates are updated

7.2. Overall timeline remains relatively the same

8. Ranking Criteria Document – No Changes

Atlantic Coastal Cooperative Statistics Program
1050 N. Highland Street, Suite 200A-N | Arlington, VA 22201
703.842.0780 | 703.842.0779 (fax) | www.accsp.org

TO: ACCSP Coordinating Council and All ACCSP Committees

FROM: Geoff White, ACCSP Director 

SUBJECT: ACCSP Request for 2025 Proposals

The Atlantic Coastal Cooperative Statistics Program (Program or ACCSP) is issuing a Request for Proposals (RFP) to Program Partners and Committees for FY25 funding.

ACCSP's Funding Decision Document (FDD) provides an overview of the funding decision process, guidance for preparing and submitting proposals, and information on funding recipients' post-award responsibilities. Projects in areas not specifically addressed in the FDD may still be considered for funding if they help achieve Program goals. These goals, listed by priority, are improvements in:

1a. Catch, effort, and landings data (including licensing, permit and vessel registration data);
1b. Biological data (equal to 1a.);
2. Releases, discards and protected species data; and,
3. Economic and sociological data.

Project activities that will be considered according to priority may include:

- Partner implementation of data collection programs;
- Continuation of current Program-funded partner programs;
- Funding for personnel required to implement Program related projects/proposals; and
- Data management system upgrades or establishment of partner data feeds to the Data Warehouse and/or Standard Atlantic Fisheries Information System.

Proposals for biological sampling should target priority species in the top quartile (Attachment II) of the Biological Priority Matrix. Proposals for observer coverage should align with fisheries affecting the top quartile priority species (Attachment III) of the Bycatch Priority Matrix. Brief descriptions of the current levels of biological or bycatch sampling by any of the Partners would be helpful to the review process. Projects for recreational catch and effort data should target the priorities set by the Recreational Technical Committee (Attachment IV). Projects involving socioeconomic data should reference the Socioeconomic Priority Data Elements (Attachment V).

Proposals to continue Program-funded partner projects ("maintenance proposals") may not contain significant changes in scope (for example the addition of bycatch data collection to a dealer reporting project), and must include in the cover letter whether there are any changes in the current proposal from prior years' and, if so, provide a brief summary of those changes.

Additionally, in FY16 a long-term funding strategy policy was instituted to limit the duration of maintenance projects. Maintenance projects are now subject to a funding reduction following their

fourth year of maintenance funding. For maintenance projects entering year 6, a further 33 percent cut will be applied and funding will cease in year 7.

All project submissions must comply with the Program Standards found here. Please consider using this successful project proposal as a template. Overhead rates may not exceed 25% of total costs unless mandated by law or policy. Items included within overhead should not also be listed as in-kind match.

Submissions will be reviewed in accordance with the FDD (Attachment I), ranking criteria (Attachment VII), and funding allocation. Current funding allocation guidelines are 75% for maintenance projects and 25% for new projects within the Program priorities. If either allocation is not fully utilized, remaining funds will be available to approved projects in the other category. For example, if maintenance projects only use 67% of the total available funds, the remaining balance would be added to the 25% new project allocation to fund new projects as approved by the Coordinating Council.

Attachment VI provides a timeline for the FY25 funding process. The final decision on proposals to be funded for FY25 will be made in October 2024. Project awards will be subject to funding availability and, if there is a funding shortfall, awards may be adjusted in accordance with the FDD. Successful applicants will be notified when funding becomes available.

Project Investigators will be required to report progress directly to the Program's Operations and Advisory Committees in addition to meeting the standard Federal reporting requirements.

Please submit initial proposals as Microsoft Word and Excel files no later than **June 17, 2024** by email to Julie DeFilippi Simpson, ACCSP Deputy Director julie.simpson@accsp.org. If you have any questions about the funding decision process, please contact your agency's Operations Committee member (http://www.accsp.org/committees) or ACCSP staff (703-842-0780).

RELEVANT ATTACHMENTS

ATTACHMENT I	FY2025 Funding Decision Document
ATTACHMENT II	FY2025 Biological Priority Matrix
ATTACHMENT III	FY2025 Bycatch Priority Matrix
ATTACHMENT IV	FY2025 Recreational Technical Committee Priorities
ATTACHMENT V	FY2025 Socioeconomic Priority Data Elements
ATTACHMENT VI	FY2025 Timeline for Proposal Review
ATTACHMENT VII	FY2025 Ranking Criteria Document

Funding Decision Process
Atlantic Coastal Cooperative Statistics Program
May 2024

The Atlantic Coastal Cooperative Statistics Program (the Program) is a state-federal cooperative initiative to improve recreational and commercial fisheries data collection and data management activities on the Atlantic coast. The program supports further innovation in fisheries-dependent data collection and management technology through its annual funding process.

Each year, ACCSP issues a Request for Proposals (RFP) to its Program Partners. The ACCSP Operations and Advisory Committees review submitted project proposals and make funding recommendations to the Deputy Director and the Coordinating Council.

This document provides an overview of the funding decision process, guidance for preparing and submitting proposals, and information on funding recipients' post-award responsibilities, including providing reports on project progress.

Overview of the Funding Decision Process

Funding Decision Process Timeline

April- Operations and Advisory Committees develop annual funding priorities, criteria and allocation targets (maintenance vs. new projects)

May- Coordinating Council issues Request for Proposals (RFP)

June- Partners submit proposals

July- Operations and Advisory Committees review initial proposals, PIs are invited (not mandatory) to this meeting to answer questions and hear feedback; ACCSP staff provide initial review results to submitting Partner

August- Final proposals are submitted. Final proposals must be submitted electronically to the Deputy Director, and/or designee by close of business on the day of the specified deadline. Final proposals received after the RFP deadline will not be considered for funding.

September- Operations and Advisory Committees review and rank final proposals

October- Funding recommendations presented to Coordinating Council; Coordinating Council makes final funding decision

ACCSP Staff submits notification to submitting Partner of funded projects and notification of approved projects to appropriate grant funding agency (e.g. NOAA Fisheries Regional Grants Program Office, "NOAA Grants") by Partner

As Needed- Operation and/or Leadership Team and Coordinating Council review and make final decision with contingencies (e.g. scope of work, rescissions, no-cost extensions, returned unused funds, etc.)

Detailed Steps of Funding Decision Process

1. Develop Annual Funding Priorities, Criteria and Allocation Targets (maintenance vs. new projects).

Prior to issuing the Request for Proposals, the Coordinating Council will approve the annual funding criteria and allocation targets. These will be used to rank projects and allocate funding between maintenance and new projects respectively.

In FY16, a long-term funding strategy policy was instituted to limit the duration of maintenance projects. Maintenance projects are now subject to a funding reduction following their fourth year of maintenance funding.

- For maintenance projects entering year 5 of ACCSP funding in FY20, a 33 percent funding cut was applied to whichever sum was larger: the project's prior two-year-average base funding set in FY16, or the average annual sum received during the project's four years of full *maintenance* funding. In year 6, a further 33 percent cut will be applied and funding will cease in year 7. Please see Appendix A for a list of maintenance projects entering year 6 in FY20 and the maximum funds available for these projects.
- For more recent maintenance projects (i.e., those entering year 5 of maintenance funding after FY20), the base funding will be calculated as the average of funding received during the project's four years as a *maintenance* project. These projects will receive a 33 percent cut in year 5, a further 33 percent cut in year 6, and funding will cease in year 7. Please see Appendix A for a list of maintenance projects entering year 5 or 6 in FY25 and the maximum funds available for these projects.

2. Issue Request for Proposals

An RFP will be sent to all Program Partners and Committees no later than the week after the spring Coordinating Council meeting. The RFP will include the ranking criteria, allocation targets approved by the Coordinating Council, and general Program priorities taken from Goal 3 of the current ASMFC Five-Year Strategic Plan. The RFP and related documents will also be posted on the Program's website here.

All proposals MUST be submitted either by a Program Partner, jointly by several Program Partners, or through a Program Committee. The public has the ability to work with a Program Partner to develop and submit a proposal. Principle investigators are strongly encouraged to work with their Operations Committee member in the development of any proposal. All proposals must be submitted electronically to the Deputy Director, and/or designee, in the standard format.

3. Review initial proposals

Proposals will be reviewed by staff and the Operations and Advisory Committees. Committee members are encouraged to coordinate with their offices and/or constituents to provide input to the review process. Operations Committee members are also encouraged to work with staff in their offices who have submitted a proposal in order to represent the proposal during the review. Project PIs will be invited to attend the initial proposal review, held in July. The review and evaluation of all written proposals will take into consideration the ranking criteria, funding allocation targets and the overall Program Priorities as specified in the RFP. Proposals may be forwarded to relevant Program technical committees for further review of the technical feasibility and statistical validity. Proposals that fail to meet the ACCSP standards may be recommended for changes or rejected.

4. Provide initial review results to submitting Partner

Program staff will notify the submitting Partner of suggested changes, requested responses, or questions arising from the review. The submitting Partner will be given an opportunity to submit a final proposal incorporating suggested changes in the same format previously described in Step 2(b) by the final RFP deadline.

5. Review and rank final proposals

The review and ranking of all proposals will take into consideration the ranking criteria, funding allocation targets, and overall Program Priorities as specified in the RFP**.** The Deputy Director and the Advisory and Operations Committees will develop a list of prioritized recommended proposals and forward them for discussion, review, and approval by the Coordinating Council.

6. Proposal approval by the Coordinating Council

The Coordinating Council will review a summary of all submitted proposals and prioritized recommended proposals from the Operations and Advisory Committees. Each representative on the Coordinating Council will have one vote during final prioritization of project proposals. Projects to be funded by the Program will be approved by the Coordinating Council by the end of November each year. The Deputy Director will submit a pre-notification to the appropriate NOAA Grants office of the prioritized proposals to expedite processing when those offices receive Partner grant submissions.

7. Confirmation of final funding amounts

The Director and Deputy Director will be notified by NOAA Fisheries of any federal grant adjustments (e.g. additions or rescissions). Additional funds will generally go to the next available ranked project. Reductions may include, but are not limited to:

- Lower than anticipated amounts from any source of funding
- Rescission of funding after initial allocations have been made
- Partial or complete withdrawal of funds from any source

If these or other situations arise, the Operations Committee will notify Partners with approved proposals to reduce their requested budgets or to withdraw a proposal entirely. If this does not reduce the overall requested amount sufficiently, the Director, Deputy Director, the Operations Committee Chair and Vice-Chair, and the Advisory Committee Chair will develop a final recommendation and forward to the ACCSP Leadership Team of the Coordinating Council. These options to address funding contingencies may include:

- Eliminating the lowest-ranked proposal(s)
- A fixed percentage cut to all proposals' budgets
- A directed reduction in a specific proposal(s)

8. Notification to submitting Partner of funded projects and submittal of project documents to appropriate grants agency (e.g. NOAA Grants) by Partner.

Notification detailing the Coordinating Council's actions relevant to a Partner's proposal will be sent to each Partner by Program staff.

- Approved projects from Non-federal Partners must be submitted as full applications (federal forms, project and budget narratives, and other attachments) to NOAA Grants via www.grants.gov. These documents must reflect changes or conditions approved by the Coordinating Council.
- Non-federal Partners must provide the Deputy Director with an electronic copy of the narrative and either an electronic or hard copy of the budget of the grant application as submitted to the grants agency (e.g. NOAA Grants).
- Federal Partners do not submit applications to NOAA Grants.

9. Operation and/or Leadership Team and Coordinating Council review and final decision with contingencies or emergencies.

Committee(s) review and decide project changes (e.g. scope of work, rescissions, no-cost extensions, returned unused funds, etc.) during the award period.

Proposal Guidance

General Proposal Guidelines

- The Program is predicated upon the most efficient use of available funds. Many jurisdictions have data collection and data management programs which are administered by other fishery management agencies. Detail coordination efforts your agency/Committee has undertaken to demonstrate cost-efficiency and non-duplication of effort.

- All Program Partners conducting projects for implementation of the program standards in their jurisdictions are required to submit data to the Program in prescribed standards, where the module is developed and formats are available. Detail coordination efforts with Program data management staff with projects of a research and/or pilot study nature to submit project information and data for distribution to all Program Partners and archives.

- If appropriate to your project, please detail your agency's data management capability. Include the level of staff support (if any) required to accomplish the proposed work. If contractor services are required, detail the level and costs.

- Before funding will be considered beyond year one of a project, the Partner agency shall detail in writing how the Partner agency plans to assume partial or complete funding or, if not feasible, explain why.

- If appropriate to your project, detail any planned or ongoing outreach initiatives. Provide scope and level of outreach coordinated with either the Program Assistant and/or Deputy Director.

- Proposals including a collection of aging or other biological samples must clarify Partner processing capabilities (i.e., how processed and by whom).

- Provide details on how the proposal will benefit the Program as a whole, outside of benefits to the Partner or Committee.

- Proposals that request funds for law enforcement should confirm that all funds will be allocated towards reporting compliance.

- Proposals must detail any in-kind effort/resources, and if no in-kind resources are included, state why.

- Proposals must meet the same quality as would be appropriate for a grant proposal for ACFCMA or other federal grant.

- Assistance is available from Program staff, or an Operations Committee member for proposal preparation and to insure that Program standards are addressed in the body of a given proposal.

- Even though a large portion of available resources may be allocated to one or more jurisdictions, new systems (including prototypes) will be selected to serve all Partners' needs.

- Partners submitting pilot or other short-term programs are encouraged to lease large capital budget items (vehicles, etc.) and where possible, hire consultants or contractors rather than hire new permanent personnel.

- The Program will not fund proposals that do not meet Program standards. However, in the absence of approved standards, pilot studies may be funded.

- Proposals will be considered for modules that may be fully developed but have not been through the formal approval process. Pilot proposals will be considered in those cases.

- The Operations Committee may contact Partners concerning discrepancies or inconsistencies in any proposal and may recommend modifications to proposals subject to acceptance by the submitting Partner and approval by the Coordinating Council. The Operations Committee may recommend changes or conditions to proposals. The Coordinating Council may conditionally approve proposals. These contingencies will be documented and forwarded to the submitting Partner in writing by Program staff.

- Any proposal submitted after the initial RFP deadline will not be considered, in addition to any proposal submitted by a Partner which is not current with all reporting obligations.

Proposal Format

Applicant Name: Identify the name of the applicant organization(s).

Project Title: A brief statement to identify the project.

Project Type: Identify whether new or maintenance project.

> *New Project – Partner project never funded by the Program. New projects may not exceed a duration of one year.*
>
> *Maintenance Project – Project funded by the Program that conducts the same scope of work as a previously funded new or maintenance project. These proposals may not contain significant changes in scope (e.g., the addition of bycatch data collection to a catch/effort dealer reporting project). PIs must include in the cover letter whether there are any changes in the current proposal from prior years' and, if so, provide a brief summary of those changes. At year 5 of maintenance funding, a project's base funding will be calculated as the average of funding received during the project's four years as a* maintenance *project.*

Requested Award Amount: Provide the total requested amount of proposal. Do not include an estimate of the NOAA grant administration fee.

Requested Award Period: Provide the total time period of the proposed project. The award period typically will be limited to one-year projects.

Objective: Specify succinctly the "why", "what", and "when" of the project.

Need: Specify the need for the project and the association to the Program.

Results and Benefits: Identify and document the results or benefits to be expected from the proposed project. Clearly indicate how the proposed work meets various elements outlined in the ACCSP Proposal Ranking Criteria Document (Appendix B). Some potential benefits may include: fundamental in nature to all fisheries; region-wide in scope; answering or addressing region-wide questions or policy issues; required by MSFCMA, ACFCMA, MMPA, ESA, or other acts; transferability; and/or demonstrate a practical application to the Program.

Data Delivery Plan: Include coordinated method of the data delivery plan to the Program in addition to module data elements gathered. The data delivery plan should include the frequency of data delivery (i.e. monthly, semi-annual, annual) and any coordinate delivery to other relevant partners.

Approach: List all procedures necessary to attain each project objective. If a project includes work in more than one module, identify approximately what proportion of effort is comprised within each module (e.g., catch and effort 45%, biological 30% and bycatch 25%). Please note that only one primary module and one secondary module are considered for ranking.

Geographic Location: The location where the project will be administered and where the scope of the project will be conducted.

Milestone Schedule: An activity schedule in table format for the duration of the project, starting with Month 1 and ending with a three-month report writing period.

Project Accomplishments Measurement: A table showing the project goals and how progress towards those goals will be measured. In some situations the metrics will be numerical such as numbers of anglers contacted, fish measured, and/or otoliths collected, etc.; while in other cases the metrics will be binary such as software tested and software completed. Additional details such as intermediate metrics to achieve overall proposed goals should be included especially if the project seeks additional years of funding.

Cost Summary (Budget): Detail all costs to be incurred in this project in the format outlined in the budget guidance and template at the end of this document. A budget narrative should be included which explains and justifies the expenditures in each category. Provide cost projections for federal and total costs. Provide details on Partner/in-kind contribution (e.g., staff time, facilities, IT support, overhead, etc.). Details should be provided on start-up versus long-term operational costs.

> **In-kind** - [1]Defined as activities that could exist (or could happen) without the grant. [2]In-kind contributions are from the grantee organization. In-kind is typically in the form of the value of personnel, equipment and services, including direct and indirect costs.
>
> [1] The following are generally accepted as in-kind contributions:
>
> i. Personnel time given to the project including state and federal employees
>
> ii. Use of existing state and federal equipment (e.g. data collection and server platforms, Aging equipment, microscopes, boats, vehicles)

Overhead rates may not exceed 25% of total costs unless mandated by law or policy. Program Partners may not be able to control overhead/indirect amounts charged. However, where there is flexibility, the lowest amount of overhead should be charged. When this is accomplished indicate on the 'cost summary' sheet the difference between the overhead that could have been charged and the actual amount charged, if different. If overhead is charged to the Program, it cannot also be listed as in-kind.

Maintenance Projects: Maintenance proposals must provide project history table, description of completed data delivery to the ACCSP and other relevant partners, table of total project cost by year, a summary table of metrics and achieved goals, and the budget narrative from the most recent year's funded proposal.

Principal Investigator: List the principal investigator(s) and attach curriculum vitae (CV) for each. Limit each CV to two pages. Additional information may be requested.

Budget Guidelines & Template

All applications must have a detailed budget narrative explaining and justifying the expenditures by object class. Include in the discussion the requested dollar amounts and how they were derived. A spreadsheet or table detailing expenditures is useful to clarify the costs (see template below). The following are highlights from the NOAA Budget Guidelines document to help Partners formulate their budget narrative. The full Budget Guidelines document is available here.

Object Classes:

Personnel: include salary, wage, and hours committed to project for each person by job title. Identify each individual by name and position, if possible.

Fringe Benefits: should be identified for each individual. Describe in detail if the rate is greater than 35 % of the associated salary.

Travel: all travel costs must be listed here. Provide a detailed breakdown of travel costs for trips over $5,000 or 5 % of the award. Include destination, duration, type of transportation, estimated cost, number of travelers, lodging, mileage rate and estimated number of miles, and per diem.

Equipment: equipment is any single piece of non-expendable, tangible personal property that costs $5,000 or more per unit and has a useful life of more than one year. List each piece of equipment, the unit cost, number of units, and its purpose. Include a lease vs. purchase cost analysis. If there are no lease options available, then state that.

Supplies: purchases less than $5,000 per item are considered by the federal government as supplies. Include a detailed, itemized explanation for total supplies costs over $5,000 or 5% of the award.

Contractual: list each contract or subgrant as a separate item. Provide a detailed cost breakdown and describe products/services to be provided by the contractor. Include a sole source justification, if applicable.

Other: list items, cost, and justification for each expense.

Total direct charges

Indirect charges: If claiming indirect costs, please submit a copy of the current approved negotiated indirect cost agreement. If expired and/or under review, a copy of the transmittal letter that accompanied the indirect cost agreement application is requested.

Totals of direct and indirect charges

Example. Budget narrative should provide further detail on these costs.

Description	Calculation	Cost
Personnel (a)		
Supervisor	Ex: 500 hrs x $20/hr	$10,000
Biologist		
Technician		
Fringe (b)		
Supervisor	Ex: 15% of salary	$1500
Biologist		
Technician		
Travel (c)		
Mileage for sampling trips	Ex: Estimate 2000 miles x $0.33/mile	$660
Travel for meeting		
Equipment (d)		
Boat	Ex: $7000, based on current market research	$7000
Supplies (e)		
Safety supplies		$1200
Sampling supplies		$1000
Laptop computers	2 laptops @$1500 each	$3000
Software		$500
Contractual (f)		
Data Entry Contract	Ex: 1000 hrs x $20/hr	$20,000
Other (h)		
Printing and binding		
Postage		
Telecommunications charges		
Internet Access charges		
Totals		
Total Direct Charges (i)		
Indirect Charges (j)		
Total (sum of Direct and Indirect) (k)		

Post-award Responsibilities

Changing the Scope of Work

Partners shall submit requests for amendments to approved projects in writing to the Deputy Director. The Coordinating Council member for that Partner must sign the request.

When Partners request an amendment to an approved project, the Deputy Director will contact the Chair and Vice Chair of the Operations Committee. The Deputy Director and Operations Committee Chairs will determine if the requested change is minor or substantial. The Chairs and Deputy Director may approve minor changes.

For substantial proposed changes, a decision document including the opinions of the Chairs and the Deputy Director will be sent to the Operations Committee and the ACCSP Leadership Team of the Coordinating Council for review.

The ACCSP Leadership Team will decide to approve or reject the request for change and notify the Deputy Director, who will send a written notification to the Partner's principal investigator with a copy to the Operations Committee.

When a requested major amendment is submitted shortly before a Coordinating Council meeting, the approval of the amendment will be placed on the Council Agenda.

The Deputy Director will notify NOAA Grants of any change in scope of work for final approval for non-federal proposals, and the Partner will need to request a Change in Scope through Grants Online. Necessary communications will be maintained between the concerned Partner, the Program and NOAA Grants. Any changes must be approved through the normal NOAA Grants process.

Requesting a No-cost Extension

If additional time is needed to complete the project, Program Partners can request a no-cost extension to their award period. Partners should let the Program know of the need for additional time and then request the extension as an Award Action Request through NOAA Grants Online at least 30 days before the end date of the award.

Necessary communications will be maintained between the concerned Partner, the Program, and NOAA Grants office. Any changes must be approved through the normal NOAA Grants process.

Declaring Unused/Returned Funds

In an effort to limit the instances in which funds are not completely used during the award period, draw down reports from the NOAA Grants offices indicating remaining grant balances will be periodically reviewed during each fiscal year.

While effort should be made to complete the project as proposed, if Program Partners find that they will not be able to make use of their entire award, they should notify the Program and their NOAA Federal Program Officer as soon as possible. Depending on the timing of the action, the funds may be able to be reused within the Program, or they may have to be returned to the U.S. Treasury.

Program Partners must submit a written document to the Deputy Director outlining unused project funds potentially being returned. The Partner must also notify their Coordinating Council member (if applicable) for approval to return the unused funds. If the funding is available for re-use within the Program, the Director and Deputy Director will confer with the Operations Committee Chair and Vice-Chair and the Advisory Committee Chair, and then submit a written recommendation to the ACCSP Leadership Team of the Coordinating Council for final approval on the plan to distribute the returned money.

Necessary communications will be maintained between the concerned Partner, the Program, and NOAA Grants office. Any changes must be approved through the normal NOAA Grants process.

Reporting Requirements

Program staff will assess project performance.

The Partner project recipients must abide by the NOAA Regional Grant Programs reporting requirements and as listed below. All semi-annual and final reports are to include a table showing progress toward each of the progress goals as defined in Step 2b and additional metrics as appropriate. Also, all Partner project recipients will submit the following reports based on the project start date to the Deputy Director:

- Semi-annual reports (due 30 days after the semi-annual period) throughout the project period including time periods during no-cost extensions,
- One final report (due 90 days after project completion).
- Federal Partners must submit reports to the Deputy Director, and State Partners must submit reports to both the Deputy Director and the appropriate NOAA Grants office.

Program staff will conduct an initial assessment of the final report to ensure the report is complete in terms of reporting requirements. Program staff will serve as technical monitors to review submitted reports. NOAA staff also reviews the reports submitted via Grants Online.

A project approved on behalf of a Program Committee will be required to follow the reporting requirements specified above. The principle investigator (if not the Chair of the Committee) will submit the report(s) to the Chair and Vice Chair of the Committee for review and approval. The Committee Chair is responsible for submitting the required report(s) to the Program.

Joint projects will assign one principle investigator responsible for submitting the required reports. The principle investigator will be identified within the project proposal. The submitted reports should be a collaborative effort between all Partners involved in the joint project.

Project recipients will provide all reports to the Program in electronic format.

Partners who receive no-cost extensions must notify the Deputy Director within 30 days of receiving approval of the extension. Semi-annual and final reports will continue to be required through the extended grant period as previously stated.

Partners that have not met reporting requirements for past/current projects may not submit a new proposal.

A verbal presentation of project results may be requested. Partners will be required to submit copies of project specifications and procedures, software development, etc. to assist other Program Partners with the implementation of similar programs.

Report Format

Semi-Annual(s) – Progress Reports: (3-4 pages)

- Title page - Project name, project dates (semi-annual period covered and complete project period), submitting Partner, and date.
- Objective
- Activities Completed – bulleted list by objective.
- Progress or lack of progress of incomplete activities during the period of semi-annual progress – bulleted list by objective.
- Activities planned during the next reporting period.
- Metrics table
- Milestone Chart – original and revised if changes occurred during the project period.

Final Report:

- Title page – Project name, project dates, submitting Partner, and date.
- Abstract/Executive Summary (including key results)
- Introduction
- Procedures

- Results:
    - Description of data collected.
    - The quality of the data pertaining to the objective of the project (e.g. representative to the scope of the project, quantity collected, etc.).
    - Compiled data results.
    - Summary of statistics.
- Discussion:
    - Discuss the interpretation of results of the project by addressing questions such as, but not limited to:
    - What occurred?
    - What did not occur that was expected to occur?
    - Why did expected results not occur?
    - Applicability of study results to Program goals.
    - Recommendations/Summary/Metrics
- Summarized budget expenditures and deviations (if any).

Programmatic review

Project reports will inform Partners of project outcomes. This will allow the Program as a whole to take advantage of lessons learned and difficulties encountered. Staff will provide final reports to the appropriate Committee(s). The Committees then can discuss the report(s) and make recommendations to modify the Data Collection Standards as appropriate. The recommendations will be submitted through the Program committee(s) review process.

Appendix A: Maximum Funding for Maintenance Projects Entering Year 5 or 6 of Funding in FY25

Projects in Year 5 or 6 of Maintenance Funding	**Calculated Base** (4-year avg)	**Maximum Funding Year 5**	Maximum Funding Year 6 (Final Year)
Electronic Trip-Level Reporting for the Potomac River Fisheries Commission Commercial Fisheries Sector	**$213,516**	**$142,344**	$71,172

Appendix B: Ranking Criteria Spreadsheet for Maintenance and New Projects

Ranking Guide – Maintenance Projects:

Primary Program Priority	**Point Range**	**Description of Ranking Consideration**
Catch and Effort Biological Sampling Bycatch/Species Interactions Social and Economic	0 – 10 0 – 10 0 – 6 0 – 4	Rank based on range within module and level of sampling defined under Program design. When considering biological, bycatch or recreational funding, rank according priority matrices.
Data Delivery Plan	+ 2	Additional points if a data delivery plan to Program is supplied and defined within the proposal.

Project Quality Factors	**Point Range**	**Description of Ranking Consideration**
Multi-Partner/Regional impact including broad applications	0 – 5	Rank based on the number of Partners involved in project OR regional scope of proposal (e.g. geographic range of the stock).
> yr 2 contains funding transition plan and/or justification for continuance	0 – 4	Rank based on defined funding transition plan away from Program funding or viable justification for continued Program funding.
In-kind contribution	0 – 4	1 = 1% - 25% 2 = 26% - 50% 3 = 51% - 75% 4 = 76% - 99%
Improvement in data quality/quantity/timeliness	0 – 4	1 = Maintain minimum level of needed data collections ↓ 4 = Improvements in data collection reflecting 100% of related module as defined within the Program design. Metadata is provided and defined within proposal if applicable.
Potential secondary module as a by-product (In program priority order)	0 – 3 0 – 3 0 – 3 0 – 1	Ranked based on additional module data collection and level of collection as defined within the Program design of individual module.
Impact on stock assessment	0 – 3	Rank based on the level of data collection that leads to new or greatly improved stock assessments.

Other Factors	Point Range	Description of Ranking Consideration
Properly Prepared	-1 – 1	Meets requirements as specified in funding decision document Step 2b and Guidelines
Merit	0 – 3	Ranked based on subjective worthiness

Ranking Guide – Maintenance Projects: (*to be used only if funding available exceeds total Maintenance funding requested*)

Ranking Factors	Point Range	Description of Ranking Consideration
Achieved Goals	0 – 3	Proposal indicates project has consistently met previous set goals. Current proposal provides project goals and if applicable, intermediate metrics to achieve overall achieved goals.
Data Delivery Plan	0 – 2	Ranked based if a data delivery plan to Program is supplied and defined within the proposal.
Level of Funding	-1 – 1	-1 = Increased funding from previous year 0 = Maintained funding from previous year 1 = Decreased funding from previous year
Properly Prepared	-1 – 1	-1 = Not properly prepared 1 = Properly prepared
Merit	0 – 3	Ranked based on subjective worthiness

Ranking Guide – New Projects:

Primary Program Priority	Point Range	Description of Ranking Consideration
Catch and Effort Biological Sampling Bycatch/Species Interactions Social and Economic	0 – 10 0 – 10 0 – 6 0 – 4	Rank based on range within module and level of sampling defined under Program design. When considering biological, bycatch or recreational funding, rank according priority matrices.
Data Delivery Plan	+ 2	Additional points if a data delivery plan to Program is supplied and defined within the proposal.

Project Quality Factors	Point Range	Description of Ranking Consideration
Multi-Partner/Regional impact including broad applications	0 – 5	Rank based on the number of Partners involved in project OR regional scope of proposal (e.g. fisheries sampled).
Contains funding transition plan / Defined end-point	0 – 4	Rank based on quality of funding transition plan or defined end point.
In-kind contribution	0 – 4	1 = 1% - 25% 2 = 26% - 50% 3 = 51% - 75% 4 = 76% - 99%
Improvement in data quality/quantity/timeliness	0 – 4	1 = Maintain minimum level of needed data collections ↓ 4 = Improvements in data collection reflecting 100% of related module as defined within the Program design. Metadata is provided and defined within proposal if applicable.
Potential secondary module as a by-product (In program priority order)	0 – 3 0 – 3 0 – 3 0 – 1	Ranked based on additional module data collection and level of collection as defined within the Program design of individual module.
Impact on stock assessment	0 – 3	Rank based on the level of data collection that leads to new or greatly improved stock assessments.

Other Factors	Point Range	Description of Ranking Consideration
Innovative	0 – 3	Rank based on new technology, methodology, financial savings, etc.
Properly Prepared	-1 – 1	Meets requirements as specified in funding decision document Step 2b and Guidelines
Merit	0 – 3	Ranked based on subjective worthiness

Biological Sampling Priority Matrix

Created in February 2023

For FY2024

Our vision is to be the principal source of fisheries-dependent information on the Atlantic coast through the cooperation of all program partners.

Biological Review Panel Recommends:

- Species in the upper 25% of the priority matrix should be considered for funding.

- Sampling projects which cover multiple species within the upper 25% are highly recommended.

* UPPER 25% OF MATRIX

Biological Review Panel Recommendations Based on Matrix:

Species	Overfished	Overfishing	Most Recent Stock Assessment	Current/Next Stock Assessment	Council Priority	ASMFC Priority	State Priority	NMFS Priority	Fishery Managed	Sig. change in landings w/in 24 mo	Sig. change in mgmt w/in 24 mo	Adequacy of level of sampling	Stock Resilience	Seasonality of Fishery	Average Priority	TOTAL
Black Sea Bass *Centropristis striata*	N: MA N:SA	N: MA N:SA	2021	2023	5	5	3.6	5	5	3	5	4	3	1	4.5	39.57
Red Grouper *Epinephelus morio*	Y	Y	2017	2023	5	0	1.1	5	3	3	4	3	4	3	2.8	31.07
Tilefish *Lopholatilus chamaeleonticeps*	N: MA N:SA	N: MA Y:SA	2021	2024	5	0	1.9	4	5	1	3	3	4	3	2.8	29.86
Snowy Grouper *Epinephelus niveatus*	Y	N	2020	2026	5	0	0.9	5	3	1	3	3	5	3	2.8	28.93
American Shad *Alosa sapidissima/mediocris*	D	U	2020		0	3	3.8	0	5	3	1	4	5	3	2.2	27.79
Atlantic Menhaden *Brevoortia tyrannus*	N	N	2022	2025	0	5	3.1	3	5	1	3	3	3	1	2.8	27.14
Cobia *Rachycentron canadum*	N	N	2020	2025	1	5	1.6	4	3	1	1	4	3	3	3.1	26.57
River Herring *Alosa*	D	U	2017	2023	0	4	3.4	0	5	3	0	4	4	3	2.3	26.36
Spanish Mackerel *Scomberomorus maculatus*	N	N	2020	2022	5	2	1.2	4	3	1	2	3	2	3	3.0	26.21
Atlantic halibut *Hippoglossus hippoglossus*	Y	N	2022	2024	4	0	1.2	1	3	3	1	4	5	3	2.0	25.21
Blueline Tilefish *Caulolatilus microps*	U	U	2017	2024	3	0	1.1	5	3	1	3	3	3	3	2.4	25.07
Finetooth Shark *Carcharhinus isodon*	N	N	2007		0	1	1.1	3	5	5	1	3	3	3	1.6	25.07
Gray Triggerfish *Balistes capriscus*	U	U	2023	2024	5	0	1.0	4	3	1	3	3	2	3	2.6	25.00
Bluefin Tuna *Thunnus thynnus*	E/M: U; W:U	E/M: N; W:N	E/M: 2017; W: 2021	E/M: 2022; W: TBD	0	0	1.9	5	5	1	5	3	3	1	2.0	24.86
Gag Grouper *Mycteroperca microlepis*	N	N	2021	2025	5	0	0.9	5	3	1	0	3	4	3	2.8	24.86
Vermilion Snapper *Rhomboplites aurorubens*	N	N	2018	2028	5	0	0.8	4	3	3	3	2	3	1	2.4	24.79
American Lobster *Homarus americanus*	N: GOM/GB D: SNE	N: GOM/GB N: SNE	2020	2025	0	5	2.7	0	3	1	5	3	4	1	2.1	24.71
Spiny Dogfish *Squalus acanthias*	N	N	2022	2026	0	3	2.6	2	5	3	1	2	5	1	1.9	24.64
Red Snapper *Lutjanus campechanus*	Y	Y	2021	2026	5		0.6	5	3	1	1	1	5	3	2.9	24.57
American Eel *Anguilla rostrata*	D	U	2017	2022	0	5	3.5	0	5	1	0	4	5	1	2.5	24.50
Shortfin Mako Shark *Isurus oxyrhinchus*	Y	Y	2019	2024	0	1	1.2	3	5	3	5	2	3	1	1.4	24.21

Biological Sampling Priority Matrix

- Grouping of species in upper 25% of total matrix score, based on sampling adequacy and average priority (average of ASMFC, Council, NMFS and State priorities).
- Projects that target multiple upper quartile species should be given a higher priority.

Averaged Priority Columns	Biological Sampling Adequacy: Adequate (0 - 2)	Biological Sampling Adequacy: Inadequate (3 - 5)
High (≥ 3.0)		Black Sea Bass - Cobia - Spanish Mackerel
Low (< 3.0)	Red Snapper - Shortfin Mako Shark - Spiny Dogfish - Vermillion Snapper	American Eel - American Lobster - American Shad - Atlantic Halibut - Atlantic Menhaden - Bluefin Tuna - Blueline Tilefish - Finetooth Shark - Gag Grouper - Gray Triggerfish - Red Grouper - River Herring - Snowy Grouper - Tilefish

Bycatch Sampling Priority Matrix

Created in February 2023

For FY 2024

Our vision is to be the principal source of fisheries-dependent information on the Atlantic coast through the cooperation of all program partners.

Top Quartile of Bycatch Matrix Suggestions

Combined Fleets	Sig. Change in mgmt w/in past 36 mo	Amt of reg discards	Amt of non reg discards	Prot Spp Interactions	Score
Mid-Atlantic Gillnet	3	4	2	5	14
New England American lobster Pots	3	4	1	5	13
Mid-Atlantic American lobster Pots	3	4	1	5	13
South Atlantic shrimp Trawl	1	4	2	5	12
South Atlantic Deep Water shrimp Trawl	3	4	2	3	12
New England Otter Trawl	3	4	2	3	12
Mid-Atlantic Pound Net	1	4	2	5	12
Pelagic H&L Fleet (North)	3	4	1	3	11
Snapper grouper H&L Fleet	3	4	1	3	11
New England Gillnet	3	2	1	5	11
New England Extra-Large-Mesh Gillnet	0	4	2	5	11
Mid-Atlantic Small-Mesh Otter Trawl, Bottom	1	4	1	5	11
Mid-Atlantic Large-Mesh Otter Trawl, Bottom	3	2	1	5	11
Mid-Atlantic Fish Pots and Traps	3	4	1	3	11
South Atlantic Large Mesh Gillnet	0	4	2	5	11
Southeastern, Atlantic and Gulf of Mexico HMS Pelagic Longline	1	4	1	5	11
Mid-Atlantic Dredge, Other	1	4	1	5	11
New England Crab Pots	3	2	1	5	11
Southeastern, Atlantic and Gulf of Mexico HMS Shark Bottom Longline	0	4	1	5	10

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ACCSP Funding Prioritization of the Recreational Technical Committee
April 2023

The Recreational Technical Committee determines that recreational data collection priorities for inclusion in ACCSP's annual request for proposals (RFP) and also guides the allocation of resources for NOAA Fisheries' NOAA Fisheries' Marine Recreational Information Program (MRIP). The prioritized list of data needs, which were reviewed and approved by the ACCSP Coordinating Council and approved by MRIP, is provided below:

1. **Improved precision (PSE) and presentation of MRIP estimates**
2. **Comprehensive for-hire data collection and monitoring**
3. **Improved recreational fishery discard and release data**
4. **Improved timeliness of MRIP recreational catch and harvest estimates**
5. **Biological sampling for recreational fisheries separate from MRIP**
6. **Improved in-season monitoring**

SOCIOLOGICAL AND ECONOMIC DATA

The Committee on Economics and Social Sciences (CESS) developed a list of priority socioeconomic data elements for coastwide collection. The list is not exhaustive; it represents key elements that can serve as a baseline of fundamental socioeconomic information to support management decisions. The list of priority data elements includes:

1. Trip-level information (to be collected through voluntary or mandatory reporting, for all or a subset of participants)
2. Data elements for an owner/operator survey (to be collected through an annual or semiannual survey)*

The CESS identified these priority data elements with the understanding that data would be collected in the aforementioned methods and would be linked to other ACCSP data through identifiers. Alternative collection methods or the inability to link data with identifiers may require changes to the priority data elements list in order to ensure the utility of the data.

Note: Priorities for standalone surveys will differ from the priorities identified below due to their distinct methodologies and inability to leverage other ACCSP data. The CESS should be consulted when identifying data elements for standalone socioeconomic surveys to ensure their utility and, where practical, consistency across studies.

*The ACCSP recognizes the analytic value of collecting the data elements below. We recommend that partners be aware of and take into account the reporting burden to industry, the sensitivity and at times confidentiality of socioeconomic information, and other relevant perspectives when determining which data elements to collect and set as optional or mandatory.

A. COMMERCIAL FISHERIES

Table 1:
TRIP LEVEL INFORMATION

DATA ELEMENT	DESCRIPTION / CRITERIA
Trip Information	
Vessel Identifier	-Unique vessel identifier (e.g., US Coast Guard, state registration number, etc.) -These identifiers must be trackable through time and space.
Trip Identifier	- Unique identifier assigned to the trip
Labor Cost Information	
Total Crew Cost	- Total monetary amount that was given to the crew for this trip

Total Captain Cost (If other than owner)	- Total monetary amount that was given to the captain for this trip
Owner Share	- Total monetary amount the vessel (or permit) owner received for this trip
Other Trip Cost Information	
Fuel & Oil Costs	- Cost for all fuel and oil used on this trip
Bait Costs	- Cost for all bait used on this trip
Ice Costs	- Cost for all ice used on this trip
Grocery Costs	- Cost for all groceries used on this trip
Miscellaneous Costs	- Cost of any other expenses specific to this trip (not including wages, overhead, or fixed costs) E.g., offloading/non-crew labor costs, packaging costs, etc.

Table 2:
DATA ELEMENTS FOR OWNER/OPERATOR SURVEY

DATA ELEMENT	DESCRIPTION / CRITERIA
Vessel Identification*	-Unique vessel identifier (e.g., US Coast Guard, state registration number, etc.) -These identifiers must be trackable through time and space.
Fishermen Identification	-Unique ACCSP Identifier for fishermen
Labor Cost Information	
Crew Payment System	- Code to identify crew & captain payment system (e.g. share system, per day, per trip)
Percentage Share Crew	- Percentage share to crew (if applicable)
Percentage Share Captain	- Percentage share to captain (if applicable)
Percentage Share Boat/Owner	- Percentage share to boat/owner (if applicable)
Crew Wages	- Average crew wages for the year (crew payment system indicates whether by hour, trip, day, etc.) (if applicable)
Captain Wages	- Average captain wages for the year (crew payment system indicates whether by hour, trip, day, etc.) (if applicable)
Annual Costs (Most Recent Year)	
Labor costs (captain and crew not in household)	- Total costs of labor for captain and crew outside the owner/operator's household
Labor costs (to people within owner/operator household)	- Total costs of labor for captain and crew within the owner/operator's household
Annual Insurance Costs	- Hull, health, protection and indemnity, mortgage, etc.
Dockage	- Total cost for vessel dockage, home port and transient dockage
Loan Payments	- Principal and interest
New Gear/ Equipment	- Total cost of new gear or equipment acquired
Repairs & Maintenance	- Total cost of repairs & maintenance of vessel and gear that were conducted in the previous year
Permits & Licenses	- Total cost of fishing permits / licenses for the previous year

Leased Quota Cost	- Total cost of leased quota for the previous year
Other Professional Expenses	- Professional expenses not otherwise itemized
Demographic Information	
Household Size	- # of individuals in the household (including respondent)
Employment Status	- Current employment status (e.g., employed fulltime, part-time, unemployed, retired, etc.)
Education	- Highest level of education completed
Marital/Cohabitational Status	- Current marital or cohabitational status of respondent
Age	- Age of the respondent
Gender	- Gender of the respondent
Ethnicity	- Ethnic background
Total Annual Household Income	- Total annual household income
Number of Household Individuals Involved in Commercial Fishing	-Total number of household individuals involved in commercial fishing (including respondent)
Percent of Annual Household Income from Commercial Fishing	- Percent of household income that is generated through commercial fishing or support activities
County of Residence	-County of residence
Years in Community	- Years in county of residence
Fishing Activity Information	
Fishermen status	-Fishermen status (e.g. full time, part time, not actively fishing)
Years in Commercial Fishing	- Number of years participating in commercial fishery
Permits held	- fishing permits held (by permit type)
Permit use	- Were all permits used within the last year
Reason for Latency	-Reason for not using permit within the last year
Primary Species Landed by Month	- Primary species landed by month
Primary Gears Used by Month	- Primary gears used by month

*Vessel Identifier is needed to link trip-level data to survey results

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This list includes dates for fiscal year 2024, including ACCSP committee meetings, relevant dates of the funding cycle, as well as meetings or conferences ACCSP typically attends or which may be of interest to our partners. If you have any questions or comments on this calendar, please do not hesitate to contact the ACCSP staff at info@accsp.org.

Jan 23- Jan 25:	ASMFC Meeting – Arlington, VA
Jan 30- Feb 1:	NEFMC Meeting – Portsmouth, NH
Jan 31:	2023 FHTS Training– Webinar
Feb 6:	Biological Review Panel Annual Meeting – Webinar
Feb 7:	Bycatch Prioritization Committee Annual Meeting –Webinar
Feb 6-7:	MAFMC Council Meeting- Arlington, VA
Feb 13-14:	APAIS North Atlantic Training- Providence, RI
Feb 27-28:	APAIS South Atlantic Training- Raleigh, NC
Mar 1:	Start of ACCSP FY24
Mar 4-8:	SAFMC Meeting – Jekyll Island, GA
Mar 6:	Commercial Technical Committee Annual Meeting – Webinar
Mar 7:	Information Systems Committee Annual Meeting – Webinar
Mar 20-21:	Recreational Technical Committee Meeting – Crystal City, VA
Apr 1:	Operations and Advisory Committees Spring Meeting – Webinar
Apr 9-10:	MAFMC Meeting – Atlantic City
Apr 16-18:	NEFMC Meeting – Mystic, CT
Apr 29-May2:	ASMFC/Coordinating Council Meeting – Arlington, VA
May 6:	ACCSP issues request for proposals
Jun 4-6:	MAFMC Meeting – Riverhead, NY
Jun 10-14:	SAFMC Meeting – Daytona Beach Shores, FL
Jun 17:	Initial proposals are due
Jun 24:	Initial proposals are distributed to Operations and Advisory Committees
Jun 25-27:	NEFMC Meeting – Freeport, ME
July 5:	Any initial written comments on proposals due
Week of Jul 8:	Review of initial proposals by Operations and Advisory Committees – Webinar
July 17:	If applicable, any revised written comments due
Week of Jul 22:	Feedback submitted to principal investigators
Aug 5 -Aug 8:	ASMFC Meeting – Arlington, VA
Aug 12-15:	MAFMC Meeting – Philadelphia, PA

Aug 19:	Revised proposals due
Aug 26:	Revised proposals distributed to Operations and Advisory Committees
Week of Sep 2:	Ranking exercise for Advisors and Operations Members – Webinar
Sep 16-20:	SAFMC Meeting – Charleston, SC
Sep 24-25:	Annual Advisors/Operations Committee Joint Meeting (in-person; location TBD)
Sep 24-26:	NEFMC Meeting – Plymouth, MA
Oct 8-10:	MAFMC Meeting – New York, NY
Oct 21-24:	ASMFC Annual Meeting/Coordinating Council Meeting – Annapolis, MD
Dec 2-6:	SAFMC Meeting – Wrightsville Beach, NC
Dec 3-6:	NEFMC Meeting – Newport, RI
Dec 9-12:	MAFMC Meeting – Annapolis, MD

Appendix B: Ranking Criteria Spreadsheet for Maintenance and New Projects

Ranking Guide – Maintenance Projects:

Primary Program Priority	**Point Range**	**Description of Ranking Consideration**
Catch and Effort Biological Sampling Bycatch/Species Interactions Social and Economic	0 – 10 0 – 10 0 – 6 0 – 4	Rank based on range within module and level of sampling defined under Program design. When considering biological, bycatch or recreational funding, rank according priority matrices.
Data Delivery Plan	+ 2	Additional points if a data delivery plan to Program is supplied and defined within the proposal.

Project Quality Factors	**Point Range**	**Description of Ranking Consideration**
Multi-Partner/Regional impact including broad applications	0 – 5	Rank based on the number of Partners involved in project OR regional scope of proposal (e.g. geographic range of the stock).
> yr 2 contains funding transition plan and/or justification for continuance	0 – 4	Rank based on defined funding transition plan away from Program funding or viable justification for continued Program funding.
In-kind contribution	0 – 4	1 = 1% - 25% 2 = 26% - 50% 3 = 51% - 75% 4 = 76% - 99%
Improvement in data quality/quantity/timeliness	0 – 4	1 = Maintain minimum level of needed data collections ↓ 4 = Improvements in data collection reflecting 100% of related module as defined within the Program design. Metadata is provided and defined within proposal if applicable.
Potential secondary module as a by-product (In program priority order)	0 – 3 0 – 3 0 – 3 0 – 1	Ranked based on additional module data collection and level of collection as defined within the Program design of individual module.
Impact on stock assessment	0 – 3	Rank based on the level of data collection that leads to new or greatly improved stock assessments.

Other Factors	Point Range	Description of Ranking Consideration
Properly Prepared	-1 – 1	Meets requirements as specified in funding decision document Step 2b and Guidelines
Merit	0 – 3	Ranked based on subjective worthiness

Ranking Guide – Maintenance Projects: (*to be used only if funding available exceeds total Maintenance funding requested*)

Ranking Factors	Point Range	Description of Ranking Consideration
Achieved Goals	0 – 3	Proposal indicates project has consistently met previous set goals. Current proposal provides project goals and if applicable, intermediate metrics to achieve overall achieved goals.
Data Delivery Plan	0 – 2	Ranked based if a data delivery plan to Program is supplied and defined within the proposal.
Level of Funding	-1 – 1	-1 = Increased funding from previous year 0 = Maintained funding from previous year 1 = Decreased funding from previous year
Properly Prepared	-1 – 1	-1 = Not properly prepared 1 = Properly prepared
Merit	0 – 3	Ranked based on subjective worthiness

Ranking Guide – New Projects:

Primary Program Priority	Point Range	Description of Ranking Consideration
Catch and Effort Biological Sampling Bycatch/Species Interactions Social and Economic	0 – 10 0 – 10 0 – 6 0 – 4	Rank based on range within module and level of sampling defined under Program design. When considering biological, bycatch or recreational funding, rank according priority matrices.
Data Delivery Plan	+ 2	Additional points if a data delivery plan to Program is supplied and defined within the proposal.

Project Quality Factors	Point Range	Description of Ranking Consideration
Multi-Partner/Regional impact including broad applications	0 – 5	Rank based on the number of Partners involved in project OR regional scope of proposal (e.g. fisheries sampled).
Contains funding transition plan / Defined end-point	0 – 4	Rank based on quality of funding transition plan or defined end point.
In-kind contribution	0 – 4	1 = 1% - 25% 2 = 26% - 50% 3 = 51% - 75% 4 = 76% - 99%
Improvement in data quality/quantity/timeliness	0 – 4	1 = Maintain minimum level of needed data collections ↓ 4 = Improvements in data collection reflecting 100% of related module as defined within the Program design. Metadata is provided and defined within proposal if applicable.
Potential secondary module as a by-product (In program priority order)	0 – 3 0 – 3 0 – 3 0 – 1	Ranked based on additional module data collection and level of collection as defined within the Program design of individual module.
Impact on stock assessment	0 – 3	Rank based on the level of data collection that leads to new or greatly improved stock assessments.

Other Factors	Point Range	Description of Ranking Consideration
Innovative	0 – 3	Rank based on new technology, methodology, financial savings, etc.
Properly Prepared	-1 – 1	Meets requirements as specified in funding decision document Step 2b and Guidelines
Merit	0 – 3	Ranked based on subjective worthiness

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Robert Beal, Executive Director
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Transmitted Via email to Caitlin Starks

April 19, 2024

Dear Director Beal and American Lobster Board:

The Maine Lobstermen's Association (MLA) respectfully requests that the American Lobster Board reconsider the "24/7" provision of the electronic tracker requirement for federal lobster vessels in Addendum XXIX.

During the public comment period, members of the lobster industry raised concern that the requirement to track lobster vessels when they are not fishing went too far and was an unnecessary invasion of lobstermen's privacy that does nothing to further the goal of the management action. The MLA raised this concern in its January 31, 2022 comment letter opposing electronic trackers on lobster vessels, noting our members' concern that the unit must be in operation and collecting data even when the vessel is not fishing or actively steaming to or from federal lobster fishing waters. This issue was discussed, but left unresolved, by the American Lobster Board during its deliberations on Addendum XXIX at its February and March 2022 meetings.

During the March 2022 meeting Commissioner Stephen Train prompted an extended discussion on the need to include the "24/7" provision in the Addendum. He asked if it would be "possible to have this device only activate at the three-mile line, or only activate when the hydraulics are engaged and we're hauling?" He also noted that "law enforcement stated that it's important to know when the vessel is hauling and when it's not."

In response, ASMFC staff and technical advisors informed the board that it would be difficult to remove the "24/7" provision because 1) the draft Addendum "did not go out to public comment with that concept, [so] at this point in time it would be difficult to change" and 2) the devices were not developed and tested to track vessels only when fishing so "the cellular tracker doesn't even have a power on/power off switch."

This was a frustrating result for the lobster industry, particularly given that a rationale for why "the device must remain on board the vessel and powered at all times when the vessel is in the water" was not included in ASMFC's "FAQs on Electronic Vessel Tracking for American Lobster and Jonah Crab" (April 1, 2022) in response to questions raised during the public hearings on American Lobster Addendum XXIX.

Addendum XXIX's rationale for requiring trackers is to provide data to inform issues that "pose an acute need for high-resolution data on where and when fishery effort in the federal fleet occurs." The Addendum identifies four categories of challenges which require this type of fine scale temporal-spatial data -- 1) the lobster stock assessment, 2) fishery interactions with right whales and protected resources, 3) marine spatial planning, and 4) offshore enforcement. The Addendum states this data is needed to "significantly improve the information available to fishery managers and stock assessment scientists."

We are entering a new era in management where the lobster industry is trying to find a way to provide managers with the data needed for responsible marine resource management without invading fishermen's privacy or other protected interests. Addendum XXIX mandates an expansive tracker requirement at a time when the trend in legal thinking disfavors fishery management measures reaching beyond activities clearly under an agency's purview. Nowhere in the Addendum XXIX record does ASMFC provide a justification that tracking federal lobster vessels when they are not fishing is needed to achieve the goals of the management action.

The MLA cannot support policy that impinges upon individual privacy when there are solutions available to address this concern. To resolve the industry's concern, the MLA requests that ASMFC initiate an action to remove the "24/7" provision from the federal electronic tracker program.

Thank you.

Sincerely,

Patrice McCarron
Acting Chief Operating Officer

Mary Anne Mason
Legal Counsel

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Transmitted Via email to Caitlin Starks

April 23, 2024

Dear Director Beal and American Lobster Board:

The Maine Lobstermen's Association (MLA) respectfully requests that the American Lobster Board delay the implementation of the schedule of Lobster Management Area 1 gauge increases which begin January 2025. We also urge the Commission to update the trigger index with 2023 data as the terminal year for discussion at its summer meeting. The MLA shares ASMFC's goal to maintain a resilient lobster fishery, but we do not believe that a gauge increase is necessary at this time. MLA previously shared these concerns in our April 23, 2023, comment letter opposing an increase to the LMA 1 gauge.

We raise this issue again for several reasons.

1. **We continue to believe both the reference period of 2016-2018 and the percent trigger decline to be overly precautionary.**

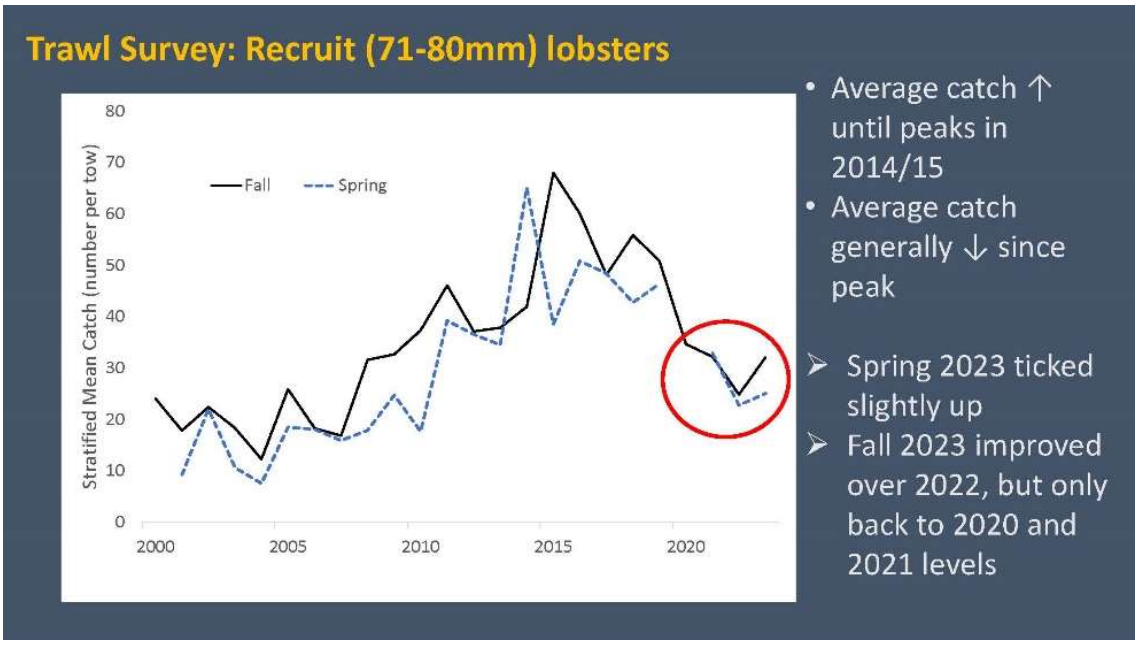
   According to Addendum XXVII, the purpose of raising the minimum gauge size is to increase biological resiliency through the protection of spawning stock biomass (SSB). The Plan Development Team (PDT) noted that a trigger level of 45% decline in indices from the reference period "still provides an opportunity for action before reaching the abundance limit" which is consistent with the addendum's goal (American Lobster Plan Development Team Memo, September 10, 2021). Furthermore, the reference period averaging the index values from 2016-2018 is arbitrarily high and overly precautionary because it includes the lobster fishery's record year for landings.

2. **The three-year average for the trigger was not successful in smoothing out extremes and unexpectedly triggered the schedule of gauge increases with the addition of only one year of data.**

The purpose of using a three-year average to compare to the reference period was to smooth out extremes that might occur from year to year to prevent unwarranted and potentially counterproductive management action. In this instance, the trigger index unexpectedly leapt from 21%, with 2021 as the terminal year, to 39.1% with 2022 as the terminal year. Rather than smoothing out the effects of years, the trigger index sent a potentially misleading signal for premature management action. MLA therefore believes a longer time period should be used for the average to compare to the reference period in order to base management action on a more realistic measure of trends in SSB resiliency.

3. **The results of Maine's 2023 lobster surveys are promising. Based on the fact that the addition of one year of data (2022) triggered the gauge increase (moving from 23% to 39%), it is possible that the addition of one year of data (2023) may reverse this decline.**

Maine's Department of Marine Resources (DMR) presented its 2023 survey data at the Maine Fishermen's Forum in March 2024 which show significant improvements in nearly all surveys including the Stage V Larval Survey, Young of the Year Settlement Survey (which surpassed the 2011 survey average in all areas), and the Spring and Fall Trawl Surveys. The Ventless Trap Survey had mixed results with a flattening in Area 513, increase in Area 512, and decline in 511.[1] These results make it very plausible that when 2023 data are included as the terminal year, the trigger index could recover to at or below 35%.



Source: Maine Fishermen's Forum, DMR slide 31

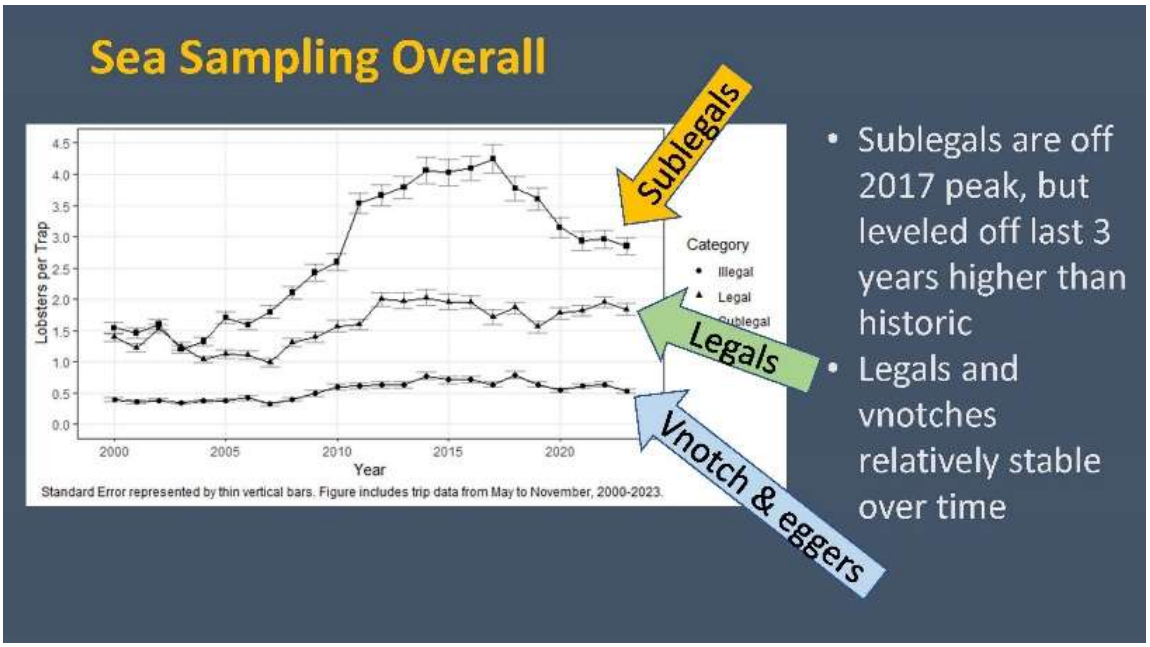
[1] mainefishermensforum.org/wp-content/uploads/DMR_LobsterWhaleScienceUpdate2024.pdf

4. **Lobstermen continue to report observing high numbers of undersized and eggers in their traps. Survey data show the number of eggers and v-notch lobsters remain stable at historic highs.**

The observations of Maine lobstermen support a positive outlook for the fishery. As noted in MLA's comment letter, many lobstermen continue to report seeing large numbers of eggers and undersize lobsters while fishing. Based on these observations and their expert knowledge of the fishery, they are skeptical that the magnitude of the decline based on the trigger index is accurate.

Furthermore, the trend in sublegal and legal lobsters does not appear to correspond to the number of eggers, leading many lobstermen to question whether increasing SSB will in fact stabilize catch in the future. Many lobstermen believe that environmental factors, rather than SSB, may be impacting settlement and juvenile lobster abundance, as happened with Northern shrimp.

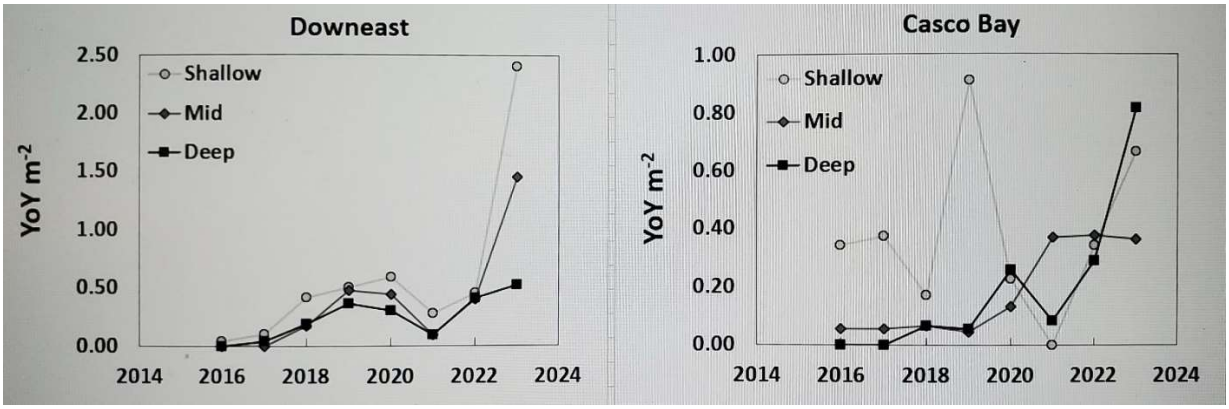
The Lobster PDT reported, "It should be noted that the effects of increasing SSB on recruitment are difficult to predict and are likely heavily influenced by other factors… the negative influence of environmental factors (e.g. declining larval food resources) on recruitment processes may have a stronger impact on recruitment success than the number of spawners, thus it is not certain that increases to SSB resulting from gauge changes will result in subsequent increases to recruitment" (September 10, 2021 PDT Memo).



Source: Maine Fishermen's Forum, DMR slide 34

5. **Lobstermen are concerned that lobster distribution has shifted, and surveys are not accurately sampling settlement and juvenile lobsters.**

   Lobstermen have hypothesized that lobsters are settling in deep water habitats not historically surveyed. A project funded by Maine lobster dealers, in collaboration with the University of Maine, has been surveying deep water lobster settlement for eight years. In 2023, the deepest water sites in Casco Bay had the highest settlement with strong deep water settlement at Downeast sites.



Source: Courtesy of Dr. Andrew Good, University of Maine (Via Curt Brown)

6. **Addendum XXVII was silent on trade issues arising when the U.S. minimum gauge becomes larger than Canada's minimum gauge. The addendum provided no guidance on how the Mitchell Provision would be implemented creating the need for Addendum XXX. By contrast, Addendum XXVII does address the impacts of standardizing measures across LMAs on interstate commerce (*See* "Interstate Shipment of Lobsters" in Section 2.7.1).**

   MLA's April 23, 2023, comment letter states, "Potential trade issues arising from the Magnuson Act prohibition on the import and sale of lobsters smaller than the U.S. minimum were raised when the previous draft of Addendum 27 was released, yet this issue is not addressed in the updated addendum. MLA understands anecdotally that ASMFC has determined the proposed increases to the LMA 1 minimum gauge will not impede lobster imports from Canada, however, this information is not (but should be) included in the addendum."

7. **Maine lobstermen and Maine lobster dealers now have opposite claims of harm based on how the Mitchell Provision is implemented. There is no guidance to resolve these disparate concerns to objectively assess impacts on the industry.**

   Addendum XXVII has created a new problem regarding the import of undersize lobster from Canada, leaving Maine's lobstermen and dealer/processors at odds over how it should be implemented. This unresolved issue is significant given the inter-dependance of the U.S. and Canadian lobster fisheries to meet demand.

The MLA is adamantly opposed to the import of Canadian lobster under the U.S. minimum size because it would have a significant negative impact on the boat price for Maine lobster. Furthermore, Downeast lobstermen will be forced to throw back lobsters that could then be caught and landed by Canadian lobstermen fishing in shared waters only to be sold back to the U.S. By contrast, Maine dealers and processors have raised a different set of concerns regarding access to supply and other market concerns.

The MLA is confident that a gauge increase is not needed now. A delay would allow ASMFC the time it needs to resolve issues with the three year averages for both the reference period and trigger index, gain another year of survey data to determine whether or not the indices are still in decline, work with the industry to understand the full range and impact of concerns regarding the import of undersize lobster from Canada, and to continue to work with Canada to resolve trade impacts if the U.S. minimum gauge is increased. The MLA strongly urges the Commission to delay the implementation of the gauge increase scheduled for January 2025 and update the trigger index with 2023 data as the terminal year for discussion at its summer meeting.

Thank you for your consideration.

Patrice McCarron

Patrice McCarron
Acting Chief Operating Officer

HOUSE OF REPRESENTATIVES

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Tiffany.Strout@legislature.maine.gov

Dear Commissioner Keliher,

We the undersigned are writing to you today to request assistance from yourself, Representative Hepler and Mr. Train as members of the Atlantic States Marine Fisheries Commission (ASMFC) with pausing the implementation of a change in the undersized measure of a lobster harvested, to be implemented by the ASMFC in January of 2025. With the understanding the lobster industry needs to have sustainability policies in place to help ensure the continuation of the heritage industry, concern has been brought forward by the industry of this change in the under measure hoping to have an effect on sustainability but is certain to have a huge effect on the commercial fishermen.

As the industry has both grown and become more profitable, those in the industry have worked tirelessly to monitor the industry and put forward policies such as v-notching egg bearing females so they will not be able to be caught in the future and would continue as proven breeders producing lobsters for the future.

A couple of major concerns with a change in the undersize measure are, the decrease in the landings estimated to be 20% in zone A and the unfairness of the competition with the fishermen in Canada. When zone A lobstermen return under sized lobsters, those moving lobsters are going to crawl in the Canadian traps and be caught and kept for sale. The unintended consequences of changing the undersized measure are a decrease of landings for Maine lobstermen and an increase in landings for the Canadian lobstermen still resulting in the same number of lobsters harvested.

We understand an amendment has been proposed that would not allow live lobsters to be imported into the United States that did not meet the measurement requirements imposed on Maine fishermen. Our concern is, if this amendment only relates to live lobsters, but not processed meat, there would be no way to measure the shell of the lobster that was harvested and would there for not deter the catch of the new undersized measured lobsters in Canada as they could be caught, processed, and shipped into the United States.

In addition, the lobstermen have been under extreme stress and financial hardships implementing gear for all the whale regulations, increased cost in bait, increased cost in fuel and recently extreme storms that have destroyed both boats and wharfs. At this time, implementing a change in the undersize measure, when the science is showing leveling off or a slight increase in juvenile lobsters being recorded seems like yet another unnecessary regulation.

Allowing the lobstermen to work continue to work while there is a pause in the whale regulations will provide more data for better scientific review. The lobstermen are the biggest stewards of the ocean and the fishing industry, not just lobstering. As a representative of the industry, the information you can provide to ASMFC could be a deciding factor.

Thank you for your time and consideration of this recommendation. We are looking forward to hearing your thoughts and working with you towards a pause in the new undersized measure regulation.

Sincerely,

Tiffany Strout
State Representative

District 11 Addison, Beals, Columbia, Columbia Falls, Harrington, Jonesboro, Jonesport, Machias, Milbridge, Roque Bluffs, Whitneyville, Centerville Township, and North Washington (Part)

And the following signatories:

Cameron Reny
State Senator, District 13

Anne Beebe-Center
State Senator, District 12

Marianne Moore
State Senator, District 6

Kenneth "Bucket" Davis
State Senator, District 10

James Dill
State Representative, District 26

Victoria Doudera
State Representative, District 41

Holly Eaton
State Representative, District 15

Irene Gifford
State Representative, District 28

Scott Landry
State Representative, District 75

Abden Simmons
State Representative, District 45

James Thorne
State Representative, District 35

Atlantic States Marine Fisheries Commission
Lobster Conservation Management Team (LCMT) Area 2
Meeting – April 9, 2024

LCMT Member Present: L. Dellinger (Chair), A. Eagles, B. Thibeault, G. Mataronas, J. Drake.

LCMT Member Absence: M. Bolin, R. Smith, T. Field, W. McElroy, M. Marchetti, T. Tomkiewicz, D. Magee

Summary

The LCMT met on April 9, 2024 at 4PM using a hybrid platform. The basis of the meeting was to discuss the NOAA Fisheries' rulemaking on LCMA 2 ownership caps and trap cap reductions, which responds to the Commission's Addenda XXI and XXII (2013). The goal of the meeting was to provide comments from the LCMT Area 2 members to the ASMFC Lobster Management Board regarding the rule making, given its implementation is ten years after the initial Addendas' establishment.

The LCMT first commented on the sunset clause of May 1, 2022, noting that the date should be revised or removed altogether. They noted that the Area 2 fishery has changed a lot over the last ten years and with that, there should be an effort to enhance or create flexibility for permit holders where possible. Similar sentiment and justification were provided regarding the trap limit for those holding two permits, with the LCMT noting that they should be able build a second permit up to 800 traps and not be held at the trap limit established with the May 2022 control date. The LCMT also noted that the ability to bank up to 800 traps is imperative for possible future management scenarios where traps could be reduced as in previous years. The LCMT also discussed whether it would make more sense to have management focus on the number of permits or number of traps. This was largely placed in the context that in order to build up to a second permit of 800 traps, a federal permit holder may have to buy multiple or several permits that have low trap allocations. This resulted in the question as to whether a permit cap should exist. In an instance of a federal permit holder buying several permits to build a second permit up to 800 traps, there was question as to whether the permits resulting in zero traps would then be dissolved or simply shelved with zero traps on them. One harvester noted that in many instances over the last several years, federal lobster permits have been sold as part of other transactions that have resulted in the permits leaving the Area 2 fishery altogether, thus concern about increasing above the current level of effort in the future with more flexible trap or permit caps is unlikely.

Those fishing state waters also recommended that for any changes taking place on this topic, they should apply to both state license and federal permit holders. The LCMT discussed the term 'entity' and asked that any future ASMFC addenda or NOAA rules clearly define the term and make sure there is consistency between Commission and NOAA rule language.

Atlantic States Marine Fisheries Commission

Lobster Plan Development Team

Call Summary

Monday, April 1, 2024
2:00 – 4:00 PM

Attendance:
Lobster Plan Development Team Members: Caitlin Starks (ASMFC), Alli Murphy (NOAA), Corinne Truesdale (RI DEM), Josh Carloni (NHFG), Story Reed (MA DMF)
Additional Attendees: Todd Boothroyd

The Lobster Plan Development Team (PDT) met on April 1, 2024 to discuss the following task from the American Lobster Board (Board):

> *Move to have the Plan Development Team review the conservation measures originally set in Addenda XXI and XXII and make recommendations for alternate measures to achieve those reductions inclusive of the Lobster Conservation Management Team [LCMT] recommendations by the ASMFC Spring Meeting.*

Staff reviewed the background of the task and the Addenda, and then the PDT discussed information needed to develop recommendations. The PDT agreed that more recent data are needed to better understand the current state of the fishery in Southern New England (SNE). Specifically, the PDT agreed to gather data to update the tables in Addendum XXI, including traps allocated and maximum traps fished by Lobster Conservation Management Area (LCMA) by year. This should show how effort has changed in these areas over time since the Addenda were approved in 2013. The PDT noted that the data we have now are better than what was available at that time since the states have been recording number of trap tags purchased and the number reported by harvesters.

Alli Murphy agreed to reach out to NOAA statistics staff to request similar data as the states. In addition to the allocated and maximum traps fished discussed above, this would also include the number of federal Area 2 and 3 permits issued and maximum allocations for those permits. The PDT also discussed analyzing maximum traps fished to understand how many entities have traps above the final active trap caps for each LCMA.

The PDT agreed that the development of the Jonah crab fishery since the approval of Addenda XXI and XXII is an important issue that needs to be accounted for in this discussion. Changes to lobster trap limits would affect the Jonah crab fishery as well. Data from the recent Jonah crab assessment can be used to describe the trends in directed Jonah crab effort and landings versus directed lobster effort and landings in Area 2 and Area 3 over time. Another point raised is that there is anecdotal evidence that Area 3 vessels that used to fish in the SNE stock area have

moved north and may now be fishing more in the Gulf of Maine/Georges Bank (GOM/GBK) stock area. If the goal of the Addenda was to scale the size of the SNE fishery to the resource, then effort shifting from the SNE stock to the GOM/GBK stock will be important to consider as the PDT evaluates alternative measures to trap reductions to achieve that goal. Data being gathered for the ongoing lobster stock assessment may be available to look into changes in landings and effort by stock area over time.

The PDT noted that without looking at these data and better understanding how the current fishery compares to the measures that were intended to be implemented by this point, it cannot make recommendations on how to achieve the goal of Addenda XXI and XXII with alternative measures. The PDT members agreed to gather the data discussed as quickly as possible and meet again before the Board meeting in May. The PDT also noted that it cannot consider the LCMT input until the meetings are held; meetings of the Area 2 and 3 LCMTs have not yet been scheduled.

Atlantic States Marine Fisheries Commission

Lobster Plan Development Team

Call Summary

Thursday, April 18, 2024
2:00 – 4:00 PM

Attendance:

Lobster Plan Development Team Members: Caitlin Starks (ASMFC), Alli Murphy (NOAA), Corinne Truesdale (RI DEM), Story Reed (MA DMF)

Additional Attendees: Hank Soule

The Lobster Plan Development Team (PDT) met on April 18, 2024 to continue working on the Lobster Board task to review the conservation measures originally set in Addenda XXI and XXII and make recommendations for alternate measures. The PDT members presented the data they gathered on trap allocations and maximum traps fished for LCMA 2 and LCMA 3. Story presented total LCMA 2 traps allocated for MA, for state only permits, federal permits, and both combined from 2010 through 2024. There has been a decline in the MA total allocations for LCMA 2 during this period, and the number of active permits landing in MA for both LCMAs has also declined. Corinne presented RI data for vessels that report via eTRIPS; she did not have access to VTR data. This excludes a large portion of the RI lobster fishery for LCMA 3. For LCMA 2, between 2008 and 2023, there have been declines in total allocations and max traps fished, though 2012 through 2014 were missing from the dataset. Alli presented LCMA 2 and 3 federal data on allocations and maximum traps fished, excluding MA-permit holders from 2013 through 2023. These data show that, while allocations have decreased with trap reductions, the maximum number of traps fished has remained fairly stable numbers for LCMA 2 (since 2015 when access was limited based on historic participation). In LCMA 3 maximum traps fished decreased from 2013 through 2015, then increased from 2016 through 2021, and has since decreased. Looking at the data for the number of traps issued to each permit, it seems that in LCMA 3 traps have been transferred from smaller allocations to maintain larger allocations.

With these available data, the PDT observed:

- A 42% reduction in LCMA 2 allocation between 2010 and 2023, though not all jurisdictions had data available for this timeframe
- A 38% reduction in LCMA 2 max traps fished between 2013 and 2022
- A 28% reduction in LCMA 3 allocation between 2013 and 2023
- A 4.3% reduction in LCMA 3 max traps fished between 2013 and 2022, but relatively steady numbers over the time period

The PDT identified data gaps that need to be filled, including federal LCMA 3 allocation data back to 2008 and inclusive of MA, and missing LCMA 2 allocation data from 2011-2015. To better understand changes in the Southern New England (SNE) fishery, such as whether effort in LCMA 3 has shifted from SNE to the Gulf of Maine/Georges bank stock, the PDT also needs to separate the LCMA 3 data by stock area. It is unlikely these data will be available to the PDT before the Board meeting.

With additional data, the PDT will aim to answer the following questions to better characterize the current fishery context in relation to the goals of Addenda XXI and XII:

1. Has the size of the fishery been scaled to the size of the resource?
    a. How is this measured?
    b. How much has maximum number of traps fished decreased?
2. Has latent effort been addressed (e.g., eliminated, reduced)?
    a. How have the ratios of maximum traps fished to allocations changed?
    b. How many permits currently have more than the individual permit cap (800 traps)?
3. Have there been long term reductions in traps fished?
4. Is it possible under current regulations for fishing effort in the SNE fishery to increase from current levels?
    a. By how much?
5. What types of measures could replace the Addenda XXI and XXII measures to reduce fishing effort by the same amount?
6. How has Jonah crab directed effort changed in SNE?

The PDT noted that more guidance from the Board is needed on the specific conservation goals the PDT should recommend alternative measures to achieve. Addendum XXI and XXII contain language that identifies a number of objectives for these Addenda. Overall, they describe the main goal as "scale the SNE fishery to the diminished size of the SNE resource." Language in the problem statements and background sections identifies these objectives aligned with the overarching goal:

- Eliminate latent effort so that trap limits are effective
- Long-term reductions in traps fished
- Prevent increases in fishing effort
- Mitigate some of the anticipated unintended consequences of trap allocation transferability program (increase in fishing effort)

The PDT thinks the last bullet above is no longer relevant, because the trap transferability program was already implemented in the absence of the Addenda XXI and XXII measures for federal permit holders. Of the other three, the PDT would like input from the Board on which objectives should be the focus of the PDT's recommendations for alternative measures.

The PDT recognizes that the Board had intended for this task to be completed before the Spring Commission meeting. However, because the PDT was unable to consider the input of both

Lobster Conservation Management Teams (LCMT) as directed, this is not possible. Thus, the PDT requests more time to compile additional data on the fishery and consider LCMT input before completing this task.

COMMONWEALTH of VIRGINIA

Marine Resources Commission
380 Fenwick Road
Building 96
Fort Monroe, VA 23651

Travis A. Voyles
Secretary of Natural and Historic Resources

Jamie L. Green
Commissioner

April 18, 2024

Robert E. Beal, Executive Director
Atlantic States Marine Fisheries Commission
1050 N. Highland Street, Suite 200 A-N,
Arlington, VA, 22201

Mr. Beal,

Your staff asked if I could provide another update on recent events regarding the Atlantic Menhaden fishery in the Commonwealth. I would ask that you refer to my memo of April 4, 2023, and presentation to the Atlantic Menhaden Fishery Management Board on May 1, 2023, for events prior to the last year.

Memorandum of Understanding
A memorandum of understanding was signed by participating parties (reduction representatives, bait representatives, and the Marine Resources Commission (MRC) on April 20, 2023. The MOU developed several new temporal and spatial restrictions on menhaden purses seines in the Chesapeake Bay with a goal to limit future spill incidents and to create a transparent and efficient spill response protocol. The intent of the time and area restrictions outlined in the MOU are to reduce the possibility of fish spills during weekends and holidays when stakeholders are using public beaches. In the event of spills, buffers were created along densely populated shorelines to ensure spills are more likely to be cleaned up prior to reaching shore. There were no reported spills during the 2023 fishing season – a first since records on spills began in 2016.

2024 Legislation
Two menhaden bills were introduced during the 2024 Virginia General Assembly session. HB 19 Ware) was a follow up to the 2023 SB1388 (Lewis) which required VIMS to develop plans for studying the ecology, fishery impacts, and economic importance of menhaden populations in the waters of the Commonwealth and report to the Chairmen of the Senate Committee on Agriculture, Conservation and Natural Resources and the House Committee on Agriculture, Chesapeake and Natural Resources same committees by September 1, 2023. HB19 was continued to 2025 in the Rules Committee.

HB928 addressed interference with commercial fishing vessels or activity and pursuant penalties. A number of alarming videos surfaced of recreational watercraft harassing commercial fishing vessels, deliberately interfering with fishing activities, and even running vessels inside of a fish net while being deployed and retrieved. Although the Commonwealth already had laws preventing such interference, this bill increased the penalty to a Class 1 misdemeanor and included the revocation of all fishing and hunting privileges for one year. Repeat offenders would face a three-year revocation of all fishing and hunting privileges. The bill also requires any person convicted of a violation to complete boating safety education. The bill passed both the house and senate unanimously.

VIMS Atlantic Menhaden Workshop

Twenty-one scientists, fisheries managers, commercial fishermen, recreational anglers, stock assessment biologists, and members of non-government organizations met at William and Mary in Williamsburg, VA, on August 8-9, 2023, to discuss Atlantic Menhaden research priorities in accordance with SB1388. The diverse list of participants generated ideas for Chesapeake Bay research projects which became the foundational objectives for future research. The second day was spent discussing the feasibility of those research topics and developing budgets and logistics for implementing that research. The group developed nine ecology, fisheries impacts, and economic research priorities planned over three years for the Virginia General Assembly to consider during the 2024 session. The estimated cost for all nine projects was $2.5 million dollars. Those priorities included:

Ecology

1. Estimate the seasonal abundance of Atlantic menhaden in Chesapeake Bay.
2. Evaluate movement rates of Atlantic menhaden between the Atlantic coast and Chesapeake Bay.
3. Assess impacts of predator demand and consumption of Atlantic menhaden.

Fishery Impacts

1. Analyze spatiotemporal patterns in Atlantic menhaden commercial fishing effort in Chesapeake Bay.
2. Assess the possibility of localized depletion of Atlantic menhaden in Chesapeake Bay.
3. Quantify changes in the recreational fisheries in Chesapeake Bay.

Economic Importance

1. Assess the economic impacts of management decisions on Atlantic menhaden fisheries and related industries.
2. Conduct a contemporary assessment of the social and economic importance of Atlantic menhaden in the Chesapeake Bay region.
3. Quantify the bioeconomic impact of Atlantic menhaden fishery removals from the Chesapeake Bay to those from the Atlantic coast.

The report was submitted to the General Assembly on October 1, 2023, and became the foundation for House Bill 19 during the 2024 session. The bill was referred to the Rules Committee who in turn sent it to the Studies Subcommittee on January 25, 2024. The subcommittee recommended

continuing to 2025 by voice vote. Although funding for the priorities was not appropriated in 2024, The workshop report provides an outline for the menhaden research needs for the Chesapeake Bay that may produce future funding opportunities.

Petitions for Rulemaking

Petitions for Rulemaking per § 2.2-4007 of the Code of Virginia is applicable for the menhaden fishery. The petition must specify the purpose and substance of the requested rulemaking, including references to relevant Virginia Administrative Code sections and must reference the legal authority of the agency to take the requested action. The request is posted on https://townhall.virginia.gov with a 21 day public comment period, where after the agency has 90 days to issue a written decision to grant or deny the petitioner's request, including reasons for either granting or denying.

On June 27, 2023, an email was received by an individual requesting a "*petition for regulation to ensure proper gear type use in Virginia Waters pertaining to the depth of current purse seine nets utilized and its relationship to the depth of waters within the Chesapeake Bay waters by the menhaden purse seine net fishery*." A total of 1077 comments were received during the required 21-day comment period. The VMRC board voted 5-0-1 to deny the petitioner's request at its October 26, 2023, public meeting.

On December 21, 2023, a petition was received by the Chesapeake Legal Alliance and Southern Maryland Recreational Fishing Organization entitled "*Petition for rulemaking to the Virginia Marine Resources Commission regarding Atlantic menhaden, the Chesapeake Bay, and the reduction fishery*". The petition requests:
1. Enact a moratorium in the Bay: Set a precautionary moratorium on purse seine landings by the menhaden reduction fleet within the Chesapeake Bay.
2. Require no less than 40% of harvest from federal waters: Set a limit of no more than 60% of current purse seine menhaden landings within Virginia waters (approximately 94,000 metric tons).
3. Codify a 1-mile shoreline buffer: Establish a permanent 1-nautical mile shoreline buffer along Virginia's shoreline prohibiting the use of menhaden purse seines.
4. Fund and implement a menhaden population study: Implement and enhance the Atlantic Menhaden Research proposal to investigate localized depletion and its impacts on the Bay (VIMS, October 1, 2023).
5. Establish proper industry oversight: Require increased vessel and landings monitoring and reporting to ensure compliance and reduce bycatch and impacts on Bay habitats.

The 21-day public comment period ended February 5, 2024, with 1052 total comments. The agency has 90 days to respond to this request and are planning a public hearing for the April 23rd Commission meeting.

Menhaden Management Advisory Committee (MMAC)
The MMAC is comprised of up to 12 non-legislative citizen members residing in the Commonwealth with knowledge of the menhaden resource and are appointed by the MRC Commissioner. Seven seats are designated for specific representatives – reduction, bait, labor,

recreational angler, conservation, sportfish industry, and ASMFC TC rep. The Committee has held one to two public meetings per year since April 2020 to discuss and address various concerns.

On September 27,2023, a meeting was held to discuss the progress on SB1388 and the Chesapeake Bay Menhaden Research Objectives Workshop.
Agenda
Meeting Video
Draft Minutes

Public Interactions
There has been an increased number of public interactions regarding menhaden over the past three years. These interactions include increased public participation and comment during MRC's monthly Board meetings, 11 Freedom of Information Act (FOIA) requests (April 2023-March 2024), and correspondence with local and state representatives.

The Commonwealth has a very open and transparent process for regulating and managing our fisheries. The public is welcomed at all our workgroup, advisory committee, and Commission meetings and are given ample time to provide comment regarding items on each agenda item as well as given a specific time for items not on the agenda. Our Commission members and staff take the public's comments and concerns seriously and try to respond in a timely and responsible manner. Additionally, all our meetings are broadcast live on our YouTube channel (https://www.youtube.com/@vamarineresources) and archived for the public to watch at their convenience.

Again, we thank you for the opportunity to provide this update regarding menhaden issues in the Commonwealth. We will be glad to provide any additional information you, your staff, the Menhaden Board, or Technical Committee may have on these issues.

Sincerely,

Patrick J. Geer
Chief of Fisheries Management Division
Virginia Marine Resources Commission

cc: Jamie Green, Commissioner
Bryan Plumlee, Governor's Appointed Commissioner
Shanna Madsen, VA Menhaden TC rep
Toni Kerns, ASMFC Fisheries Policy Director, Interstate Fisheries Management Program
James Boyles, ASMFC Atlantic Menhaden FMP Coordinator

Atlantic States Marine Fisheries Commission

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Joseph Cimino (NJ), Chair *Dan McKiernan (MA), Vice Chair* *Robert E. Beal, Executive Director*

Sustainable and Cooperative Management of Atlantic Coastal Fisheries

Atlantic States Marine Fisheries Commission
Fiscal Year 2025 Appropriations Priorities for Atlantic Interstate Fisheries Management

Report Language Requests from Member States
ASMFC and the 15 Atlantic states request report language for the following items:

1) NorthEast Area Monitoring and Assessment Program (NEAMAP)
2) Mid-Atlantic Horseshoe Crab Trawl Survey
3) Improving Protections for Endangered North Atlantic Right Whales and Mitigating Regulatory Impacts on U.S. Fisheries
4) Industry-Based Fishery Survey Pilot Program
5) American Lobster and Jonah Crab Research Fleet
6) Chesapeake Bay Atlantic Menhaden Abundance
7) Four Commission/USGS Cooperative Research

Line Items and Programs, Projects and Activities (PPA) Priorities
ASMFC and the 15 Atlantic states have identified the following Line Items and Programs, Projects and Activities (PPA) as priorities for FY24:

8) Atlantic Coastal Fisheries Cooperative Management Act & Regional Councils and Fisheries Commissions
9) Interjurisdictional Fisheries Act Grants
10) Joint Enforcement Agreements
11) Fisheries Data Collections, Surveys and Assessments
    a. Southeast Area Monitoring and Assessment Program (SEAMAP)
    b. Fisheries Information Networks
12) Recreational Data Collection and Management

Report Language Requests from Member States

1) Northeast Area Monitoring and Assessment Program

Fisheries Surveys— within Fisheries Data Collections, Surveys, and Assessments, NMFS is directed to fully fund both Northeast Area Monitoring and Assessment Program (NEAMAP) trawl surveys: the Maine-New Hampshire Inshore Trawl Survey and Mid-Atlantic/Southern New England Nearshore Trawl Survey.

2) Mid-Atlantic Horseshoe Crab Trawl Survey

Horseshoe Crabs —Adequate data is required to ensure States and interstate managers can effectively manage the Horseshoe Crab population, which is important to the biomedical and commercial fishing industries, as well as to the ecology of the Mid-Atlantic region. The

Committee directs NMFS to continue the Horseshoe Crab survey to generate the data necessary to ensure that the Horseshoe Crab stock remains on a sustainable path.

3) Improving Protections for Endangered North Atlantic Right Whales and Mitigating Regulatory Impacts on U.S. Fisheries

North Atlantic Right Whale — NOAA shall continue to support disentanglement, stranding response, and necropsy activities, and is encouraged to develop habitat and distribution models and long-term tagging methods. NOAA is directed to support monitoring efforts, including aerial surveys, vessel surveys, and passive acoustic monitoring in the waters of the Atlantic Ocean that is equivalent to or greater than the efforts supported by the fiscal year 2024 enacted level, particularly in the Gulf of Maine and other areas where there are data gaps on North Atlantic Right Whale (NARW) habitat or increased risk from human activities, including vessel traffic. Within increased support provided, no less than the fiscal year 2024 enacted level shall be to support pilot programs to develop, refine, and field test innovative lobster and other fishing gear technologies as described in Senate Report 116-127 and codified in Public Law 116-93.

Within funding provided, $26,000,000 shall be provided to States through the Atlantic States Marine Fisheries Commission, which shall be used to cover costs associated with testing or voluntary implementation of innovative gear to inform future Atlantic Large Whale Take Reduction Plan rule development and electronic tracking requirements within the Northeast lobster and Jonah crab fisheries. Funding may also support broad-scale monitoring efforts to inform understanding of NARW habitat use, dynamic management, and the development of alternative distribution and risk models. Funding to the States shall be proportional to the number of active federally permitted lobster trap harvesters in each State, and the allocation details shall be developed by the States through the Atlantic States Marine Fisheries Commission. Not more than 5 percent shall be used for administrative costs.

NOAA shall continue to work with Canadian officials to develop risk reduction measures that are comparable in effectiveness for both vessels and fisheries and to incorporate Canadian fishery measures, Canadian vessel restrictions, and U.S. vessel restrictions into future assessment of overall risk reduction. To improve regional engagement, NOAA is encouraged to include regional management bodies and pertinent States in bilateral engagements with Canadian officials regarding coordinated efforts to enhance NARW recovery.

Northeast Lobster Enforcement —Within Enforcement, the Committee provides not less than $1,400,000 for NMFS, in partnership with the relevant States, JEA partner agencies, and the Atlantic State Marine Fisheries Commission, to continue the pilot cooperative offshore lobster enforcement program that was initiated in fiscal year 2021.

Plankton Recorder Survey —The Committee notes the continued importance of understanding the distribution of Calanus finmarchicus plankton to inform the conservation of North Atlantic right whales. Within the amount provided for Fisheries Data Collections, Surveys, and

Assessments, the Committee provides not less than $300,000 to conduct a continuous plankton recorder survey.

International Fisheries Management Coordination —The Committee is aware that conflicting American and Canadian fisheries management measures in the Gulf of Maine have generated concerns from the domestic fishing and lobster industries, due to differing conservation regulations. The Committee encourages NOAA to work with Canadian and state fisheries officials to explore the development of an agreement that provides for cooperative fisheries management of this unique area.

4) Industry-Based Fishery Survey Pilot Program

Industry-Based Fishery Survey Pilot Program — The Committee is increasingly concerned that Federal vessel-based fisheries surveys necessary for determining sustainable and optimal harvest rates for commercial and recreational fisheries have been canceled with increasing frequency in recent years, without effective contingency plans for covering the resulting data gaps. Lost sea days on federal vessel-based surveys result in lost commercial fishing opportunities, as greater uncertainty around stock size and movement necessitates more conservative harvest strategies.

The Committee recognizes that an industry-based multispecies bottom trawl survey (IBS) would create resiliency in survey activities in the Northeast region and could enhance fishermen's trust of the data informing stock assessments. The Committee provides an additional $3,000,000 within Fisheries Data Collections, Surveys, and Assessments to design and implement a pilot industry-based fishery survey. This program will be designed to run in conjunction with and in complement to NOAA's established surveys. The IBS should seek to complement the Bigelow's work, and follow NMFS protocols to the extent practicable.

5) American Lobster and Jonah Crab Research Fleet

American Lobster and Jonah Crab Research — American lobster is the nation's most valuable single-species fishery. Adequate data are required to ensure that State and interstate managers can effectively and sustainably manage lobster and Jonah crab stocks. The Committee provides up to $300,000 within Fisheries Data Collections, Surveys and Assessments to support a cooperative research program to collect biological, fishery, and environmental data for American lobster and Jonah crab using modern technology on commercial fishing vessels.

6) Chesapeake Bay Atlantic Menhaden Abundance

Chesapeake Bay Atlantic Menhaden Abundance –The Chesapeake Bay is a critical nursery area for Atlantic menhaden and other commercially and recreationally important species like blue crab and striped bass. Menhaden comprise a majority of the forage base in the Chesapeake Bay and are the primary food source for other fish, birds, and whales in the region. The Committee provides $2,700,000 within Fisheries Data Collections, Surveys and Assessments to the Atlantic States Marine Fisheries Commission to complete the research outlined in the Virginia Institute of Marine Science "Atlantic Menhaden Research Planning" document. Funding may be

distributed by the Commission to the entities listed in the "agency" section of each research priority.

7) Four Commission/USGS Cooperative Research

Cooperative Research – Within the increase to the U.S. Geological Survey's Ecosystem Mission Area, the Committee provides no less than $4,000,000 for U.S. Geological Survey Science Centers to conduct cooperative research with the Atlantic, Gulf, Pacific and Great Lakes interstate/international fishery commissions. Funding shall be distributed equally to support each Commission. Research shall address state and USGS/DOI science priorities, including climate considerations, that emphasize actionable science in support of fisheries management. Projects that include a combination of state, commission, and USGS scientists should be prioritized. These funds shall supplement not supplant current funding for USGS Science Centers.

Line Items and Programs, Projects and Activities (PPA) Priorities

8) Regional Councils and Fisheries Commissions

The Regional Councils and Fisheries Commissions Line Item supports the eight regional fishery management councils, and three interstate marine fisheries commissions, as well as the Atlantic Coastal Fisheries Cooperative Management Act (Atlantic Coastal Act). The Atlantic Coastal Act provides funding to the 15 Atlantic coast states and NOAA Fisheries to meet the requirements of the law.

a) Atlantic Coastal Act
b) Regional Councils and Fisheries Commissions

9) Interjurisdictional Fisheries Act Grants

Interjurisdictional Fisheries Act Grants provide 1:1 matching funds to states and the three interstate marine fisheries commissions for fisheries data collection and research on commercial and recreational fish stocks.

10) Joint Enforcement Agreements

Joint Enforcement Agreements (JEA) provide funding to 28 state and U.S. territory law enforcement agencies (13 Atlantic coast states) to perform enforcement services in support of Federal regulations. JEAs are funded through NOAA's Office of Law Enforcement Cooperative Enforcement Program (CEP) via the Enforcement Line Item.

11) Fisheries Data Collections, Surveys and Assessments

a) Southeast Area Monitoring and Assessment Program

The Southeast Area Monitoring and Assessment Program (SEAMAP) is a cooperative program to facilitate the collection, management, and dissemination of fishery-independent data from the waters of the southeastern United States. SEAMAP has three components: Gulf of Mexico, South Atlantic (SEAMAP-SA), and Caribbean. SEAMAP-South Atlantic was implemented in 1983.

b) Fisheries Information Networks

Fisheries Information Networks, funded through the Fisheries Data Collections, Surveys, and Assessments Line Item, provide funding for state-federal cooperative programs to collect, manage and disseminate commercial fisheries data. On the Atlantic coast, Fisheries Information Network funding is used to support ASMFC's Atlantic Coast Cooperative Statistics Program (ACCSP). ACCSP is the primary source of dependable and timely marine fishery statistics for Atlantic coast fisheries.

12) Recreational Data Collection and Management

Recreational effort and catch are estimated by NOAA Fisheries' Marine Recreational Information Program (MRIP), composed of three primary surveys: Access Point Angler Intercept Survey (APAIS), Fishing Effort Survey (FES), and For-Hire Survey (FHS). On the Atlantic coast, APAIS has been conducted by the state agencies and ASMFC/ACCSP since 2016 – producing higher quality data and substantial cost savings. Several PPAs under NOAA Fisheries fund work important to sustainable and vibrant recreational fisheries: Fisheries Data Collections, Surveys, and Assessments; Fisheries and Ecosystem Science Programs and Services; and Fishery Information Networks (ACCSP). ASMFC requests adequate funding for NOAA Fisheries' activities related to recreational fishing data, analysis, and management.

Public Law 115–405 supports collaborative programs to improve recreational fishery data collection. Particularly to assist states establish, test, and implement more reliable recreational fishery data collection tools, such as smartphone applications or text messaging supplements. ASMFC continues to support implementation of the statute.

Atlantic States Marine Fisheries Commission

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Overview of Atlantic Coast State Spanish Mackerel Fisheries

Prepared by the Spanish Mackerel Technical Committee
April 2024

Background

In August 2023, the Atlantic States Marine Fisheries Commission's (Commission) Coastal Pelagics Management Board (Board) passed the following motion:

> *Move to direct the Spanish Mackerel Technical Committee to develop a paper that characterizes the recreational and commercial Spanish mackerel fisheries along the Atlantic Coast. The timing and content of the paper are intended to help the Coastal Pelagics Management Board address state waters management issues.*

This task emerged from Board discussion about the need to better understand each state's Spanish mackerel fisheries in anticipation of future Board action to address state and federal management differences, as well as recognition of emerging Spanish mackerel fisheries at the northern end of the species' range.

All states from Rhode Island through the east coast of Florida, except for Connecticut and Pennsylvania, have a declared interest in the Commission's Interstate Fishery Management Plan for Spanish Mackerel. Commercial and recreational Spanish mackerel fisheries are managed through size limits, gear restrictions, daily trip limits for the commercial fishery, and daily bag limits for the recreational fishery. State regulations are summarized in Table 1.

The Atlantic coast stock of Spanish mackerel is managed cooperatively between the Commission in state waters and the South Atlantic Fishery Management Council and NOAA Fisheries in federal waters. Differences between the Interstate and Federal Fishery Management Plans exist in terms of commercial management zones, commercial trip limits and closures, allowable gears, recreational season, and recreational accountability measures. A memorandum outlining those differences is available here.

In October 2023, each state completed a fishery profile questionnaire to provide details on its commercial and recreational fisheries to inform this paper. The Appendix includes each state's fishery profile.

The Spanish Mackerel Technical Committee used the fishery profiles to develop this paper summarizing key details about the commercial and recreational fisheries. State-specific details are available in the fishery profiles themselves.

Biology and Seasonal Fish Availability

Spanish mackerel (*Scomberomorus maculatus*) are fast swimming fish known to gather in large schools and travel great distances. Spanish mackerel grow quickly, with females growing larger than males, and mature by age 1 to 2. Spanish mackerel prey primarily on small fishes, including herring, menhaden, and mullet, as well as shrimp, crabs, and squid to a lesser degree. The Atlantic coast stock of Spanish mackerel (distinct from the Gulf of Mexico stock) spend the winter off the east coast of Florida, then move northward to North Carolina in early April and further north in June. As waters cool later in the year, Spanish mackerel return to the east coast of Florida.

Availability of Spanish mackerel to state fisheries is driven by water temperatures and this seasonal migration. As such, peak harvest across both sectors aligns with this migratory pattern. The majority of Florida's harvest occurs from late fall through early spring when the fish are wintering off the Florida coast. The majority of harvest from Georgia to Virginia occurs from early summer when the fish move northward, through early fall as the fish move back down the coast. The majority of harvest from Maryland northward occurs from late summer when the fish reach the northern end of their migration, through early fall. Figure 1 illustrates the seasonal harvest pattern showing average monthly commercial harvest from 2018-2022 for Florida and North Carolina, the states comprising a majority of coastwide commercial harvest. Florida's commercial harvest peaks from November through March while the fish are wintering off the Florida coast, which is opposite of North Carolina's peak commercial harvest from May through October when the fish are moving northward in the spring (May peak) and back southward in the fall (second peak in September). Figures 2-3 also illustrate the seasonal harvest pattern showing recreational harvest by each two-month wave throughout the year. Again, Florida's recreational harvest peaks in January-February and November-December. South Carolina and North Carolina's recreational harvest peaks in May-June and in September-October. Recreational harvest from Virginia northward peaks in July-August.

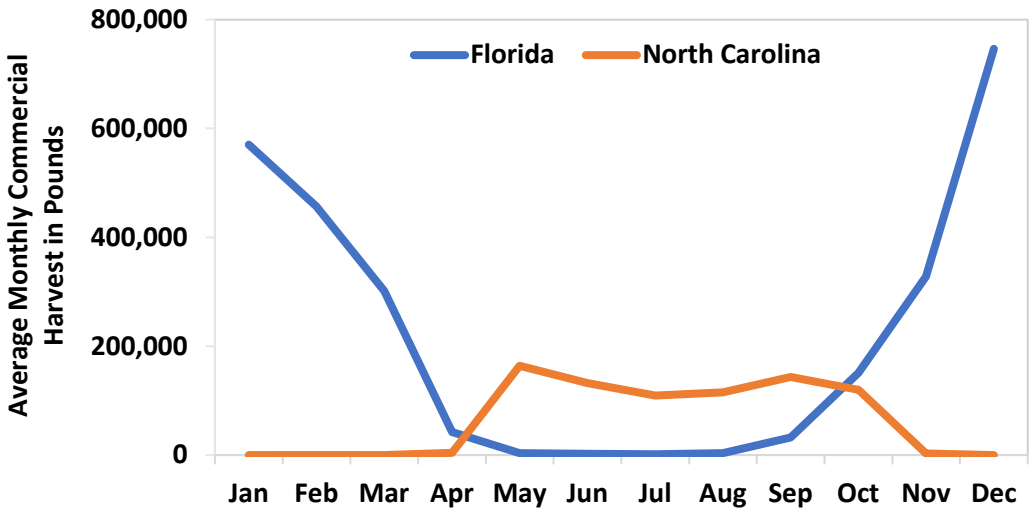

Figure 1. Average monthly commercial Spanish mackerel harvest for 2013-2022 for North Carolina and Florida. Source: State Fishery Profiles.

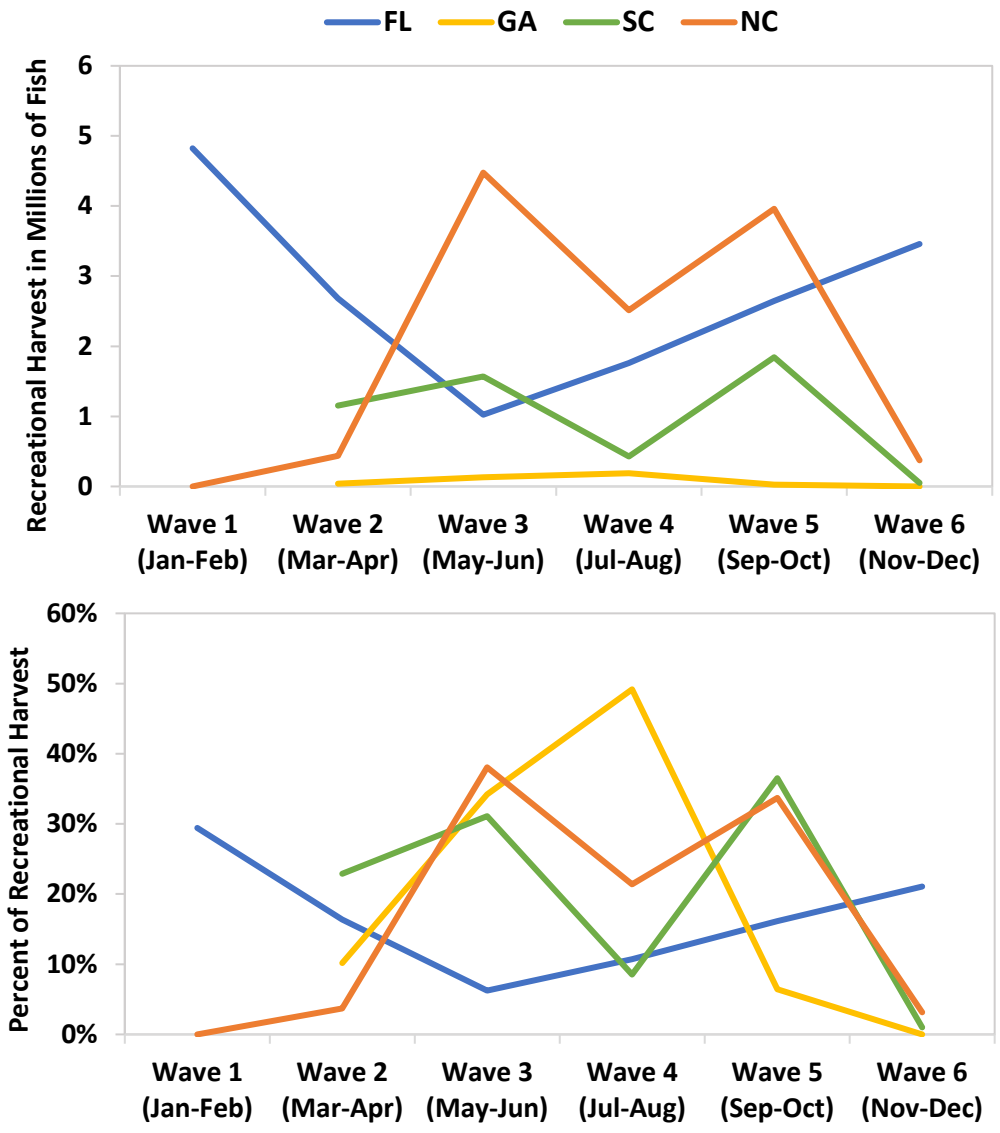

Figure 2. Recreational harvest of Spanish mackerel in numbers (top) and percent of recreational harvest in numbers (bottom) per two-month wave from 2018-2022 for Florida through North Carolina. MRIP sampling during Wave 1 only occurs in Florida and North Carolina. Source: MRIP.

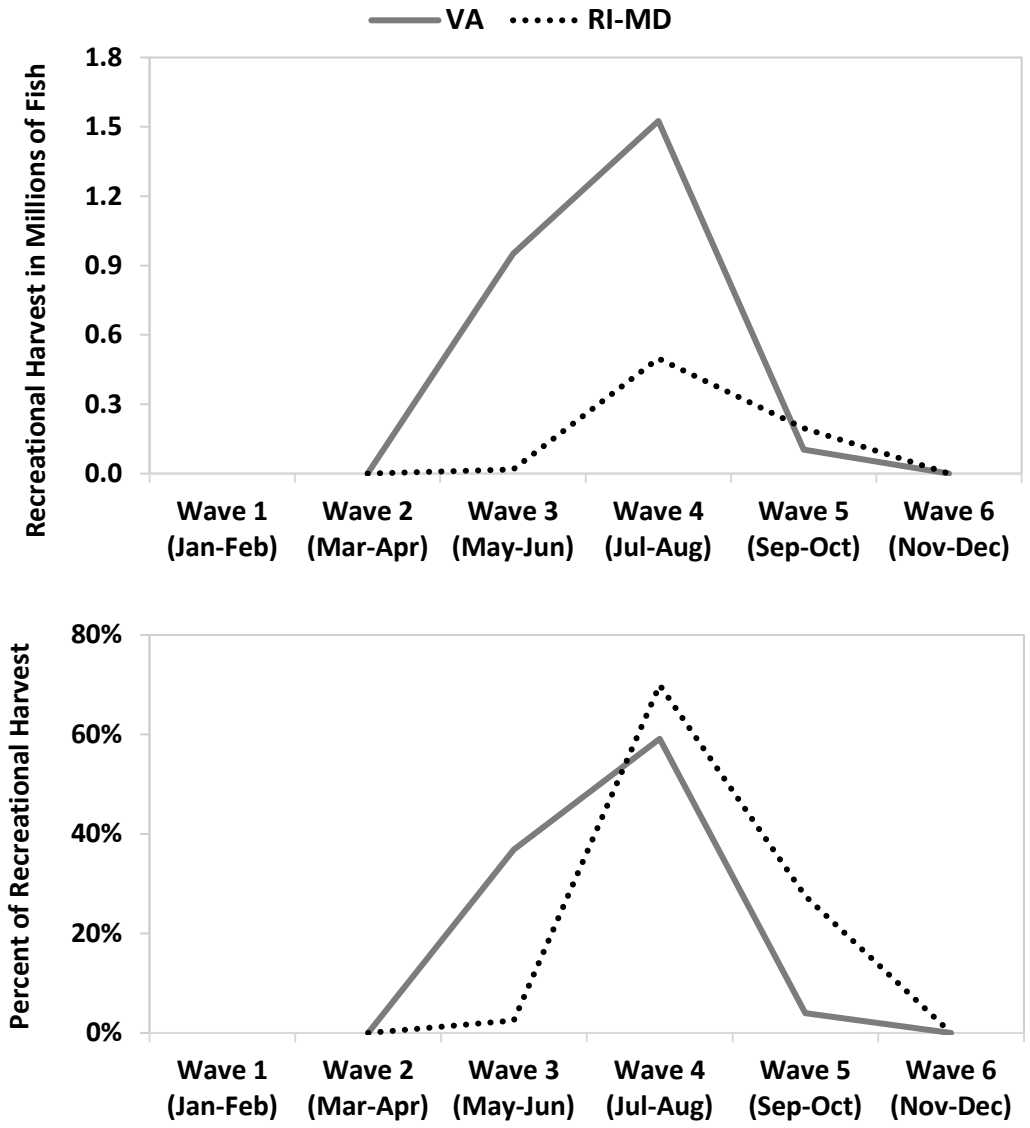

Figure 3. Recreational harvest of Spanish mackerel in numbers (top) and percent of recreational harvest in numbers (bottom) per two-month wave from 2018-2022 for Virginia through Rhode Island. MRIP sampling during Wave 1 does not occur in these states. Source: MRIP.

Total Landings Overview

Since 1981, total combined landings from the commercial and recreational sectors has typically been between about 6 million and 8 million pounds each year, with a time series average of 7.3 million pounds (Figure 4). Only five years in the time series exceeded 10 million pounds, and only five years in the time series dipped below 5 million pounds. Recreational landings, in particular, have fluctuated over time, which has changed each sector's proportion of total landings from year to year.

Over the last ten years, the recreational fishery has accounted for the majority of Spanish mackerel landings in all states except Florida, where the commercial fishery accounted for about 54% over that time period (Figure 5).

While MRIP estimates of recreational landings in pounds are shown in this section for comparison to commercial landings, the Technical Committee notes additional uncertainty associated with MRIP weight estimates due to imputation of missing weight values. As such, the subsequent sections only use MRIP estimates in numbers of fish.

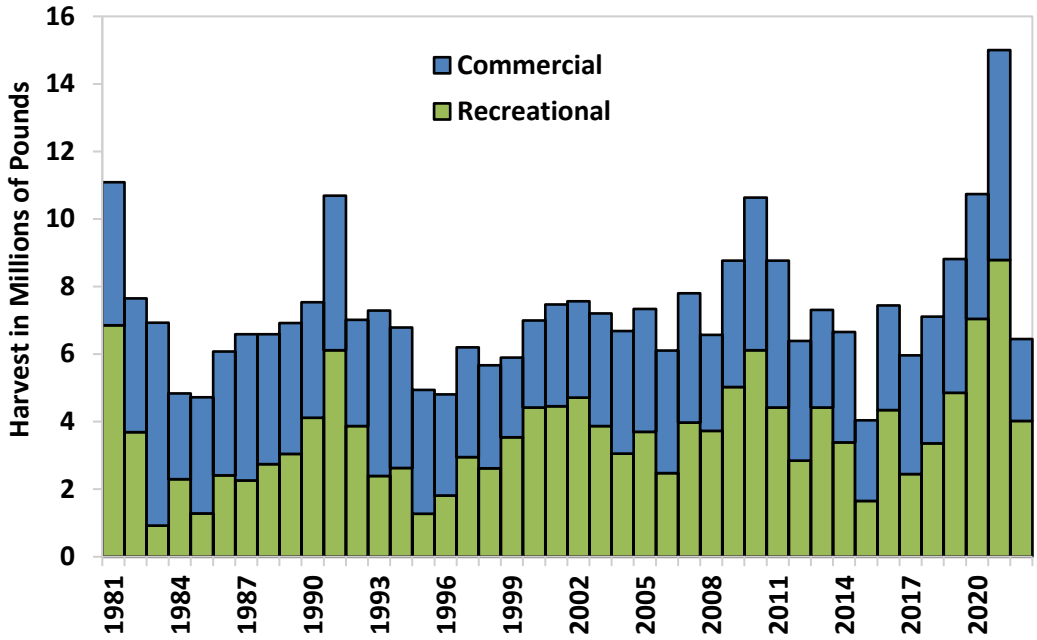

Figure 4. Coastwide commercial and recreational harvest in pounds of Spanish mackerel from 1981-2022. Source: State Fishery Profiles, ACCSP, MRIP.

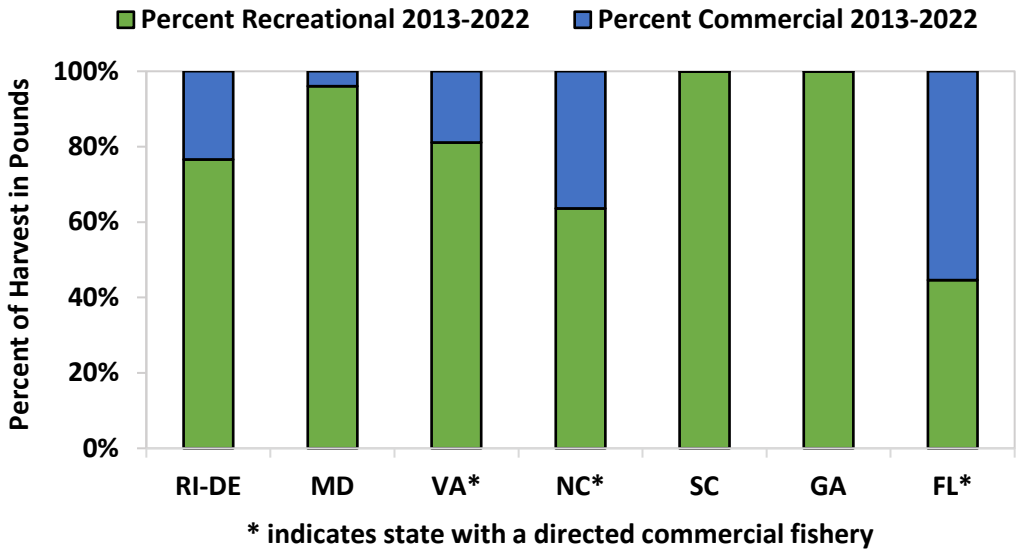

Figure 5. Sector proportion of Spanish mackerel harvest in pounds by state from 2013-2022. Source: State Fishery Profiles, ACCSP, MRIP.

Commercial Fisheries

Only three states, Florida, North Carolina, and Virginia, have targeted, directed commercial fisheries for Spanish mackerel. Over the last ten years, Florida accounted for 75% of coastwide commercial landings, North Carolina for 22%, and Virginia for 2%. The remaining states combined accounted for less than 1% of coastwide commercial landings for that time (Figure 6).

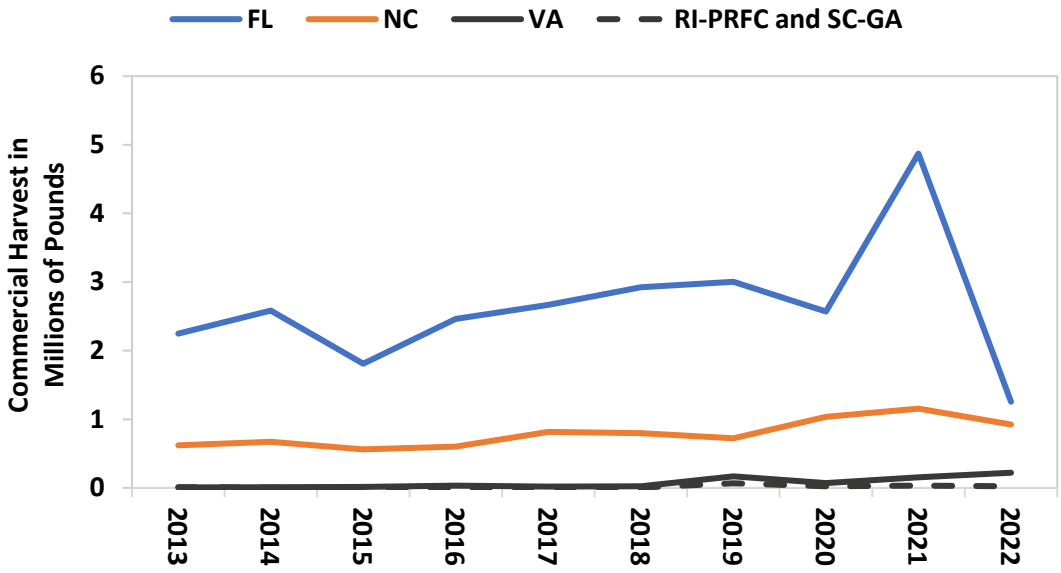

Figure 6. Spanish mackerel commercial harvest in pounds from 2013-2022 noting each state or region's proportion of the total commercial harvest for 2013-2022. Source: State Fishery Profiles, ACCSP.

Florida had 436 participants in its commercial fishery in 2022. Over the past five years, the average pounds landed per trip in Florida ranged from a low of 299 pounds per trip in 2022 to a high of 603 pounds per trip in 2021. The average pounds landed per trip in Florida is considerably lower from April through September (<50 pounds per trip on average) compared to October through March (>500 lbs./trip on average).

In North Carolina, the average number of participants in the commercial fishery over the past ten years was 374 (range of 305 to 474 participants). Over the past ten years, the average pounds landed per trip in North Carolina was 221 pounds per trip. The peak landings per trip is from May through September (about 200-250 pounds per trip on average), while landings are low the rest of the year (<50 pounds per trip on average).

In Virginia, the number of participants in the commercial fishery over the past ten years has ranged from 50-100 participants per year. Over the past ten years, the average pounds landed per trip in Virginia has ranged from 31 to 200 pounds per trip, with higher landings per trip during the summer and early fall months.

Georgia, South Carolina, the Potomac River Fisheries Commission, Maryland, Delaware, New Jersey, New York, and Rhode Island have none, or very limited, directed commercial fisheries for Spanish mackerel. These fisheries are primarily opportunistic bycatch fisheries characterized by variable landings from year to year, average landings of less than 100 pounds per trip, and few participants. When Spanish mackerel are landed as bycatch, harvesters from Maryland northward are targeting species such as bluefish, smooth dogfish, striped bass, Atlantic, menhaden, Atlantic croaker, and spot. In South Carolina, Spanish mackerel, along with king mackerel and whiting (kingfish), are landed as bycatch in the penaeid shrimp fishery. Spanish mackerel also sporadically appear as apparent bycatch in South Carolina's snapper-grouper fishery.

The vast majority of commercial fisheries occur in state waters, with most states indicating over 80% of their commercial landings are from state waters. All three states with directed commercial fisheries note over 90% of their landings are from state waters in recent years.

There are a variety of gear types used to harvest Spanish mackerel commercially. From North Carolina northward, gill nets and pound nets are the most common gears. In South Carolina, trawl is the predominant commercial gear. In Florida, hook and line and cast net are most common.

For states at the northern end of the species range, commercial landings from 2019-2022 are generally higher than they were from 2013-2018 (Figure 7). However, landings are variable from year to year and vary among states. There was a significant spike in landings in 2019 in Virginia, the Potomac River, and Maryland, and Virginia's landings peaked again in 2022.

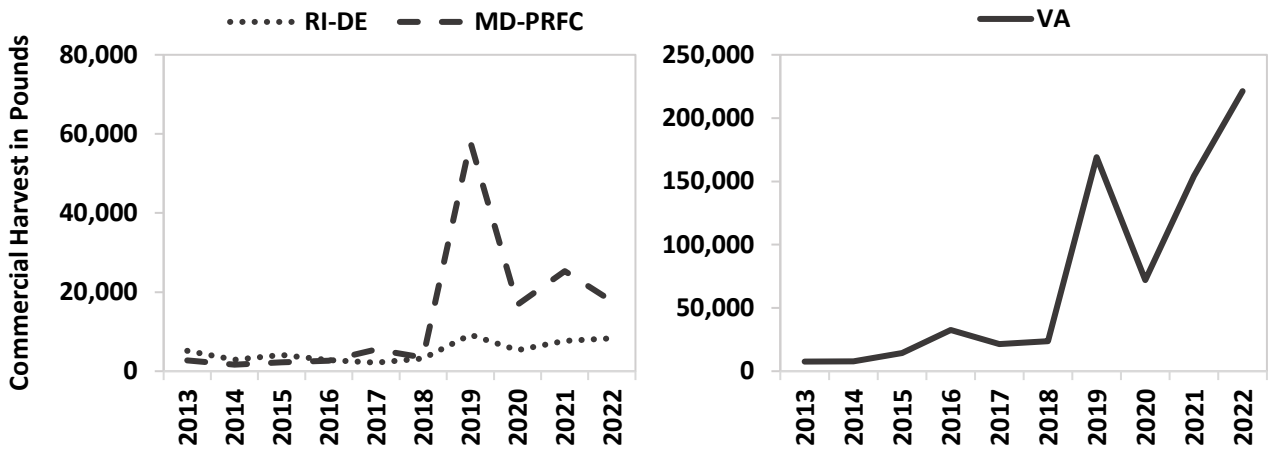

Figure 7. Spanish mackerel commercial harvest in pounds from 2013-2022 for Rhode Island through the Potomac River Fisheries Commission (left) and Virginia (right). Note the different axis scale for each figure. Source: State Fishery Profiles, ACCSP.

Other Interesting Points from Commercial Profiles

The Technical Committee noted the following points of interest from the state commercial fishery profiles.

In Virginia, starting in the 2022 fishing year, four experimental gear permits were distributed to commercial harvesters allowing them to fish up to 6,000 feet of continuous drift gillnet to determine whether this longer single net is more effective at catching Spanish mackerel than several separate shorter gillnets. One additional permit was added in 2023. A stipulation with this experimental gear permit is allowing Virginia Marine Resources Commission observer staff on the boat to note bycatch and evaluate the effectiveness of the new gear. For the 2024 fishing year the number of experimental permits will be increased to approximately 20 commercial harvesters.

South Carolina noted the number of commercial participants has declined over time to usually just one harvester in recent years.

The Florida commercial fishery has three components. Cast netters harvest smaller Spanish mackerel from December through January. Hook-and-line food fishermen harvest larger fish year-round, with increased activity after cast netting ends. Hook-and-line bait fishermen harvest smaller fish with increased activity in March.

Recreational Fisheries

Recreational hook-and-line fisheries for Spanish mackerel occur in all states, although South Carolina and some states at the northern end of the species range note the recreational fishery is opportunistic and not necessarily targeted. These opportunistic fisheries are characterized by variable landings year to year.

Over the past ten years, Florida accounted for 44% of the coastwide recreational harvest in numbers of fish, North Carolina for 32%, South Carolina for 14%, Virginia for 7%, Georgia for 1%, and Maryland through Rhode Island for 2% (Figure 8). This time period includes a large increase in Florida's recreational harvest in 2020 and 2021, to a time series high, followed by a sharp decrease in 2022.

Similar to trends in commercial harvest at the northern end of the species range, recreational harvest from Virginia northward are generally higher from 2019-2022 than they were from 2013-2018 (Figure 9). This trend is also apparent in the recreational harvest data for North Carolina, South Carolina, and Georgia, which saw a peak in 2019 and landings above pre-2019 levels in most subsequent years, including a time series high in 2022 for North Carolina and South Carolina (Figure 8; Table 3).

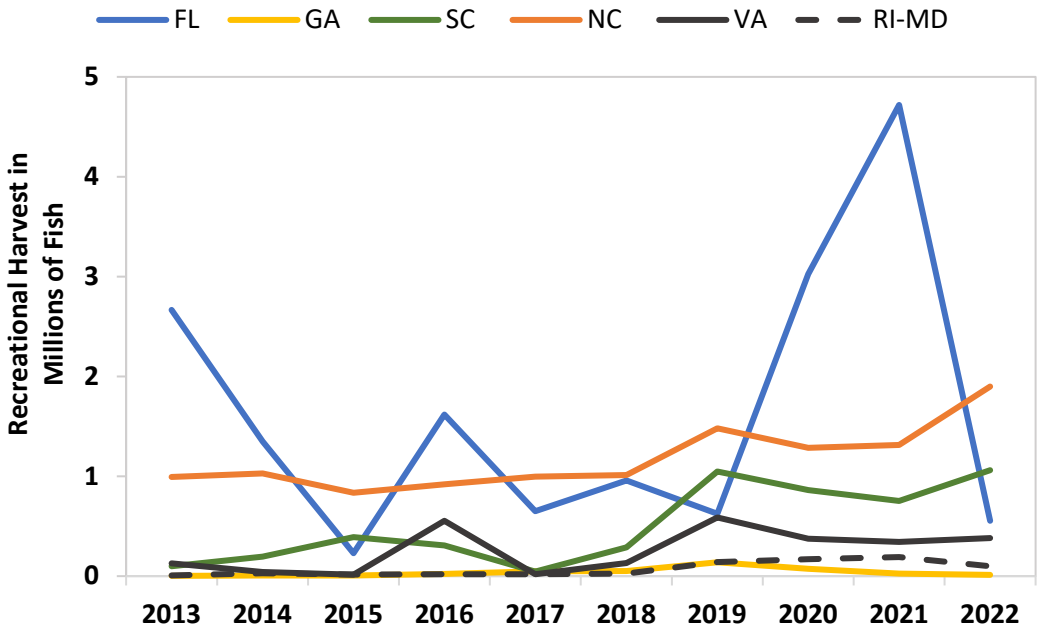

Figure 8. Spanish mackerel recreational harvest by state in numbers of fish from 2013-2022 noting each state or region's proportion of the total recreational harvest for 2013-2022. Source: MRIP.

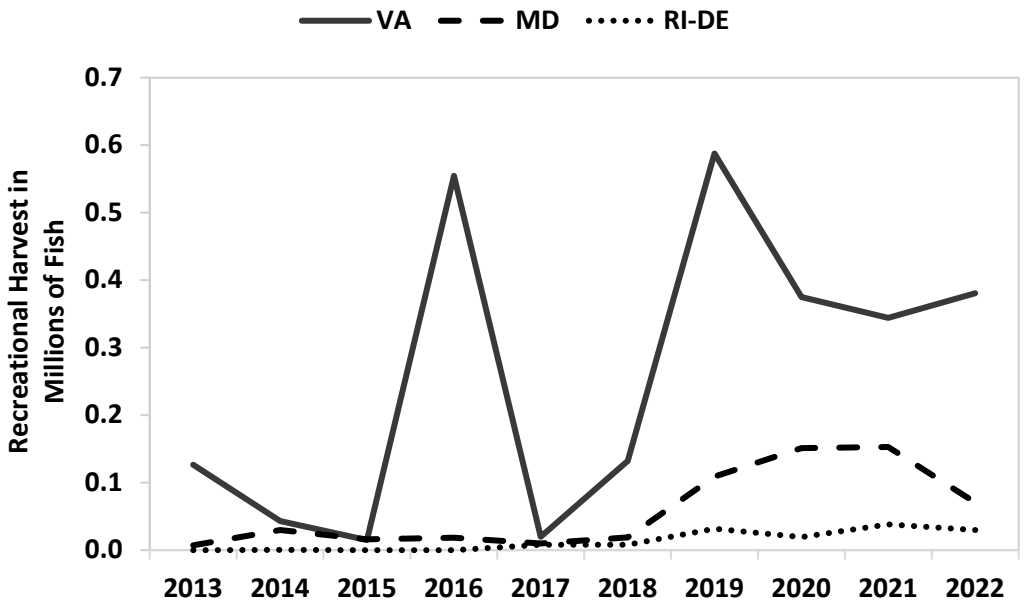

Figure 9. Spanish mackerel recreational harvest in numbers of fish for Virginia, Maryland, and Rhode Island through Delaware from 2013-2022. Source: MRIP.

Recreational harvest estimates from the Marine Recreational Information Program (MRIP) are associated with high PSEs (>50) for some states, particularly for states at the northern end of the species range and for Georgia in some years (Table 3).

Directed trips coastwide with Spanish mackerel as the primary or secondary target increased steadily from 1.9 million trips in 2018 to 3.5 million trips in 2021 (Table 4). Directed trips coastwide decreased to 2.9 million in 2022, but that level is still higher than the 2018-2020 coastwide levels. Trends vary by state, and directed trips is only one dataset used to describe effort in the Spanish mackerel recreational fishery. For example, Florida will use directed effort but will also use different hierarchical clustering techniques to examine effort. This technique will include any trip that any species within the same cluster as the species of interest to try and include those trips that did not catch the target species, but theoretically could have due to the other species caught.

Although not reflected in every state's harvest estimates, the Technical Committee noted an increase in effort in several states in 2020-2021 that may be associated with COVID-19. It is important to note that COVID-19 may have impacted recreational modes differently. For-hire trips may have been limited due to restrictions on the number of people permitted on vessels; however, shore and private effort may have increased. Another factor potentially affecting Spanish mackerel fishing effort is management and availability of other species. The Technical Committee noted the potential for regulatory restrictions on other species to redirect angler effort to Spanish mackerel when they are available.

By recreational mode, private/rental vessels and shore anglers (private-shore) account for the majority of recreational harvest, while charter and head boats (for-hire) represent a small percentage of harvest (Table 5). In most states, private-shore comprised over 90% of recreational harvest over the past ten years. In states north of Virginia, private-shore comprised about 81% of recreational harvest over the same time period.

With the exception of a few states, the vast majority of recreational fisheries occur in state waters. The exceptions are as follows. New Jersey notes 55% of recreational landings have been from state waters. Delaware notes the majority of landings are from federal waters. South Carolina notes that MRIP data indicate 97% of catch comes from state waters and 3% from the EEZ outside state waters; however, South Carolina charter logbook data suggests 60% of trips are in federal waters. South Carolina notes this difference may reflect a difference in the approach/focus (e.g., fishing locale) of charter captains and their clients, as compared to the individuals represented by the MRIP data.

MRIP FES Estimates

In August 2023, NOAA Fisheries released findings of a pilot study it conducted to evaluate potential sources of bias in the recreational Fishing Effort Survey (FES) questionnaire design. This study found switching the sequence of questions in the survey resulted in fewer reporting errors and fishing effort estimates that were generally 30% to 40% lower for shore and private boat modes than estimates produced from the current design. However, results varied by state and fishing mode. These results are based on a pilot study that had a limited time frame (six months) and geographic scope (only four states included), and additional extensive work needs to be done to determine the true impacts of the survey design. NOAA Fisheries will be conducting a larger-scale follow-up study over the course of the next few years. At this time, the potential impacts to Spanish mackerel recreational catch estimates are unknown, but given the large recreational sector component in many states, this is something that should be examined further in future assessments.

Other Interesting Points from Recreational Profiles

The Technical Committee noted the following points of interest from the state recreational fishery profiles:

- Virginia noted many anglers harvest their daily limit when possible, and typically only release fish when they are under the minimum size limit.
- North Carolina noted Spanish mackerel appear to be showing up earlier and staying later in North Carolina waters in recent years.
- South Carolina noted the continued ability to retain Spanish mackerel for use as bait may be of interest to participants in Highly Migratory fisheries, as many favor them as bait and are known to preserve them for future use.
- Georgia noted that even though Spanish mackerel are a desired target species by Georgia anglers, they are not consistently encountered through fishery-dependent data collection.

Additional Characteristics of the Florida Fisheries

The Technical Committee noted the following additional points from Florida's fishery profile. Florida's commercial and recreational Spanish mackerel fisheries have typically contributed a large proportion of coastwide landings, but there has been a recent decline in 2022.

One factor contributing to the reduction in Florida landings and effort is the increase in areas off central east Florida that are closed to vessels by the U.S. Coast Guard to create safety zones associated with space launches. This has prevented fishermen from accessing areas where they would traditionally fish for Spanish mackerel.

Florida noted that Spanish mackerel will concentrate in easily accessible, inshore areas during the winter. Because of this, commercial and recreational fisheries operate simultaneously in the same area and this has resulted in conflicts between the two sectors.

Tables

Table 1. Summary of state regulations for Spanish mackerel in 2022.
Notes: A commercial license is required to sell Spanish mackerel in all states; other general gear restrictions apply to the harvest of Spanish mackerel. Purse seines, and drift gill nets south of Cape Lookout, NC are prohibited.

State	Recreational	Commercial
RI	14" TL, 15 fish	14" TL. 3,500 lb. trip limit.
NY	14" TL, 15 fish	14" TL. 3,500 lb. trip limit.
NJ	14" TL, 10 fish	14" TL. 3,500 lb. trip limit.
DE	14" TL, 15 fish	14" TL. 3,500 lb. trip limit.
MD	14" TL, 15 fish	14" TL. 3,500 lb. trip limit. Public notice 7/9/2022: 500-lb trip limit when harvest in federal waters closed.
PRFC	14" TL, 15 fish	14" TL. Closure if/when both MD and VA fisheries close.
VA	14" TL, 15 fish	12” or 14" TL. 3,500 lb. trip limit. 500 lb. trip limit if/when harvest in federal waters closed.
NC	12" FL, 15 fish	12" FL; 3,500 lb. trip limit for combined Spanish and king mackerel landings. Proclamation 6/21/2022: 500-lb trip limit when harvest in federal waters closed.
SC	12" FL, 15 fish	12" FL. 3500 lbs. until 75% of adjusted Atlantic Southern Zone quota taken, then 1500 lbs. until 100% of adjusted quota is taken, then 500 lbs. until the end of year or commercial quota is met. If quota is met, then commercial sector is closed to harvest. Requires open access permit for Spanish mackerel.
GA	12" FL, 15 fish	12" FL. 3500 lbs. until 75% of adjusted Atlantic Southern Zone quota taken, then 1500 lbs. until 100% of adjusted quota is taken, then 500 lbs. until the end of year or commercial quota is met. If quota is met, then commercial sector is closed to harvest.
FL	12" FL, 15 fish. Cast nets less than 14’ and beach or haul seines with no larger than 2” stretched mesh allowed	12" FL or 14” TL. Trip limits: March 1 until Nov. 30 – 3500 lb.; Dec. 1 until 75% of adjusted quota reached – 3500 lb. Monday – Friday & 1500 lb. Saturday – Sunday; >75% adjusted quota until quota filled – 1500 lb.; > 100% of adjusted quota – 500 lb. Restricted Species Endorsement Required Allowed gear: beach or haul seine, cast net, hook and line, or spearing.

Table 2. Commercial landings (pounds, calendar year) of Spanish mackerel by state, 2013-2022. (Source: State Fishery Profiles, ACCSP). Confidential values are shown as "C". Coastwide totals adhere to the ACCSP rule of 3, i.e., totals are reflective of the true total if 0 or at least 3 states' data are confidential in a given year. Otherwise, they are sums of non-confidential data.

Year	Other*	RI	NY	NJ	DE	MD	PRFC
2013	C	C	4,467	265		2,397	302
2014	C	43	2,550	292		1,644	12
2015		C	1,357	2,746		2,219	6
2016		C	813	1,997	C	2,105	548
2017	C	652	1,053	462		796	4,704
2018	C	951	1,285	950		3,071	420
2019	C	1,484	5,708	2,010	C	12,571	45,385
2020	C	602	3,033	C	C	6,720	10,092
2021	C	284	5,826	C	C	5,192	20,076
2022	C	C	6,271	1,903		6,367	11,356

Year	VA	NC	SC	GA	FL	Total
2013	7,602	620,752			2,246,553	2,882,338
2014	7,859	673,974	C		2,585,199	3,271,572
2015	14,472	561,407	C		1,807,948	2,390,155
2016	32,577	601,623	C		2,461,334	3,101,172
2017	21,483	816,017	C		2,665,560	3,510,727
2018	23,609	796,855	C		2,926,140	3,753,282
2019	169,152	722,396	C	C	3,004,860	3,963,759
2020	71,953	1,033,526	C	C	2,571,019	3,698,783
2021	143,376	1,155,289	C		4,871,825	6,214,359
2022	221,269	926,026	C	C	1,256,115	2,429,443

*Other: states that do not have a declared interest in Spanish mackerel and do not sit on the Coastal Pelagics Board (MA, CT)

Table 3. Recreational harvest (numbers, calendar year) of Spanish mackerel by state, 2013-2022 with indication of Percent Standard Error (PSE): red is >50, yellow is 30-50, white is <30. (Source: MRIP)

Year	Other*	RI	NY	NJ	DE	MD	VA
2013					41	7,187	126,656
2014	455					29,713	42,937
2015						15,837	14,950
2016					9	18,559	554,813
2017				8,107	28	9,687	20,000
2018	316			6,753	797	19,146	132,390
2019	335		21,031	8,787	1,396	109,007	587,683
2020	6,254	3,016	6,096	3,985	92	151,412	374,892
2021	622		3,143	34,323	129	152,829	344,235
2022		414	1,435	11,865	16,213	70,582	380,446

Year	NC	SC	GA	FL	Coastwide Total (number of fish)
2013	994,599	100,512	2,701	2,665,958	**3,897,654**
2014	1,028,925	194,367	5,365	1,348,735	**2,650,952**
2015	835,011	389,923	6,201	229,669	**1,491,591**
2016	918,352	306,235	22,637	1,618,529	**3,439,134**
2017	995,706	45,644	48,633	650,916	**1,778,721**
2018	1,012,889	289,250	49,764	956,741	**2,468,362**
2019	1,478,890	1,046,972	138,756	623,415	**4,016,272**
2020	1,286,131	861,349	72,308	3,025,466	**5,791,001**
2021	1,312,929	752,570	24,666	4,718,809	**7,344,255**
2022	1,898,755	1,060,999	12,583	555,443	**4,008,735**

*Other: states that do not have a declared interest in Spanish mackerel and do not sit on the Coastal Pelagics Board (MA, CT)

Table 4. Atlantic coast directed trips with Spanish mackerel as the primary or secondary target by state for 2018-2022. (Source: MRIP)

Year	Other*	RI	NY	NJ	DE	MD	VA
2018					949	27,777	73,974
2019	600		5,145	60,075	1,807	74,659	237,432
2020	27,911		103,673	176,600	2,924	112,339	205,235
2021				50,756	418	67,116	205,791
2022	5,227	118	10,564	22,761	4,053	77,358	273,181

Year	NC	SC	GA	FL	Coastwide Total Directed Trips
2018	773,434	348,349	29,865	660,061	**1,914,409**
2019	983,779	494,920	15,722	526,333	**2,400,472**
2020	847,055	282,677	49,526	1,013,440	**2,821,380**
2021	1,052,516	411,898	37,417	1,686,163	**3,512,075**
2022	1,248,801	634,186	20,181	657,394	**2,953,822**

*Other: states that do not have a declared interest in Spanish mackerel and do not sit on the Coastal Pelagics Board (CT)

Table 5. Percent of recreational harvest in numbers of fish by mode and by state for 2013-2022. (Source: MRIP)

State/Region	Private-Shore Percent of Recreational Harvest	For-Hire Percent of Recreational Harvest
RI – MD	81%	19%
VA	94%	6%
NC	92%	8%
SC	96%	4%
GA	95%	5%
FL	>99%	<1%

Appendix

Individual fishery profiles submitted by each state are enclosed in the following pages. Some states submitted separate data files, which are not included here.

State of Rhode Island Atlantic States Marine Fisheries Commission Compliance Report

Spanish Mackerel – *Scomberomorus maculatus*

Due Date: October 1

Compiled By:
JA Macfarlan, PhD

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Rhode Island Department of Environmental Management
Division of Marine Fisheries
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2023 ASMFC Fishery Profile Questionnaire for Spanish Mackerel

Rhode Island

COMMERCIAL SPANISH MACKEREL FISHERY- CONFIDENTIAL

How long has the commercial Spanish mackerel fishery been active (e.g., 1970s)?

RI does not have a directed Spanish Mackerel fishery, these landings are highly variable through time and although they show a seasonal tendencies their presence in RI waters is less predictable than other more common species such Chub Mackerel.

How much of the commercial fishery operates in state waters vs. federal waters?
Not known at this time, a mix of state and federal.

Approximately how many participants in the commercial fishery?
Less than 6.

What gears are used in the commercial fishery? Which are the primary gears?

Gillnets and floating fish traps.

How do commercial landings vary throughout the year? Is there a season or time of year when most landings occur (e.g., due to quota closures, fish availability)?

Landings begin in July, and then peak in the late summer and early Fall, around September, and then there are sporadic landings in October and occasionally early November.

What is the average number of pounds landed per trip? Does this vary throughout the year?
15

What other commercial species are commonly targeted/landed with Spanish mackerel?
NA

Is port sampling or commercial fishery-dependent monitoring conducted? If so, please provide a brief summary of what commercial data are collected (e.g., length, effort) and note general observed trends over the past ten years.
No not for Spanish Mackerel.

Are there specific factors you would like to highlight that impact operation of the commercial fishery?
No

RECREATIONAL SPANISH MACKEREL FISHERY

How long has the recreational Spanish mackerel fishery been active (e.g., 1970s)?
As mentioned above there is no real directed commercial or recreational fishery.

How much of the recreational fishery operates in state waters vs. federal waters?
Unknown

What gears are used in the recreational fishery?
Spinning gear. Relatively light spin-casting rods are typical with soft or hard plastic lures and spoons/jigs for terminal tackle.

How do recreational landings vary throughout the year? Is there a season or time of year when most landings occur (e.g., due to fish availability)?
Most recreational landings are in September.

What other recreational species are commonly targeted/landed with Spanish mackerel?
The target species are not Spanish Mackerel but are caught while fishing for bluefish, false albacore, other scombrids, bonito and striped bass.

Is port sampling or recreational fishery-dependent monitoring conducted? If so, please provide a brief summary of what recreational data are collected (e.g., length, effort) and note general observed trends over the past ten years.
Yes, but not targeting Spanish Mackerel in particular. MRIP data are collected via creel counts/intercepts, for length and weights at boat ramps and fishing access points within the state.

Are there specific factors you would like to highlight that impact the recreational fishery?
NA

Are there notable Spanish mackerel tournaments, events, etc. you would like to highlight?
No

GENERAL

When during the year are Spanish mackerel available in your state waters?
Late summer

Is there anything else Board members should know about your state's commercial and recreational Spanish mackerel fisheries?
NA

2023 ASMFC Fishery Profile Questionnaire for Spanish Mackerel

New York

COMMERCIAL SPANISH MACKEREL FISHERY

How long has the commercial Spanish mackerel fishery been active (e.g., 1970s)?

New York does not have a directed Spanish mackerel fishery. Spanish mackerel are incidentally caught by commercial fisherman while targeting other species. Records show the first recorded Spanish mackerel landed commercially occurred in 1975.

How much of the commercial fishery operates in state waters vs. federal waters?

From 2018 through 2022, 86% of commercial harvest took place in state waters and 14% in federal waters.

Approximately how many participants in the commercial fishery?

From 2018 through 2022 there has been an average of 29 participants in the commercial fishery.

What gears are used in the commercial fishery? Which are the primary gears?

Fixed nets, gill nets, hand line, trawls, and pots and traps are used in the commercial fishery. The two primary gears used in order of most frequent are gill nets and fixed nets.

How do commercial landings vary throughout the year? Is there a season or time of year when most landings occur (e.g., due to quota closures, fish availability)?

Spanish mackerel start to be reported in the month of June and typically the last reports are in October. The months of August and September have the highest percent landings.

What is the average number of pounds landed per trip? Does this vary throughout the year?

From 2018 through 2022 the average number of pounds landed was 25.8 per trip. The highest landings per trip occurred in the months of August and September.

What other commercial species are commonly targeted/landed with Spanish mackerel?

From 2018 through 2022 species caught with Spanish mackerel have been Atlantic menhaden, bluefish, hickory shad, long-fin squid, scup, smooth dogfish, striped bass, summer flounder, and weakfish. Bluefish had been the highest species caught by weight for 4 of the 5 years.

Is port sampling or commercial fishery-dependent monitoring conducted? If so, please provide a brief summary of what commercial data are collected (e.g., length, effort) and note general observed trends over the past ten years.

No.

Are there specific factors you would like to highlight that impact operation of the commercial fishery?

No.

RECREATIONAL SPANISH MACKEREL FISHERY

How long has the recreational Spanish mackerel fishery been active (e.g., 1970s)?

The first recorded Spanish mackerel landed recreationally occurred in 1987.

How much of the recreational fishery operates in state waters vs. federal waters?

From 2018 through 2022, 93% of Spanish mackerel were caught in state waters and 7% in federal waters.

What gears are used in the recreational fishery?

Rod and reel

How do recreational landings vary throughout the year? Is there a season or time of year when most landings occur (e.g., due to fish availability)?

Recreational anglers reported catching Spanish mackerel in the months of July through September when waters are typically the warmest. During the other months of the year the water temperature falls below the Spanish mackerels preferred temperature range of 21 – 27 °C.

What other recreational species are commonly targeted/landed with Spanish mackerel?

Bluefish, false albacore, green bonito, and striped bass.

Is port sampling or recreational fishery-dependent monitoring conducted? If so, please provide a brief summary of what recreational data are collected (e.g., length, effort) and note general observed trends over the past ten years.

Yes, there is a recreational sampling program via APAIS that does dock interviews. They collect length, weight, area, mode of catch (inshore/offshore, via pier/boat, number of anglers, time spent fishing). Most of the sampling for Spanish mackerel happens on the south shore of Long Island. As per NY's APAIS head, intercepts picking up Spanish mackerel

have increased in the past number of years. They weren't a common occurrence every year in the 2010s, but now every year they're encountering some.

Are there specific factors you would like to highlight that impact the recreational fishery?

No.

Are there notable Spanish mackerel tournaments, events, etc. you would like to highlight?

No.

GENERAL

When during the year are Spanish mackerel available in your state waters?

July through September with highest occurrences in the months of August and September.

Is there anything else Board members should know about your state's commercial and recreational Spanish mackerel fisheries?

Yes. The PSE's for recreational harvest are all over 50 which indicates a highly imprecise estimate. The Board should be cautious when using these harvest numbers for management in NY waters.

2023 ASMFC Fishery Profile Questionnaire for Spanish Mackerel

NEW JERSEY

COMMERCIAL SPANISH MACKEREL FISHERY

How long has the commercial Spanish mackerel fishery been active (e.g., 1970s)?

New Jersey has no historical or current directed fishery but has had an opportunistic bycatch fishery since the 1950s.

How much of the commercial fishery operates in state waters vs. federal waters?

From 1953 – 2022 the number of reported commercial landings was nearly identical in state waters vs. federal waters, with more poundage coming from state waters.

NJ Waters – 280 commercial trips with Spanish mackerel reported – 216,922 lbs. landed.
Federal Waters – 282 commercial trips with Spanish mackerel reported – 71,614 lbs. landed.

Approximately how many participants in the commercial fishery?

Variable from year to year and is not typically a targeted species, with zero participating in a directed fishery.

An average of 10 fisherman have reported Spanish mackerel landings (bycatch) annually from 2006 -2022.

What gears are used in the commercial fishery? Which are the primary gears?

Bycatch landings are reported in dredges, gillnets, trawls, purse seines, long lines, and fixed nets. The primary gears are gill nets and otter trawls.

How do commercial landings vary throughout the year? Is there a season or time of year when most landings occur (e.g., due to quota closures, fish availability)?

The landings are consistent from August – October with the peak in September.

What is the average number of pounds landed per trip? Does this vary throughout the year?

From 1953 - 2022 the average Spanish mackerel landed per trip was 82 lbs. The landings are variable throughout the year with around 70% of the commercial landings happening in September (~50%) and August (~20%).

Average annual landings are 7,334 pounds/year during the entirety of the time series, with annual landings varying greatly.

What other commercial species are commonly targeted/landed with Spanish mackerel?

Recent landings show bycatch landings associated with NJ's smooth dogfish and Atlantic croaker gillnet fisheries.

Is port sampling or commercial fishery-dependent monitoring conducted? If so, please provide a brief summary of what commercial data are collected (e.g., length, effort) and note general observed trends over the past ten years.

No port sampling or commercial fishery-dependent monitoring is conducted.

Are there specific factors you would like to highlight that impact operation of the commercial fishery?

N/A

RECREATIONAL SPANISH MACKEREL FISHERY

How long has the recreational Spanish mackerel fishery been active (e.g., 1970s)?

According to MRIP there have been reported catch since 1986. All years of catch estimates have high PSE values indicating low confidence in estimates.

How much of the recreational fishery operates in state waters vs. federal waters?

Average over all years available in MRIP 55% of harvest in numbers of fish in state waters vs 45% in Federal Exclusive Economic Zone.

Row Labels	FEEZ	NJ	Grand Total	Percent State	Percent Fed EEZ
1986		211	211	100%	0%
1989	28684	11010	39694	28%	72%
1990	3084	867	3951	22%	78%
1991	6120	5202	11322	46%	54%
1992	9419	8844	18263	48%	52%
1993		3046	3046	100%	0%
1994		13185	13185	100%	0%
1996	2300		2300	0%	100%
1998	6437	1523	7960	19%	81%
1999	4118		4118	0%	100%
2000		330	330	100%	0%
2004		1384	1384	100%	0%
2006	133		133	0%	100%
2008	96	173	269	64%	36%
2009	129		129	0%	100%
2017	3665	4442	8107	55%	45%
2018	5406	1348	6754	20%	80%
2019	4449	4339	8788	49%	51%

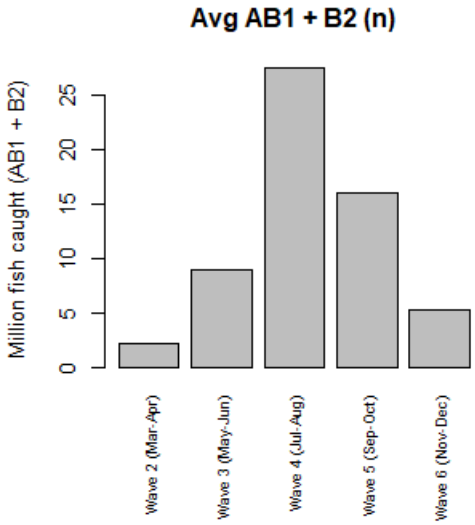
Row Labels	FEEZ	NJ	Grand Total	Percent State	Percent Fed EEZ
2020	3953	33	3986	1%	99%
2021	2234	32089	34323	93%	7%
2022	128	11737	11865	99%	1%
Grand Total	80355	99763	180118	55%	45%

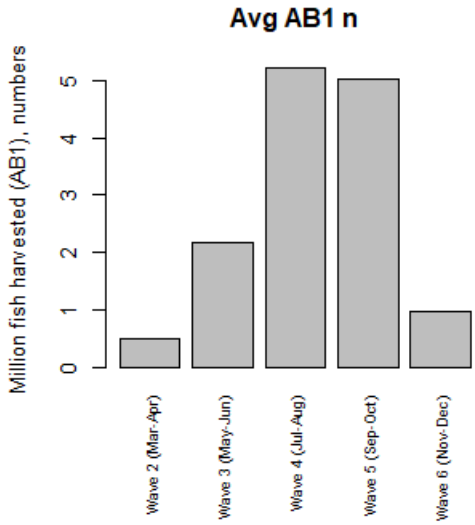
What gears are used in the recreational fishery?

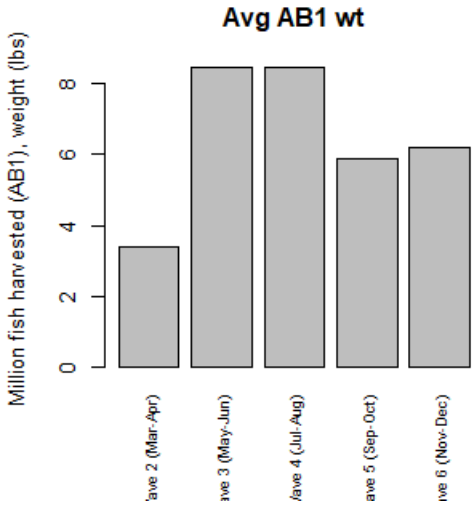
Hook and Line

How do recreational landings vary throughout the year? Is there a season or time of year when most landings occur (e.g., due to fish availability)?

By number, the fish are very available in July-Aug (wave 4); but, by weight, May – December).







What other recreational species are commonly targeted/landed with Spanish mackerel?

Response

Is port sampling or recreational fishery-dependent monitoring conducted? If so, please provide a brief summary of what recreational data are collected (e.g., length, effort) and note general observed trends over the past ten years.

New Jersey only performs APAIS that which can encounter Spanish Mackerel.

Are there specific factors you would like to highlight that impact the recreational fishery?

N/A

Are there notable Spanish mackerel tournaments, events, etc. you would like to highlight?

N/A

GENERAL

When during the year are Spanish mackerel available in your state waters?

Catches are generally infrequent and typically represent an opportunistic fishery with a significant amount of interannual variability in availability, catch, and harvest. See info above.

Is there anything else Board members should know about your state's commercial and recreational Spanish mackerel fisheries?

New Jersey's coast represents a portion of the northernmost extent of Spanish mackerel's range and as a result this species is not encountered with great frequency in the State's recreational or commercial fisheries. Cobia is not typically targeted by New Jersey fishermen but when they are seen by fishermen incidentally when targeting other more popular species. The opportunistic and infrequent nature of the Spanish mackerel fishery in New Jersey is clearly reflected in the available MRIP and commercial estimates of harvest. During the years of available MRIP estimates, harvest vary widely with PSEs rarely less than 50.

STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
DIVISION OF FISH & WILDLIFE
RICHARDSON & ROBBINS BUILDING
89 KINGS HIGHWAY
DOVER, DELAWARE 19901

FISHERIES SECTION

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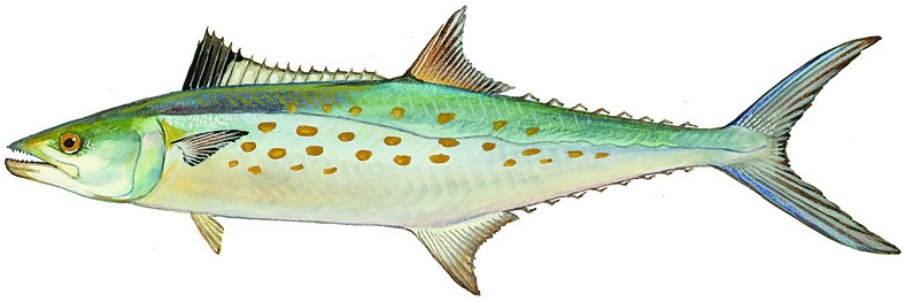
2023 Annual Spanish Mackerel Compliance Report and Fishery Profile for the State of Delaware:



2023 ASMFC Fishery Profile Questionnaire for Spanish Mackerel

Delaware

COMMERCIAL SPANISH MACKEREL FISHERY

How long has the commercial Spanish mackerel fishery been active (e.g., 1970s)?
Delaware does not have a Spanish mackerel commercial fishery. Spanish mackerel may be caught and landed by commercial gill netters and hook and liners on occasion, but no fisherman is targeting Spanish mackerel.

How much of the commercial fishery operates in state waters vs. federal waters?
N/A

Approximately how many participants in the commercial fishery?
Delaware issues 111 commercial gill net permits and approximately 172 commercial hook and line permits annually. Delaware also issues a small number of fish pot permits, with 5 issued to fish potters with black sea bass quota.

What gears are used in the commercial fishery? Which are the primary gears?
Gill nets and fish pots are responsible for the bulk of Delaware's commercial finfish landings. Hook and line is the other primary gear used in Delaware as both trawls and purse seines are illegal for use in Delaware state waters.

How do commercial landings vary throughout the year? Is there a season or time of year when most landings occur (e.g., due to quota closures, fish availability)?
Striped bass, black sea bass, and Atlantic menhaden typically account for 80% - 90% of Delaware's annual finfish landings. Delaware's spring striped bass gill net season opens February 15 and ends on May 31, but ~90% are landed in March and April. Black sea bass are landed throughout the year but most are landed winter and spring. Atlantic menhaden landings vary widely depending on the timing of their availability. If they are abundant during the spring striped bass gill net fishery, some gill netters will set out additional nets to catch Atlantic menhaden to freeze for crab bait.

What is the average number of pounds landed per trip? Does this vary throughout the year?
N/A as no Spanish mackerel were landed.

What other commercial species are commonly targeted/landed with Spanish mackerel?
N/A as no Spanish mackerel were landed.

Is port sampling or commercial fishery-dependent monitoring conducted? If so, please provide a brief summary of what commercial data are collected (e.g., length, effort) and note general observed trends over the past ten years.
No, no commercial Spanish mackerel caught in Delaware.

Are there specific factors you would like to highlight that impact operation of the commercial fishery?
No.

RECREATIONAL SPANISH MACKEREL FISHERY

How long has the recreational Spanish mackerel fishery been active (e.g., 1970s)?
First landings recreationally were reported in 1990.

How much of the recreational fishery operates in state waters vs. federal waters?
Most landings occur in Federal waters (ocean over 3 miles).

What gears are used in the recreational fishery?
Hook & Line is the only gear used.

How do recreational landings vary throughout the year? Is there a season or time of year when most landings occur (e.g., due to fish availability)?
Very low occurrence during earlier years, landings have increased greatly in the past few years.

What other recreational species are commonly targeted/landed with Spanish mackerel?
Don't have data, but likely other pelagic schooling species (bluefish, false albacore)

Is port sampling or recreational fishery-dependent monitoring conducted? If so, please provide a brief summary of what recreational data are collected (e.g., length, effort) and note general observed trends over the past ten years.
APAIS sampling is done at random sites throughout the area. This is collecting catch data (lengths and weights) if possible.

Are there specific factors you would like to highlight that impact the recreational fishery?
No.

Are there notable Spanish mackerel tournaments, events, etc. you would like to highlight?
No.

GENERAL

When during the year are Spanish mackerel available in your state waters?

During Wave 4 and Wave 5

Is there anything else Board members should know about your state's commercial and recreational Spanish mackerel fisheries?
No.

2023 ASMFC Fishery Profile Questionnaire for Spanish Mackerel

Please submit your state's response to the following questions by October 1, 2023 to

Chelsea Tuohy, FMP Coordinator, at ctuohy@asmfc.org.

Maryland

COMMERCIAL SPANISH MACKEREL FISHERY

How long has the commercial Spanish mackerel fishery been active (e.g., 1970s)?

MD has records of Spanish mackerel commercial landings back to 1965 (NMFS data), but some years since have no reported landings.

How much of the commercial fishery operates in state waters vs. federal waters?

1965 – 2022 state waters: 84.4% (291,890 lbs), Federal waters: 11.43% (39,512 lbs), unknown: 4.1% (14,277 lbs)
1990 – 2022 state waters: 87.58% (275,538 lbs), Federal waters: 10.87% (34,194 lbs), unknown: 1.55% (4,877 lbs)

Approximately how many participants in the commercial fishery?

Our fisherman counts started in 1990. From 1990 to 2022 we averaged 18 fisherman a year but in 2006 we had a drop in number of fishermen. From 2006 to 2022 we averaged 10 fisherman a year. Our commercial fisherman do not target Spanish mackerel so this number may have shifted due to the number of Spanish mackerel moving up the bay and becoming available to our fisherman.

What gears are used in the commercial fishery? Which are the primary gears?

Primary gear used is pound nets and gill nets. Spanish mackerel are not targeted, and these are the primary fishing methods that encounter them. Maryland has consistent gear data starting in 1990.
1990 – 2022 Pound nets: 61.05% (192,075 lbs), Gill nets: 33.86% (106,525 lbs), Hook & Line: 2.72% (8,566 lbs), Trawl: 1.05% (3,293 lbs), and Other 1.32% (4,150 lbs)

How do commercial landings vary throughout the year? Is there a season or time of year when most landings occur (e.g., due to quota closures, fish availability)?

Spanish mackerel are landed in Maryland from June to October. These months make up 92.2% of the fish landed. The majority of fish are landed in August (31.84%) and September (35.3%) due to Spanish mackerel availability.

What is the average number of pounds landed per trip? Does this vary throughout the year?

Maryland started recording number of trips in 2006. From 2006 to 2022 there was an average of 45.27 lbs of Spanish mackerel per trip. Due to this being a seasonal, and primarily bycatch, fishery we did not calculate pounds per trip by month. (This includes tips catching only.)

What other commercial species are commonly targeted/landed with Spanish mackerel?

Our fishermen are mostly targeting Atlantic menhaden, Stripped bass, Atlantic croaker, and Spot. Spanish mackerel, bluefish, weakfish, red drum and black drum are caught in addition to the targeted species when available in Maryland.

Is port sampling or commercial fishery-dependent monitoring conducted? If so, please provide a brief summary of what commercial data are collected (e.g., length, effort) and note general observed trends over the past ten years.

MD DNR does not have a specific monitoring program for Spanish mackerel; however, they typically are encountered in the onboard commercial pound net survey, which was conducted from May to September since 1993. Data was collected for date, GPS location, site number, net soak time in hours, water temperature in °C, and salinity ppt. Fish data was gathered on Spanish mackerel including fork length and count. Maryland has been recording FL since 2001, previous years were a combination or both total and fork length.

Spanish Mackerel fork length from the onboard sampling ranged from 123 – 751 millimeters. The survey encountered 261 Spanish mackerel in 2022 with a mean length of 407 millimeters FL. In 2013, and 2019-2022 there were larger sample numbers. When Spanish mackerel migrate into Maryland waters our fisherman encounter them in their nets and higher sample numbers are observed. Collection data has similar trends to our commercial data.

Are there specific factors you would like to highlight that impact operation of the commercial fishery?

RECREATIONAL SPANISH MACKEREL FISHERY

How long has the recreational Spanish mackerel fishery been active (e.g., 1970s)?
Likely well before MRIP survey began in 1981, but no state data available to document.

How much of the recreational fishery operates in state waters vs. federal waters?
96% State waters vs. 4% federal waters

What gears are used in the recreational fishery?
Hook and Line

How do recreational landings vary throughout the year? Is there a season or time of year when most landings occur (e.g., due to fish availability)?
June to October with the Majority in August, and September (anecdotal not data driven)

What other recreational species are commonly targeted/landed with Spanish mackerel?
Bluefish and Striped Bass (anecdotal not data driven)

Is port sampling or recreational fishery-dependent monitoring conducted? If so, please provide a brief summary of what recreational data are collected (e.g., length, effort) and note general observed trends over the past ten years.
All sampling has been done by MRIP angler intercept survey. There is no state port sampling for Spanish mackerel in Maryland.

Are there specific factors you would like to highlight that impact the recreational fishery?
Annual climate variability impacts Spanish mackerel availability in Maryland waters, particularly in Maryland's portion of Chesapeake Bay.

Are there notable Spanish mackerel tournaments, events, etc. you would like to highlight?
No

GENERAL

When during the year are Spanish mackerel available in your state waters?
June through October (95% of commercial harvest), rare to unavailable January – April, November and December.

Is there anything else Board members should know about your state's commercial and recreational Spanish mackerel fisheries?
No

2023 ASMFC Fishery Profile Questionnaire for Spanish Mackerel

Potomac River Fisheries Commission

COMMERCIAL SPANISH MACKEREL FISHERY

How long has the commercial Spanish mackerel fishery been active (e.g., 1970s)?
1960's

How much of the commercial fishery operates in state waters vs. federal waters?
PRFC jurisdiction does not operate near federal waters.

Approximately how many participants in the commercial fishery?
15-20 participants

What gears are used in the commercial fishery? Which are the primary gears?
Pound net primarily, but there have been a few reports of Hook & Line and Haul Siene since 2010.

How do commercial landings vary throughout the year? Is there a season or time of year when most landings occur (e.g., due to quota closures, fish availability)?
We usually see them harvested from the Potomac River in early June then drop off around late-September each year. Harvest in the Potomac is highly variable from year to year. In the last 5 years PRFC reported harvest varying from 420 lbs to 45,385lbs.

What is the average number of pounds landed per trip? Does this vary throughout the year?
Average per trip = 55.94 lbs in 2022. Peak months were June and August. In July we saw a decrease to ~33 lbs per trip compared to 64lb in June and 62lb in August.

What other commercial species are commonly targeted/landed with Spanish mackerel?
Menhaden, Bluefish, Butterfish

Is port sampling or commercial fishery-dependent monitoring conducted? If so, please provide a brief summary of what commercial data are collected (e.g., length, effort) and note general observed trends over the past ten years.
No fishery dependent commercial sampling or monitoring is being completed in PRFC.

Are there specific factors you would like to highlight that impact operation of the commercial fishery?

Spanish mackerel have daily catch limits (landing limits) imposed subject to ASMFC notification and may be closed immediately by Order of the Commission upon notification by both Maryland and Virginia that the ASMFC/MAFMC established commercial harvest quota for such species has been landed and the state waters are closed for the harvest of such species.

RECREATIONAL SPANISH MACKEREL FISHERY

How long has the recreational Spanish mackerel fishery been active (e.g., 1970s)?
Reference MD & VA responses.

How much of the recreational fishery operates in state waters vs. federal waters?
Reference MD & VA responses.

What gears are used in the recreational fishery?
Reference MD & VA responses.

How do recreational landings vary throughout the year? Is there a season or time of year when most landings occur (e.g., due to fish availability)?
Reference MD & VA responses.

What other recreational species are commonly targeted/landed with Spanish mackerel?
Reference MD & VA responses.

Is port sampling or recreational fishery-dependent monitoring conducted? If so, please provide a brief summary of what recreational data are collected (e.g., length, effort) and note general observed trends over the past ten years.
Reference MD & VA responses.

Are there specific factors you would like to highlight that impact the recreational fishery?
N/A

Are there notable Spanish mackerel tournaments, events, etc. you would like to highlight?
N/A

GENERAL

When during the year are Spanish mackerel available in your state waters?
June-September

Is there anything else Board members should know about your state's commercial and recreational Spanish mackerel fisheries?

N/A

2023 ASMFC Fishery Profile Questionnaire for Spanish Mackerel

Virginia

COMMERCIAL SPANISH MACKEREL FISHERY

How long has the commercial Spanish mackerel fishery been active (e.g., 1970s)?
Commercial Spanish mackerel landings have been reported yearly since 1939 when pulling data using the Spanish mackerel species code. Other mackerel species may have been incorrectly coded and the landings from 1939 till the early 1990's may be a mixture of multiple different mackerel species and are likely unreliable. Commercial data is more reliable after 1993 due to commercial mandatory reporting coming into effect in Virginia.

How much of the commercial fishery operates in state waters vs. federal waters?
Most of the commercial Spanish mackerel landings are harvested from state waters. Some years, there may be a small number of landings from trawl boats that are fishing outside 3 miles, but no Spanish mackerel has landed in federal waters since 2018 and all landings from 2018 till 2022 have come from state waters.

Approximately how many participants in the commercial fishery?
The number of harvesters has varied from year to year but in the past decade, there have been 50 to over 100 harvesters per year.

What gears are used in the commercial fishery? Which are the primary gears?
In the past decade, Spanish mackerel have been harvested with gillnet, haul seine, pound net, hook and line, trawls, long line, and a mixture of other gears that account for a very small amount of landings some years. The primary gears used for Spanish mackerel are gillnet, haul seine, and pound net.

How do commercial landings vary throughout the year? Is there a season or time of year when most landings occur (e.g., due to quota closures, fish availability)?
Most of the landings do take place between May and September when Spanish mackerel are in larger schools and more available within the Virginia portion of the Chesapeake Bay and along the oceanfront. Once the federal fishery closes, a daily quota of 500 pounds per vessel per day goes into effect limiting harvesters' daily landings. Depending on when this closure goes into effect it may cause some harvesters to decrease their fishing effort, so they do not exceed the 500-pound daily quota. Minimal landings also take place outside of the summer and early fall months while harvesters target other species.

What is the average number of pounds landed per trip? Does this vary throughout the year?
In the past decade, the average number of pounds landed per trip ranged from 31.2 to 199.5 pounds. The landings do vary during the year depending on availability with the highest landings per trip coming during the summer and early fall months.

What other commercial species are commonly targeted/landed with Spanish mackerel?
The main bycatch species seen in the Spanish mackerel fishery are bluefish, cobia, and Atlantic menhaden. A large portion of the commercial Spanish mackerel fishery is done using gillnets so other species can become entangled, but the three listed species are the main bycatch species seen.

Is port sampling or commercial fishery-dependent monitoring conducted? If so, please provide a brief summary of what commercial data are collected (e.g., length, effort) and note general observed trends over the past ten years.
The VMRC Biological Sampling Program collects biological data from Virginia's commercial fisheries. Currently, there are 3 biological sampling staff that cover the entire state purchasing Spanish mackerel from harvesters and fish houses, the fish are purchased, and data is collected at the VMRC aging lab. This program collects weights, lengths, and ages of Spanish mackerel caught by commercial anglers.

The only trend noticed in the biological data is a slight trend to larger older fish in more recent years. The trends in increased age and size are likely antidotal and only represent a 20 to 30 mm increase in length and less than a year increase in age.

Are there specific factors you would like to highlight that impact operation of the commercial fishery?
Starting the 2022 fishing year, 4 experimental gear permits were distributed to commercial harvesters allowing them to fish up to 6000 feet of continuous drift gillnet to see if this longer single net is more effective to catch Spanish mackerel than several separate shorter gillnets. The gear permit allows harvesters to use this extended net from April 1 to October 15th. This drift net has a highflyer at one end and the boat is attached to the opposite end and fishes for an hour or two at a time. Some of the harvesters fishing these longer nets are fishing in the middle of the night due to the summer heat and not wanting fish to go bad in the sun. This experimental gear type was given to 1 more Spanish mackerel harvester in 2023. A stipulation with this experimental gear permit is allowing VMRC observer staff on the boat to look at the bycatch and see the effectiveness of the new gear. For the 2024 fishing year the number of experimental permits is going to be increased to approximately 20 commercial harvesters.

RECREATIONAL SPANISH MACKEREL FISHERY

How long has the recreational Spanish mackerel fishery been active (e.g., 1970s)?
The recreational fishery for Spanish mackerel increased in effort in the early 1990s when they became more available to anglers. Before the early 90s, people would catch them as bycatch while targeting other species but not normally a targeted species.

How much of the recreational fishery operates in state waters vs. federal waters?
Almost all the recreational Spanish mackerel landings are coming from state waters but some anglers fishing in federal waters may land Spanish mackerel as bycatch.

What gears are used in the recreational fishery?
Spanish mackerel are recreationally caught using hook and line, cast net, and spear gun. Most of the recreational harvest is caught using some sort of hook-and-line method.

How do recreational landings vary throughout the year? Is there a season or time of year when most landings occur (e.g., due to fish availability)?
Most of the recreational harvest takes place between June and September when they are available in larger quantities to anglers. Many Virginia charter businesses run trips throughout the summer targeting Spanish mackerel within the Chesapeake Bay and along the oceanfront. Outside of the summer and early fall months, people will still catch them while fishing for other species but not normally in large quantities.

What other recreational species are commonly targeted/landed with Spanish mackerel?
While targeting Spanish mackerel the main bycatch species seen are bluefish and Atlantic cutlass fish, weakfish and speckled trout can also be a common bycatch species in certain areas of the Bay and during the earlier and later parts of the season.

Is port sampling or recreational fishery-dependent monitoring conducted? If so, please provide a brief summary of what recreational data are collected (e.g., length, effort) and note general observed trends over the past ten years.
The VMRC established its Marine Sportfish Collection Project in 2007. The project allows anglers to donate carcasses by dropping them off in freezers at high-traffic recreational fishing areas. Fish are processed for length, age, and sex. The number of fish donated per year can vary depending on where anglers dock their boat or where they are shore fishing. The number of recreational samples collected in total are not large enough to see noticeable trends from year to year.

Are there specific factors you would like to highlight that impact the recreational fishery?
Spanish mackerel have become a heavily targeted species during the summer months and with people coming to the Bay and oceanfront areas for vacations. Many anglers do harvest their daily limit when possible and normally only release fish when they are under the minimum size limit.

Are there notable Spanish mackerel tournaments, events, etc. you would like to highlight?
Some years there are local Spanish mackerel-specific tournaments in Virginia but there are often separate portions of larger tournaments where anglers can buy in for the heaviest Spanish mackerel. These side bets usually take place during a tournament for a different larger species being the main target during the tournament.

GENERAL

When during the year are Spanish mackerel available in your state waters?
They are most available during the months of May to September with some being caught in the recreational and commercial fishery before and after these warmer months.

Is there anything else Board members should know about your state's commercial and recreational Spanish mackerel fisheries?
The Spanish mackerel fishery is a heavily targeted species during the summer months when tourists are vacationing. Anglers will target them on charter boats, the beach, and from the ocean and bayside piers. Most anglers do like to keep up to their daily limit (15 fish per day with a 14-inch minimum) when possible, most anglers do find Spanish mackerel being good table fare. A lot of anglers do not take part in catch and release with this species unless the fish does not meet the minimum size requirement.

2023 ASMFC Fishery Profile Questionnaire for Spanish Mackerel

North Carolina

COMMERCIAL SPANISH MACKEREL FISHERY

How long has the commercial Spanish mackerel fishery been active (e.g., 1970s)?
North Carolina commercial landings data is available from 1950; however, it is likely there was a fishery operating before this. Trip-level reporting of commercial fisheries landings for all state-licensed fish dealers began in 1994.

How much of the commercial fishery operates in state waters vs. federal waters?
From 2013-2022, 96 percent of Spanish mackerel trips made, and 98 percent of landings came from state waters.

Approximately how many participants in the commercial fishery?
From 2013 to 2022, the average number of participants in the Spanish mackerel fishery was 374 and has ranged from a low of 305 in 2015 to a high of 474 in 2020.

What gears are used in the commercial fishery? Which are the primary gears?
Gill nets and estuarine pound nets are predominantly used to commercial harvest Spanish mackerel in NC.

North Carolina's 2022 commercial Spanish mackerel harvest (pounds and percent by gear) and the number of individual fish measured by the North Carolina Division of Marine Fisheries.

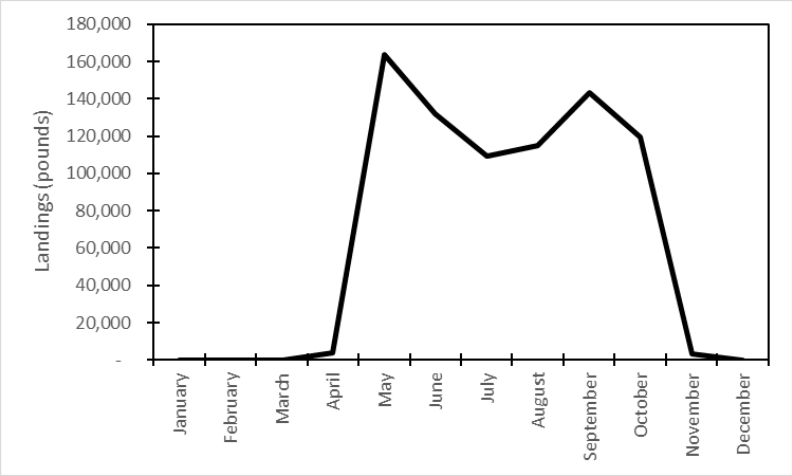
Gear	Landings (lbs.)	% Total Landings	Number Measured
Gill Net	890,181	96	2,434
Pound Net	29,953	3	256
Other Gears*	5,893	1	177
Total	926,027	100	2,867

**Other gears include beach seine, long haul seine, swipe net, and trolling gear.*

How do commercial landings vary throughout the year? Is there a season or time of year when most landings occur (e.g., due to quota closures, fish availability)?
In North Carolina, Spanish mackerel are harvested year round (when the season is open), but harvest mainly occurs from May through October. Following the opening of the fishery in March, landings tend to peak in May and again in September. Since 2019, North Carolina has allowed commercial harvest of Spanish mackerel in state waters following the closure in federal waters once the commercial ACL has been reached. In North Carolina's Coastal and Joint Fishing

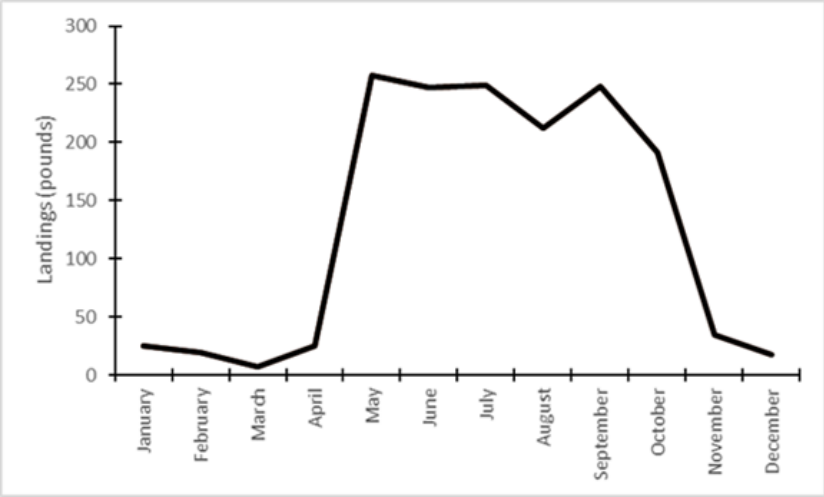
Waters, the commercial fishery closes once the ACL is reached, or on the second Friday in November (e.g., November 10, 2023).

Average monthly commercial landings of Spanish mackerel in North Carolina (2013-2022).



What is the average number of pounds landed per trip? Does this vary throughout the year? From 2013-2022, commercial fishermen landed an average of 221 pounds of Spanish mackerel per trip. Landings per trip follow a similar pattern to the average landings per month.

Average monthly commercial landings per trip of Spanish mackerel in North Carolina (2013-2022).



What other commercial species are commonly targeted/landed with Spanish mackerel? Bluefish, harvestfish, Atlantic sharpnose shark, false albacore, blacktip shark, spinner shark, spot, houndfish, and butterfish are incidentally landed with Spanish mackerel.

Is port sampling or commercial fishery-dependent monitoring conducted? If so, please provide a brief summary of what commercial data are collected (e.g., length, effort) and note general observed trends over the past ten years.
Length-frequency and effort information for the commercial Spanish mackerel fishery in North Carolina is collected through NCDMF's Program 431 (sciaenid pound net), Program 434 (ocean gill net), Program 461 (estuarine gill net), and Program 466 (Onboard Observer Program). Ageing structures, otoliths, are collected from fishery-dependent sampling programs and are sent to the Southeast Fisheries Science Center in Panama City, Florida for processing and ageing.

Spanish mackerel length (fork length, inches) data from commercial fish house samples, 2013–2022.

Year	Mean Length	Minimum Length	Maximum Length	Total Number Measured
2013	16.6	7.9	28.5	3,902
2014	16.3	8.6	27.7	4,462
2015	16.1	10.0	26.8	5,402
2016	16.3	5.8	28.8	6,888
2017	16.4	10.7	28.0	4,522
2018	16.5	10.8	28.0	3,772
2019	16.5	9.6	28.4	4,427
2020	16.1	8.6	27.9	4,947
2021	16.6	9.9	28.8	5,077
2022	16.7	10.4	26.8	2,778

Are there specific factors you would like to highlight that impact operation of the commercial fishery?
Availability of Spanish mackerel to the commercial fishery is dependent on inshore/nearshore water temperature. Another factor impacting the commercial Spanish mackerel fishery in North Carolina is the Northern Zone commercial quota. Once the ACL is met, North Carolina implements a 500-pound trip limit through the second Friday in November. During the closure in federal waters, commercial fishermen are limited to 800 yards of gill net (drift) per vessel in the Pamlico Sound.

RECREATIONAL SPANISH MACKEREL FISHERY

How long has the recreational Spanish mackerel fishery been active (e.g., 1970s)?
MRIP recreational landings data from is available since 1981 but the fishery has been active since before the survey was initiated.

How much of the recreational fishery operates in state waters vs. federal waters?
In 2022, 95 percent of recreational trips targeting Spanish mackerel were made in North Carolina State Coastal and Joint Waters and five percent were made in Federal waters.

What gears are used in the recreational fishery?
Recreational anglers mainly target Spanish mackerel with hook and line gear by trolling and casting small spoons and plugs.

How do recreational landings vary throughout the year? Is there a season or time of year when most landings occur (e.g., due to fish availability)?
Anglers catch most Spanish mackerel between May and September once the water temperature has warmed up to 70 degrees Fahrenheit. Fish appear to be showing up earlier and staying later in Nort Carolina waters in recent years.

What other recreational species are commonly targeted/landed with Spanish mackerel?
Bluefish, Atlantic bonito, king mackerel and false albacore are commonly caught alongside Spanish mackerel.

Is port sampling or recreational fishery-dependent monitoring conducted? If so, please provide a brief summary of what recreational data are collected (e.g., length, effort) and note general observed trends over the past ten years.
Recreational fishing activity is monitored through the Marine Recreational Information Program (MRIP). MRIP port samplers measured 1,070 Spanish mackerel in 2022. Recreational estimates across all years were calibrated using estimates from the mail-based Fishing Effort Survey (FES). Using the FES methodology, 1,841,527 pounds of Spanish mackerel were landed by the recreational fishery in 2022. North Carolina recreational fishermen harvested 1,898,755 and released 2,268,283 (numbers of fish) Spanish mackerel using FES methodology in 2022.

Mean, minimum, and maximum lengths (fork length, inches) of Spanish mackerel collected from the recreational fishery for the period 2013-2022.

Year	Mean Length	Minimum Length	Maximum Length	Total Number Measured
2013	15.1	10.1	27.1	454
2014	14.8	9.0	29.9	754
2015	14.8	9.2	27.4	644
2016	14.3	11.0	26.3	1,030
2017	14.8	10.3	26.4	1,023
2018	15.0	9.9	27.2	1,691
2019	15.0	9.3	28.2	1,486
2020	15.6	9.0	27.5	1,914
2021	15.8	9.6	32.3	1,313
2022	14.1	9.7	26.6	1,070

Are there specific factors you would like to highlight that impact the recreational fishery?
Availability of Spanish mackerel to the recreational fishery is dependent on inshore/nearshore water temperature. Water clarity and forage are also factors that can impact the fishery.

Are there notable Spanish mackerel tournaments, events, etc. you would like to highlight?
There are two Spanish mackerel tournaments held in North Carolina that are worth noting. The Fisherman's Post Spanish Mackerel Open is held in Wrightsville Beach in June and the Carteret Community College Spanish Mackerel and Dolphin Tournament held in Morehead City in July.

GENERAL

When during the year are Spanish mackerel available in your state waters?
Spanish mackerel are typically available from April through October.

Is there anything else Board members should know about your state's commercial and recreational Spanish mackerel fisheries?
N/A

- **Annual Commercial landings (by gear type if available)**

North Carolina commercial harvest of Spanish mackerel with landings in pounds by gear type, 1994–2022.

	Gear				
Year	Ocean Gill Net	Estuarine Gill Net	Pound Net	Other	Total
1994	327,155	138,452	29,708	36,057	531,371
1995	233,296	104,827	49,077	15,192	402,392
1996	215,536	124,013	45,221	17,060	401,830
1997	502,463	174,141	60,898	29,457	766,958
1998	234,547	97,472	26,962	13,435	372,415
1999	297,435	98,855	49,485	13,326	459,100
2000	462,459	162,291	21,792	12,884	659,426
2001	411,974	186,628	33,163	21,909	653,673
2002	463,430	205,865	24,118	5,035	698,448
2003	368,171	80,219	5,218	3,176	456,784
2004	359,467	90,317	3,524	2,934	456,242
2005	257,074	180,874	2,184	5,869	446,001
2006	358,614	100,114	2,783	9,152	470,662
2007	420,680	57,144	3,440	6,615	487,879
2008	268,435	93,579	49,534	3,857	415,405
2009	454,081	266,621	228,201	12,908	961,811
2010	177,091	631,218	96,490	7,068	911,866
2011	287,908	524,967	53,704	4,638	871,217
2012	501,369	372,759	38,644	3,667	916,439
2013	346,810	250,524	18,764	4,654	620,752
2014	422,528	221,799	25,772	3,875	673,974
2015	289,489	229,114	40,032	3,080	561,714
2016	328,635	242,291	27,806	2,891	601,623
2017	507,905	287,434	17,314	3,436	816,089
2018	486,707	280,689	19,931	9,563	796,890
2019	354,891	322,101	39,118	6,288	722,398
2020	601,095	369,436	53,384	9,611	1,033,526
2021	711,685	404,168	31,767	7,669	1,155,289
2022	457,503	432,678	29,953	5,893	926,026

- **Seasonal Commercial landings (e.g., month, wave, or other time step monitored by your state if available)**

  Average monthly commercial landings of Spanish mackerel in North Carolina (2013-2022).

January	64
February	43
March	91
April	3,967
May	163,980
June	132,188
July	109,057
August	115,083
September	143,370
October	119,752
November	3,152
December	118

- **Annual Recreational landings and releases**

  Recreational harvest (number of fish landed and weight in pounds) and releases (number of fish) of Spanish mackerel from North Carolina, 1994– 2022.

Year	Number Landed	Number Released	Weight Landed (lb)
1994	641,980	292,919	724,589
1995	397,190	239,972	492,096
1996	533,333	184,518	709,589
1997	956,589	304,629	1,444,907
1998	374,804	145,746	488,951
1999	891,001	253,317	1,035,943
2000	1,102,777	451,910	1,175,351
2001	942,500	338,918	1,155,788
2002	787,125	309,546	987,238
2003	540,399	266,887	641,024
2004	534,720	317,189	819,978
2005	561,073	303,641	526,054
2006	439,736	165,098	624,488
2007	604,518	340,027	799,263
2008	1,013,980	806,280	1,234,030
2009	1,480,931	752,806	2,155,692
2010	927,116	701,634	1,116,099
2011	854,554	479,586	1,100,110
2012	995,852	591,792	1,327,350
2013	994,599	685,692	1,242,029
2014	1,028,925	814,064	1,193,442
2015	835,011	514,714	981,867
2016	918,352	546,950	907,400

2017	995,706	688,062	1,094,778
2018	1,012,889	1,019,418	1,156,702
2019	1,478,890	1,340,366	1,694,247
2020	1,286,131	1,267,210	1,843,314
2021	1,312,929	1,294,525	1,894,535
2022	1,898,755	2,268,283	1,841,527
Mean	908,357	609,852	1,117,530

- **Annual Directed Recreational Trips for Spanish mackerel (MRIP primary and secondary target)**

  Number of directed recreational trips (MRIP primary and secondary target) in North Carolina, 2013-2022.

Year	Directed Trips
2013	663,759
2014	845,589
2015	743,180
2016	831,169
2017	830,139
2018	773,434
2019	983,779
2020	847,055
2021	1,052,516
2022	1,248,801

2023 ASMFC Fishery Profile Questionnaire for Spanish Mackerel

South Carolina

COMMERCIAL SPANISH MACKEREL FISHERY

How long has the commercial Spanish mackerel fishery been active (e.g., 1970s)?

If one can even consider SC's commercial fishery for Spanish Mackerel to be "active," it has probably been active since at least the 1960's; possibly much earlier. However, landings of Spanish Mackerel have always been relatively limited, extremely variable, typically generated by a very small number of harvesters or vessels and have generally declined over time.

How much of the commercial fishery operates in state waters vs. federal waters?

While there is substantial annual variability with such an opportunistic fishery, trip counts and landings over the period 1972-2022 suggest that almost 77% of trips and 86% of landings are linked to state waters. (Pers. comm. Eric Hiltz, SCDNR, August 22, 2023).

Approximately how many participants in the commercial fishery?

Usually just one harvester, occasionally two to four harvesters, and usually one to three, but as high as eleven, dealers. (Pers. comm. Eric Hiltz, SCDNR, August 21, 2023).

What gears are used in the commercial fishery? Which are the primary gears?

Over the last decade or so, predominantly trawl and, to a lesser degree, rod and reel. Prior to the mid 1990's, gill nets and haul seines were also employed. (Pers. comm. Eric Hiltz, SCDNR, August 21, 2023).

How do commercial landings vary throughout the year? Is there a season or time of year when most landings occur (e.g., due to quota closures, fish availability)?

Trips reporting landings are rare in winter (December-March) and most common during summer through early fall (June-October), based on trip count by month for years 1972-2022. Landings (in pounds) from May through November account for 98% of total landings across the same years and the period June through November accounts for 91%. However, landings are so variable that this may not accurately represent any given year. (Pers. comm. Eric Hiltz, SCDNR, August 22, 2023). Landings are predominantly driven by presence of fish where SC fishermen are operating, and possibly also driven to a lesser degree by availability overlapping with a lull for the target species.

What is the average number of pounds landed per trip? Does this vary throughout the year?

Annual average for 1972-2022 is 176.2 lbs. Annual average for 2013 -2022 is 17.8 lbs., but with a StDev of 29.27 (min 1, max 127, n 37). (Pers. comm. Eric Hiltz, SCDNR, August 21, 2023). Over the period 1972 – 2022, for months with more than one trip, average landings ranged from 36 – 317 lbs.; with November yielding the highest value, December yielding the lowest, and January – March excluded due to low trip count. As with annual averages, the values drop substantially (7-47 lbs.) when only the last ten years (2013-2022) are considered, and fish are either absent or rare December through March. (Pers. comm. Eric Hiltz, SCDNR, August 22, 2023). So, there is some seasonality to landings.

What other commercial species are commonly targeted/landed with Spanish mackerel?

Penaeid shrimp, White Shrimp in particular, for a single species, appear to co-occur in the highest number of trips, followed by King Mackerel, and Whiting (Kingfish), over the period 2013-2022. However, Spanish Mackerel and various members of the snapper-grouper complex also co-occur in landings. (Pers. comm. Eric Hiltz, SCDNR, August 22, 2023). Though it seems likely that Spanish Mackerel are a potential by-catch of the snapper-grouper fishery, just as they may be from the shrimp fishery, rather than the other way around.

Is port sampling or commercial fishery-dependent monitoring conducted? If so, please provide a brief summary of what commercial data are collected (e.g., length, effort) and note general observed trends over the past ten years.

SCDNR does conduct port sampling efforts. Samples are collected at random from vessels, at the time of offloads, at federal dealer locations throughout the state. It should be noted that species landed are primarily snapper/grouper, with very limited Coastal Migratory Species. That data is entered into the NMFS Trip Intercept Program (TIP) online portal and samples are sent to the Beaufort Aging Lab for processing and analysis. SCDNR began collecting TIP length frequencies in 1983 and expanded sampling efforts to include age structures (otoliths) in 2005. NMFS houses the data, contacts are Lawrence Beerkircher (lawrence.r.beerkircher@noaa.gov) or Sarah Beggerly (sarah.beggerly@noaa.gov). SCDNR does not have a commercial observer program, or any other commercial fishery-dependent monitoring in place, other than monitoring of commercial landings data. (Pers. comm. Amy Dukes, SCDNR, September 26, 2023).

Are there specific factors you would like to highlight that impact operation of the commercial fishery?

It is almost entirely an opportunistic fishery.

RECREATIONAL SPANISH MACKEREL FISHERY

How long has the recreational Spanish mackerel fishery been active (e.g., 1970s)?

Insufficient data may exist to properly make this characterization. But, it is likely that they have been a component of the recreational fishery, at least since vessels ventured a mile or two offshore fishing recreationally.

How much of the recreational fishery operates in state waters vs. federal waters?

Based on comparison of total catch data (A+B1+B2) from state waters vs. federal EEZ from MRIP Catch Time Series query for the last 10 years (2003-2022), 97% of catch comes from state waters and 3% from the EEZ outside state waters. Just over 97% of effort is reported to focus on state waters as well. (Pers. comm. National Marine Fisheries Service, Fisheries Statistics Division. September 19, 2023 and September 25, 2023). However, SC charter logbook data suggests a bit different balance; with 60% of trips targeting federal waters. (Pers. comm. Eric Hiltz, SCDNR, August 22, 2023). This difference may very well reflect a difference in approach/focus (e.g., fishing locale) of charter captains and their clients, vs the individuals represented by the MRIP data.

What gears are used in the recreational fishery?

Rod and reel.

How do recreational landings vary throughout the year? Is there a season or time of year when most landings occur (e.g., due to fish availability)?

SC charter fishery effort and landings are highest in June-August. There appear to be no trips reported in January or February, very few from December and relatively few from March. (Pers. comm. Eric Hiltz, SCDNR, August 22, 2023). This pattern fits well with expected temporal availability of Spanish Mackerel off SC.

What other recreational species are commonly targeted/landed with Spanish mackerel?

The most commonly co-occurring single species when Spanish Mackerel are reported in SC charter logbook data is the Atlantic Sharpnose Shark. In descending order, the remaining nine species of the top ten are: Bluefish, Black Sea Bass, Black Tip Shark, King Mackerel, flounder, Ladyfish, Bonnethead Shark, Jack Crevalle, and Red Drum. (Pers. comm. Eric Hiltz, SCDNR, August 22, 2023). However, keep in mind that this is the picture from charter logbook data, and we have already established that it may paint a somewhat different picture of the fishery than MRIP might, given the apparent disparity of focus on distance from shore.

Is port sampling or recreational fishery-dependent monitoring conducted? If so, please provide a brief summary of what recreational data are collected (e.g., length, effort) and note general observed trends over the past ten years.

Yes. SC operates an MRIP survey, which follows standard MRIP protocols. (Brad Floyd, SCDNR, September 21, 2023). The SCDNR took over the MRIP Survey beginning in 2013.Prior to this, the SCDNR operated the State Finfish Survey (SCDNR-SFS) that operated in addition to the MRIP survey (and its predecessor the MRFSS survey). Currently, the SCDNR-SFS samples only in January-February (MRIP Wave 1) when the MRIP survey does not sample. (Chris McDonough, SCDNR, September 28, 2023).

Both landings and discards have substantially increased in the second half of this last decade. (Pers. comm. National Marine Fisheries Service, Fisheries Statistics Division. September 19, 2023). A similar trend, though on a different scale, is evident in SC Charter Logbook data. (Pers. comm. Eric Hiltz, SCDNR, August 22, 2023).

Are there specific factors you would like to highlight that impact the recreational fishery?

The continued ability to retain Spanish Mackerel, adhering to size and creel limits, to be used as bait may be of interest to participants in other Highly Migratory fisheries, as many favor them as bait, and are known to brine, vacuum seal, and freeze them for future use. (Pers. comm. Amy Dukes, SCDNR, September 26, 2023)

Are there notable Spanish mackerel tournaments, events, etc. you would like to highlight?

There is a Spanish Mackerel Derby out of Murrells Inlet, SC. No other notable tournaments in SC are known to focus on Spanish Mackerel.

GENERAL

When during the year are Spanish mackerel available in your state waters?

Based on available landings data, it would appear that Spanish Mackerel are likely available to some degree off SC from March through December, but predominantly from April through October. (Pers. comm. Eric Hiltz, SCDNR, August 22, 2023).

Is there anything else Board members should know about your state's commercial and recreational Spanish mackerel fisheries?

In case it has not become clear from the information above, while SC does have commercial landings of Spanish Mackerel, it would be a stretch to consider those to constitute a targeted fishery. The recreational fishery for Spanish Mackerel is vastly more substantial, and yet still largely an opportunistic target for most fishers and likely truly targeted by only a small segment of our recreational fishers.

- Annual Commercial landings (by gear type if available)

  The following is based upon SC commercial dealer report data. (Pers. comm. Eric Hiltz, SCDNR, August 21, 2023).

  Due to limited participation the vast majority of years, a table of commercial landings by year would largely be comprised of confidential information. However, it is hoped that the following summaries provide adequate insight into the nature of South Carolina's commercial landings of Spanish Mackerel.

  Over the time series 1972-2022, there were no commercial landings reported for nine of the fifty-one years (1999, 2001, 2004, 2005, 2008, 2009, 2011, 2012, and 2013). Across years with reported landings, landed lbs. ranged from 1 to 7,849, with a mean of 668. However, over the last 20 years, that range has been greatly reduced, to 1 to 151 lbs., with a mean of 38 lbs. Based upon relative contribution to lbs. landed by gear for the full 51 yrs. vs the last 20 yrs. it can be seen that several gears have been discontinued.

Gear	**Landings contribution 1972-2022**	**Landings contribution 2003-2022**
Trawl	59.4%	62.9%
Gill Nets, unspecified	17.3%	
Handlines (Rod and Reel)	15.2%	36.7%
Haul Seine	7.0%	
Fixed Net	1.2%	
Pots and Traps, Crab, Other	0.0%	0.4%

- Seasonal Commercial landings (e.g., month, wave, or other time step monitored by your state if available)

  Seasonal commercial landings are so limited and sporadic that there have only been three months since the start of 1990 where landings data are not classified as confidential. Over the last 20 years, no, or virtually no, Spanish Mackerel have been landed commercially during the months of December through March. May, June, and September, respectively yielded the highest landings, ranging from 214 down to 141 lbs. August, October, and November fall into the range of 40-66 lbs. June yielded slightly lower landings, and July substantially lower. Neither value is reported due to confidentiality, due to limited involvement. (Pers. comm. Eric Hiltz, SCDNR, August 21, 2023).

- Annual Recreational landings and releases

The following table reports MRIP Catch Time Series, for Spanish Mackerel taken off SC over the last 20 years (Pers. comm. National Marine Fisheries Service, Fisheries Statistics Division. September 19, 2023). Red highlights are flagging high PSE values, not confidential data.

Year	Total Harvest (A+B1)	PSE	Harvest (A+B1) Total Weight (lb)	PSE	Released Alive (B2)	PSE
2003	33,555	50.5	45,366	48.0	775,050	79.8
2004	136,976	46.3	137,024	38.7	184,383	51.9
2005	160,691	42.6	160,730	37.6	358,107	59.9
2006	52,180	45.1	95,551	55.0	52,411	49.1
2007	217,949	28.0	273,962	29.2	183,709	35.7
2008	94,603	32.8	109,142	27.8	150,102	31.2
2009	137,119	40.2	145,636	35.7	84,446	38.5
2010	171,442	30.4	279,816	31.9	138,549	64.5
2011	471,779	76.4	329,557	68.6	389,004	45.3
2012	258,281	41.5	262,932	37.3	313,339	42.1
2013	100,512	12.6	88,783	17.3	129,909	9.5
2014	194,367	31.7	213,864	35.8	136,783	43.0
2015	389,923	47.8	253,620	45.8	321,930	33.0
2016	306,235	72.9	192,865	63.8	333,635	55.4
2017	45,644	31.3	75,779	32.4	300,244	37.9
2018	289,250	45.0	513,271	49.0	322,330	50.6
2019	1,046,972	15.8	847,163	16.2	1,588,754	23.8
2020	861,349	32.3	556,882	29.9	1,060,185	29.0
2021	752,570	26.0	503,374	24.3	647,701	34.2
2022	1,060,999	29.9	773,139	29.7	1,401,659	30.0

- Annual Directed Recreational Trips for Spanish mackerel (MRIP primary and secondary target)

MRIP annual effort, directed trip, for Spanish Mackerel taken off SC over the last 10 years (Pers. comm. National Marine Fisheries Service, Fisheries Statistics Division. September 19, 2023).

Year	PSE	Directed trips
2013	22.0	127,584
2014	19.0	290,832
2015	11.5	444,305
2016	20.9	286,807
2017	18.9	219,514
2018	21.3	348,349
2019	12.2	494,920
2020	25.5	282,677
2021	14.8	411,898
2022	18.7	634,186

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2023 ASMFC Fishery Profile Questionnaire for Spanish Mackerel

GEORGIA

COMMERCIAL SPANISH MACKEREL FISHERY

How long has the commercial Spanish mackerel fishery been active (e.g., 1970s)?

N/A

How much of the commercial fishery operates in state waters vs. federal waters?

N/A

Approximately how many participants in the commercial fishery?

N/A

What gears are used in the commercial fishery? Which are the primary gears?

N/A

How do commercial landings vary throughout the year? Is there a season or time of year when most landings occur (e.g., due to quota closures, fish availability)?

N/A

What is the average number of pounds landed per trip? Does this vary throughout the year?

N/A

What other commercial species are commonly targeted/landed with Spanish mackerel?

N/A

Is port sampling or commercial fishery-dependent monitoring conducted? If so, please provide a brief summary of what commercial data are collected (e.g., length, effort) and note general observed trends over the past ten years.

N/A

Are there specific factors you would like to highlight that impact operation of the commercial fishery?

N/A

RECREATIONAL SPANISH MACKEREL FISHERY

How long has the recreational Spanish mackerel fishery been active (e.g., 1970s)?

We have data from MRIP beginning in 1981 through 2022. We have no information about recreational fishing prior to MRIP.

How much of the recreational fishery operates in state waters vs. federal waters?

From MRIP data 1981 to 2022, 78% of Spanish mackerel were encountered in state waters and 22% federal waters. See Table 1.

What gears are used in the recreational fishery?

Our assumption is that this is primarily a hook and line fishery.

How do recreational landings vary throughout the year? Is there a season or time of year when most landings occur (e.g., due to fish availability)?

Our fishing regulations allow harvesting of Spanish Mackerel year-round. According to MRIP data, 80% of Spanish Mackerel are caught in Waves 3 and 4. See Figure 1.

What other recreational species are commonly targeted/landed with Spanish mackerel?

The only query tool currently available for analyzing targeted species is directed trips, for selected species, by year. The number of directed trips targeting Spanish mackerel in Georgia is very low, less than 1% of total angler trips. Given that Spanish mackerel have been recorded in all areas and all modes, essentially any species available in Georgia could be landed or targeted along with Spanish mackerel. See Figure 2.

Is port sampling or recreational fishery-dependent monitoring conducted? If so, please provide a brief summary of what recreational data are collected (e.g., length, effort) and note general observed trends over the past ten years.

Recreational data have been collected through MRIP from 1981 to present. Please see MRIP website for survey details. Trends in catch are highly variable and have low levels of precision (averaging over 50% for full time series). Please see attached spreadsheet for specific information.

Are there specific factors you would like to highlight that impact the recreational fishery?

N/A

Are there notable Spanish mackerel tournaments, events, etc. you would like to highlight?

N/A

GENERAL

When during the year are Spanish mackerel available in your state waters?

We can only reliably indicate when we encounter Spanish Mackerel while conducting APAIS. As stated earlier, we typically encounter Spanish Mackerel from Waves 3 to 4. This aligns with anecdotal information from talking with colleagues and fishermen that Spanish Mackerel are typically observed in GA from spring to summer.

Is there anything else Board members should know about your state's commercial and recreational Spanish mackerel fisheries?

Georgia qualified for *de minimis* status eight out of the last 10 years. Our landings were only slightly above the requirement of 1% of the previous 3 years combined landings in 2020 (2.36%) and 2021 (1.78%). Even though a desired target species by our anglers, they are not consistently encountered through fishery dependent data collection (i.e., MRIP). Historically Spanish mackerel have catch estimates with high percent standard error (> 50%). Error for harvest improved some in 2020 and 2021, 36.9% and 39.2% respectively, compared to the 10-year average of 58.17%.

Table 1. Numbers of Harvested or Total Catch of Spanish Mackerel by area in Georgia from 1981 to 2022.

Area	Harvest (A+B1)	%	Total Catch (A+B1+B2)	%
Inland	147,967	14%	223,511	15%
Ocean under 3 mi	660,324	65%	917,135	63%
Ocean over 3 mi	214,627	21%	319,696	22%
Total	1,022,918		1,460,342	

Figure 1. Annual Recreational landings and Releases by Wave in Georgia from 1981-2022. All modes and areas are combined.

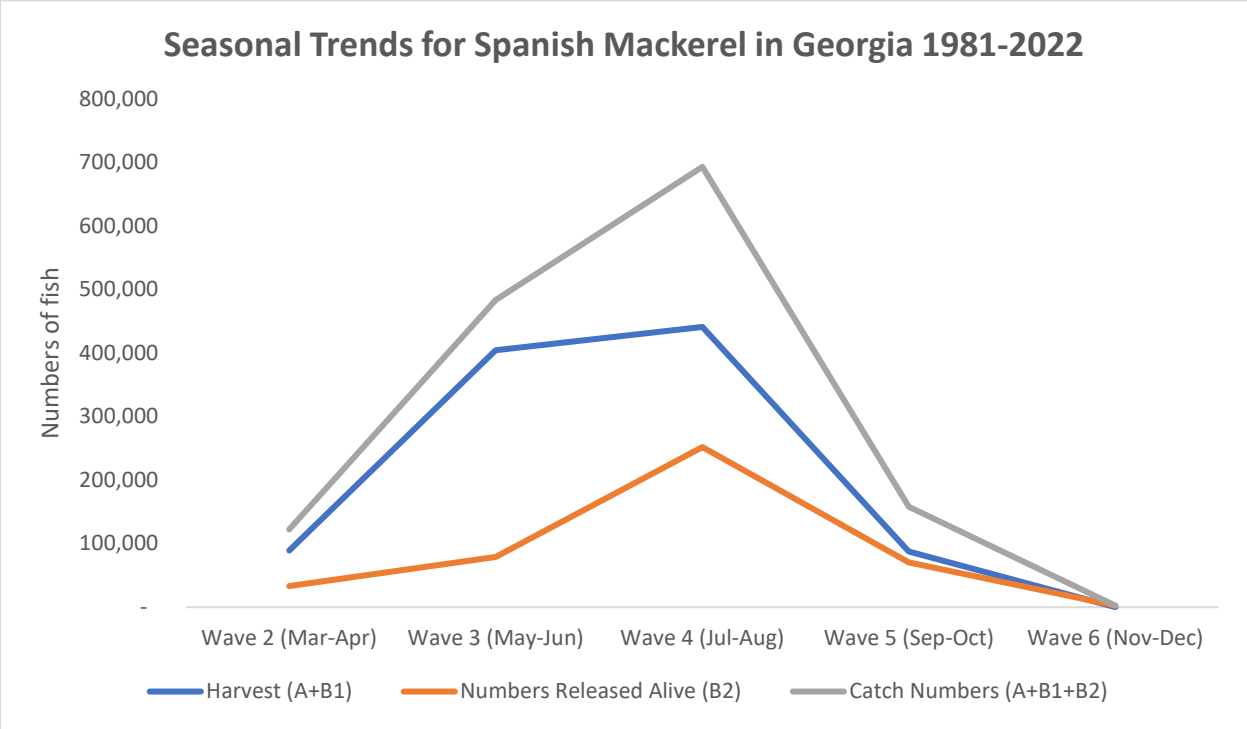


Figure 2. Number of directed trips for Spanish Mackerel in Georgia versus total effort.

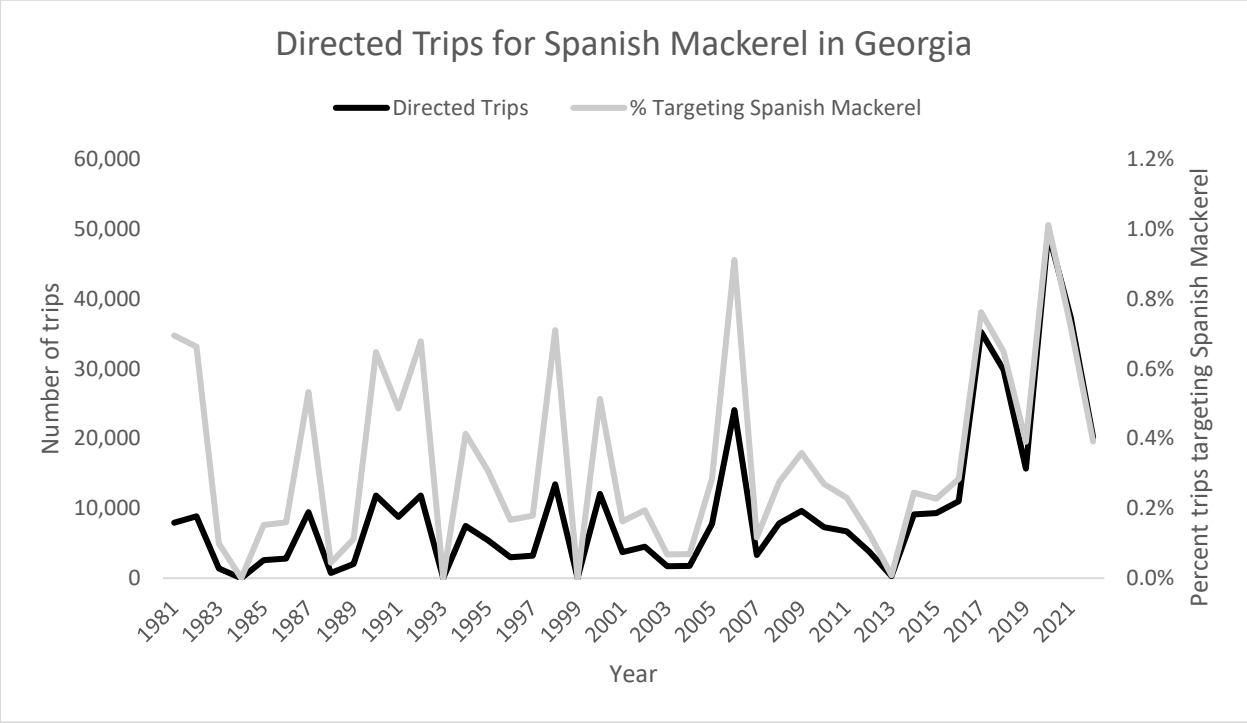
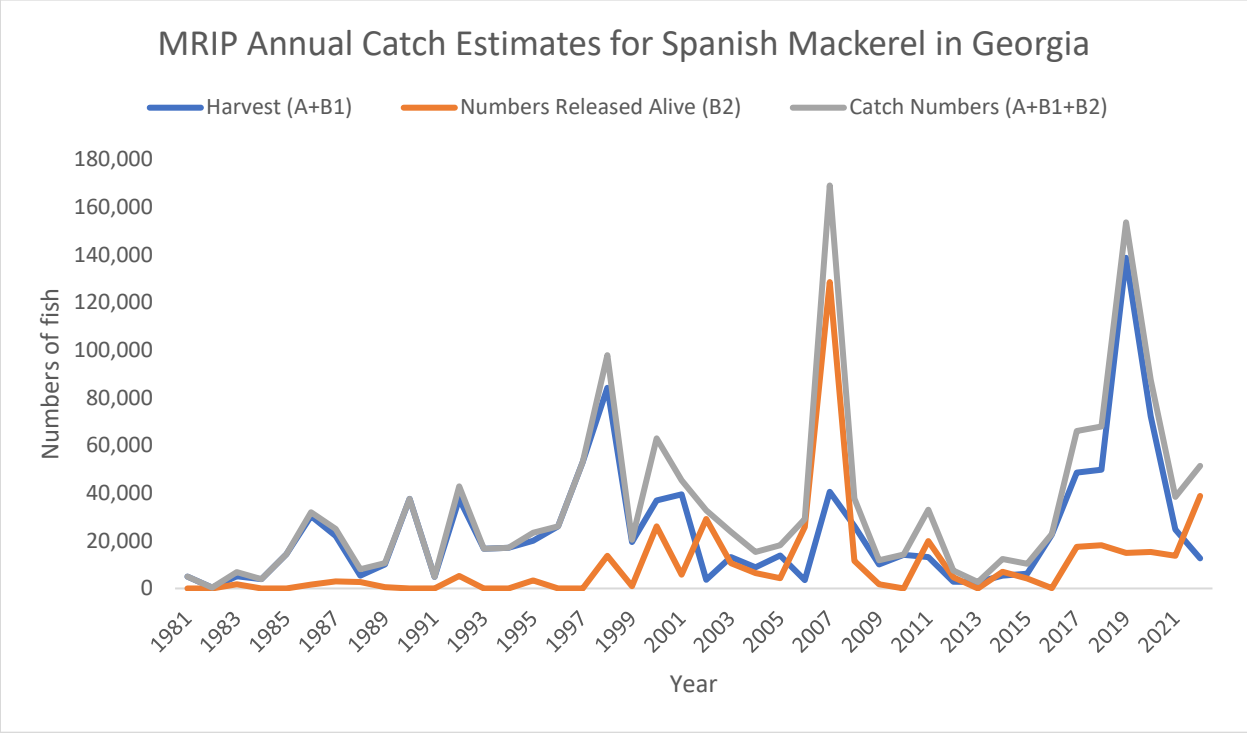
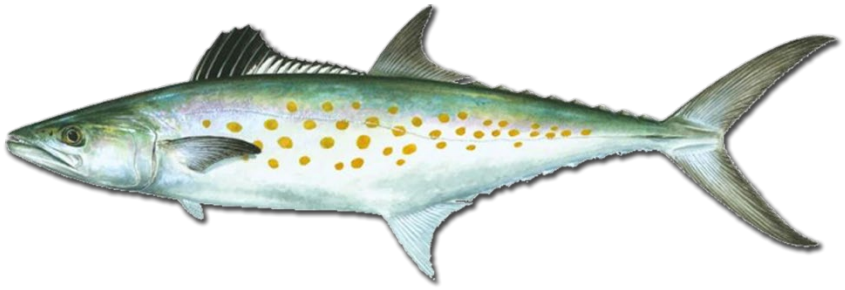


Figure 3. Annual catch estimates for Spanish Mackerel in Georgia from 1981 to 2022. All modes and areas are combined. Percent Standard Error for estimates range from 21.4 to 106.6 with averages about 50 in all categories.





The 2023 Atlantic States Marine Fisheries Commission Spanish Mackerel, *Scomberomorus maculatus*, fishery profile on Florida's Atlantic Coast

Prepared by:
Jeff Renchen, Biological Administrator II
Division of Marine Fisheries Management
Florida Fish and Wildlife Conservation Commission
1875 Orange Avenue East
Tallahassee, Florida 32311

October 2023

2023 ASMFC Fishery Profile Questionnaire for Spanish Mackerel

FLORIDA

COMMERCIAL SPANISH MACKEREL FISHERY

How long has the commercial Spanish mackerel fishery been active (e.g., 1970s)?

Commercial landings have been collected by Florida as far back as 1978, but commercial harvest extends further back than the 1970s. However, records earlier than the 1970s were kept by the U.S. Fish and Wildlife Service and are not readily available. Anecdotal accounts from commercial harvesters in Florida suggest that the commercial Spanish mackerel fishery was active at least as far back as the 1940s.

How much of the commercial fishery operates in state waters vs. federal waters?

There are different components of the commercial fishery, but the majority of the commercial harvesters operate in state waters. In the past 5 years (2018-2022), Spanish mackerel landings from state waters accounts for >90% of the total landings of this species along the Atlantic coast of Florida.

Approximately how many participants in the commercial fishery?

In the most recent season (2022), commercial landings of Spanish mackerel were associated with 436 unique Saltwater Product Licenses (SPLs). The SPL is required for commercial harvest of marine finfish, invertebrates, and plants from Florida waters. SPLs may be associated with a vessel or an individual, additionally, an individual may hold one or more SPLs. Note, this number does not account for individuals who work as crew members on vessels harvesting Spanish mackerel.

What gears are used in the commercial fishery? Which are the primary gears?

In the previous 5 years (2018-2022), commercial landings were reported from harvesters using cast net, gill net, hook and line, and trawls. The two primary gears used to land Spanish mackerel are hook-and-line (averaged 45.7% of landings from 2018-2022) and cast net (averaged 35.6% of landings from 2018-2022). Note: Gill nets may only be used to harvest Spanish mackerel in federal waters.

How do commercial landings vary throughout the year? Is there a season or time of year when most landings occur (e.g., due to quota closures, fish availability)?

Commercial landings are seasonal and take place primarily from late autumn (October) through the early spring (March). Spanish mackerel will migrate north during the summer months and then return in the fall to overwinter in Florida, which is when harvest is greatest.

There are three components to the state waters commercial fishery: cast net, hook-and-line food fish, and hook-and-line bait fish. The cast netters harvest fish between 12-14 inches and are most active when Spanish mackerel migrate to south Florida for the winter in December and January. The hook-and-line food fishermen target larger Spanish mackerel and this harvest picks up after cast netting wanes but operates year-round. Hook-and-line bait fishermen harvest smaller Spanish mackerel, and this component typically picks up in March. There is a lot of overlap between these different components of the commercial fishery, and some commercial harvesters will use all these gear types based on the bite and water conditions.

The federal waters commercial fishery utilizes gill nets and occasionally hook-and-line gear, with their peak harvest occurring in the spring (March – April) and again in the winter (November – February). These commercial harvesters typically fish 3-9 miles offshore from Cape Canaveral through southeast Florida.

What is the average number of pounds landed per trip? Does this vary throughout the year?

Through the previous 5 years (2018-2022), the average number of pounds landed per trip has ranged from a low of 299 lbs./trip in 2022 to a high of 603 lbs./trip in 2021. The average pounds landed per trip is not consistent throughout the year and is considerably lower from April through September (<50 lbs./trip on average) compared to October through March (>500 lbs./trip on average).

What other commercial species are commonly targeted/landed with Spanish mackerel?

Made a data request for this information.

Is port sampling or commercial fishery-dependent monitoring conducted? If so, please provide a brief summary of what commercial data are collected (e.g., length, effort) and note general observed trends over the past ten years.

Fishery-dependent monitoring of Spanish mackerel in Florida includes the collection of trip-specific, commercial landings records made through the Florida Marine Fisheries Information System (MFIS) or "Trip Ticket" program. Commercial fishers can also be interviewed at docks and fish houses through the Trip Interview Program (TIP). The information collected through this program includes catch, effort, biostatistical data, and biological samples.

Are there specific factors you would like to highlight that impact operation of the commercial fishery?

Increasingly, areas off central east Florida are closed to vessels by the U.S. Coast Guard to create safety zones associated with space launches. This has prevented fishermen from accessing areas where they would traditionally fish for Spanish mackerel, which has contributed to the relatively low amount of landings and effort reported in 2022.

RECREATIONAL SPANISH MACKEREL FISHERY

How long has the recreational Spanish mackerel fishery been active (e.g., 1970s)?

There is recreational catch data available through the 1980s but the recreational fishery has been active for much longer. Conversations with anglers along the Atlantic coast of Florida relayed that the recreational fishery extends at least as far back as the 1940s.

How much of the recreational fishery operates in state waters vs. federal waters?

The majority of the recreational fishery operates in state waters, with over 95% of the recreational catch and harvest in the past 5 years (2018-2022) occurring in state waters.

What gears are used in the recreational fishery?

Recreational fishermen can use a beach or haul seine, cast net, spear, and hook-and-line gear. The majority of recreational anglers utilize hook-and-line gear to catch Spanish mackerel.

How do recreational landings vary throughout the year? Is there a season or time of year when most landings occur (e.g., due to fish availability)?

Recreational harvest occurs throughout the entire year, but primarily occurs during the winter/spring from December through April. These five months accounted for around 68% of the recreational harvest from 2018-2022.

What other recreational species are commonly targeted/landed with Spanish mackerel?

Other species targeted and landed with Spanish mackerel on a recreational trip are bluefish, crevalle jack, sheepshead, southern kingfish, and red drum.

Is port sampling or recreational fishery-dependent monitoring conducted? If so, please provide a brief summary of what recreational data are collected (e.g., length, effort) and note general observed trends over the past ten years.

The recreational fishery is monitored using the National Marine Fisheries Service Marine Recreational Information Program's (MRIP) angler intercept survey and special for-hire surveys. This program provides estimates for effort, catch, and harvest using mailed surveys and dockside sampling. In addition, the Access Point Angler Intercept Survey (APAIS) provides some length information if they survey anglers that caught a Spanish mackerel on their trip.

Within the past ten years, recreational catch and effort (directed trips) have been variable with peaks in 2020 and 2021 and a large dip in 2022. Overall, recreational landings and releases have increased and decreased with effort.

Are there specific factors you would like to highlight that impact the recreational fishery?

None.

Are there notable Spanish mackerel tournaments, events, etc. you would like to highlight?

There are not any notable Spanish mackerel tournaments, but it should be noted that Spanish mackerel will concentrate in easily accessible, inshore areas during the winter. Because of this, commercial and recreational fisheries operate simultaneously in the same area and this has resulted in conflicts between the two sectors.

GENERAL

When during the year are Spanish mackerel available in your state waters?

Spanish mackerel are available year-round in state waters but are more abundant and targeted more following their migration south to overwinter in Florida waters.

Is there anything else Board members should know about your state's commercial and recreational Spanish mackerel fisheries?

The answers provided are a good overview of Florida's commercial and recreational Spanish mackerel fisheries.

[External] Stripe bass

From Anthony Diaz <anthonyd187@yahoo.com>
To comments@asmfc.org <comments@asmfc.org>
Date 2024-04-20 10:10

Following the collapse of the bass acquisition by the data, last year some sort you guys held onto the acquired slot sizes and nearly was all I caught. Be advised I'm jotting this to not only put this on mention but to monitor and record the data value at its rate should be tested for a year or so of none eligible for the stripped bass fisheries data to be on stand by with NO FISHING for an x amount of time while to review the performance and data on that. So many other sea life to deal with and besides people should deal with the closures and be allowed to resume else where as if retirement never happened and the rest are still being held up too.

Anthony D.
Here on southern New Hampshire coast

Atlantic States Marine Fisheries Commission

1050 N. Highland Street • Suite 200A-N • Arlington, VA 22201
703.842.0740 • 703.842.0741 (fax) • www.asmfc.org

MEMORANDUM

TO: **American Eel Management Board**

FROM: **Caitlin Starks, Senior FMP Coordinator**

DATE: **April 22, 2024**

SUBJECT: **Public Comment on Draft Addendum VI to the American Eel Fishery Management Plan**

The following pages represent a draft summary of all public comments received by ASMFC on American Eel Draft Addendum VI as of 11:59 PM (EST) on March 24, 2024 (closing deadline).

Comment totals for the Draft Addendum are provided in the table below, followed by a summary of the state public hearing, and written comments sent by organizations and individuals. A total of 32 written comments were received. These included 2 letters from organizations, and the remainder from individual industry stakeholders and concerned citizens. One public hearing was held via webinar. The total public attendance at the hearing was 23 individuals. No public comments were provided during the public hearing.

The following tables are provided to give the Board an overview of the support for each of the management options contained in Draft Addendum VI. Additional comments that did not indicate support for a particular option are included in the written comment summaries. Prevailing themes from the comments are highlighted below, including general considerations and rationales for support or opposition.

Table 1. Total Comments Received by ASMFC

Total Comments Received	
Public Hearing Comments	0
Total Form Letters	0
Organization Letters	2
Individual Comments	30
Total Written Comments	**32**

Table 2. Total Comments in Support of Each Option

Management Options	Written Comments	Organization Letters	Total
3.1, Option 1 (Status Quo)	27	1	**28**
3.2, Option 1 (No Sunset)	2	1	**3**
3.2, Option 2 (Three Years)		1	**1**
3.2, Option 3 (Three Years with Ability to Extend)			**0**

Prevailing themes from the public comments on Addendum VI are summarized below.

Rationales for 3.1 Option 1 (Status Quo Quota)

- There have been changes over the years for both conservation efforts (e.g., dam removals) and laws to protect the species and be able to harvest them without causing depletion.
- Maine's glass eel fishery is well managed and regulated, with individual quotas and daily catch reporting and a swipe card system. This has resulted in few law enforcement issues.
- Maine is unique in that it has large amounts of habitat.
- Elvers are plentiful and fishermen can easily fill their current quotas early in the season, allowing significant numbers of elvers to migrate upstream.

Rationales for 3.2 Option 1 (No Sunset for Maine Quota)

- The quota is working and should stay in place.

Rationales for Issue 2 Option 2 (Three Year Duration of Quota)

- The ASMFC should adopt Option 2 for the quota timeline to ensure a full review of the quota prior to 2028. This option encourages the ASMFC to embrace adaptive management principles. Undertaking a full review of the quota in three years would allow the ASMFC to make any necessary adjustments based on changed conditions, and also provide an opportunity for engagement and coordination with the Passamaquoddy Tribe.

Additional Comments

- Three comments argued that the Maine glass eel quota should be increased.
    - The quota should be increased back up to 18,000 pounds.
    - It would not hurt the biomass given the small number of fishermen.
    - Fishermen should be given credit for dam removal and habitat restoration work.
- States without glass eel fisheries should not get to vote on Maine's management.
- The Passamaquoddy Tribe expressed concerns regarding ASMFC management of the American eel resource. Two key recommendations include:

    - The ASMFC should consult with the Tribe prior to proposing any management actions that will affect American eel and other species in its region.
    - ASMFC and its state and federal partners should prioritize population and habitat restoration efforts over harvest quotas.
- One individual commented that they favor any measures to reduce or end harvest.

American Eel Draft Addendum VI Public Hearing

Webinar Hearing
February 28, 2024
23 Public Participants

Commissioners: Pat Keliher (ME), Megan Ware (ME), Cheri Patterson (NH), Doug Grout (NH), Jeff Kaelin (NJ), Kris Kuhn (PA), Roy Miller (DE), Chris Wright (NOAA)

ASMFC & State Staff: Caitlin Starks (ASMFC), Toni Kerns (ASMFC), Robert Atwood (NH), Jessica Best (NY), Deirdre Gilbert (ME), Taylor Shewokis (ME), Jonathan Varnum (ME), Daniel Vogel (ME), Jordan Zimmerman (DE)

Hearing Overview

- No public comments were provided.

American Eel Addendum VI Public Hearing Attendance		
First Name	**Last Name**	**Email Address**
Debra	Abercrombie	debra_abercrombie@fws.gov
Travis	Atwood	wadeatwood420@yahoo.com
Robert	Atwood	robert.atwood@wildlife.nh.gov
Jessica	Best	jessica.best@dec.ny.gov
Jessica	Card	jessicadanico7@gmail.com
Jeanne	Christie	jeanne.christie@mail.house.gov
Michael	Clough	mikeclough@mail.com
Ralph	Dana	rdana.7@gmail.com
Danny	Deraps	jessderaps@msn.com
G	F	graciejfishing@gmail.com
Tom	Fote	tfote@jcaa.org
Lance and Shelly	Geidel	smgeidel@tds.net
Deirdre	Gilbert	Deirdre.Gilbert@maine.gov
Norman	Gray	Normangray695@gmail.com
Doug	Grout	degrout@comcast.net
L	Hudson	landis@mainerivers.org
Billy	Johnson	billyj7015@gmail.com
Jeff	Kaelin	jkaelin@lundsfish.com
Lary	Keating	larykeating69@gmail.com
Pat	Keliher	patrick.keliher@maine.gov
Toni	Kerns	tkerns@asmfc.org
Morgan	Krell	mkrell@inlandbays.org
Kris	Kuhn	kkuhn@pa.gov
Roy	Miller	fishmaster70@comcast.net
John	Newell	jd_71@msn.com
Jason	Pardilla	jppardilla@hotmail.com
Cheri	Patterson	cheri.patterson@wildlife.nh.gov
Taylor	Shewokis	taylor.shewokis@maine.gov
Rustin	Taylor	Rustintaylor955@gmail.com
Jonathan	Varnum	jonathan.varnum@maine.gov
Dan	Vogel	daniel.vogel@maine.gov
Megan	Ware	megan.ware@maine.gov
Jeffrey	Willey	effreywilley87@gmail.com
Chris	Wright	chris.wright@noaa.gov
Darrell	Young	ayoung1972.40@gmail.com
Jordan	Zimmerman	jordan.zimmerman@delaware.gov
Mike	Klingerman	melindaklingerman@gmail.com
Sara	Rademaker	sara@americanunagi.com

Passamaquoddy Tribe
Joint Tribal Council

Motahkmikuk (207) 796-2301
Sipayik (207) 853-2600

March 22, 2024

Sent via Electronic Mail

Caitlin Starks
Senior Fishery Management Plan Coordinator
Atlantic States Marine Fisheries Commission
1050 N. Highland St., Suite 200 A-N
Arlington, Virginia 22201

Re: Draft Addendum VI to the Interstate Fishery Management Plan for American Eel

Ms. Starks:

We write on behalf of the Passamaquoddy Tribe ("Tribe") to provide comments on the Atlantic States Marine Fisheries Commission's ("ASMFC") *Draft Addendum VI to the Interstate Fishery Management Plan for American Eel* ("Addendum VI").[1]

1. Introduction

The Tribe is a sovereign and federally-recognized Indian tribe that maintains communities at two separate reservations: Sipayik and Motahkomikuk (i.e., Pleasant Point and Indian Township). We are a fishing people. Our name, Passamaquoddy, translates to "people who spear pollock." We have relied on marine resources for cultural and nutritional well-being since time immemorial. The Tribe's citizens continue to fish for various saltwater, freshwater, and anadromous species in order to provide a moderate livelihood for their families and carry on their cultural practices.

The American eel, called *katehsis* in Passamaquoddy, is, in particular, a culturally and economically important food and marine resource for the Tribe and its citizens. Historically, American eels were a cornerstone of the Tribe's diet, partly because of their abundance and presence throughout regional waterways for most of the year. Passamaquoddy People ate eels fresh or dried and smoked them for winter subsistence. Eels also provided for our practical needs. Eel skin is tough and shrinks when dried, making it useful for a variety of purposes. Eel fat can be used as a sunscreen, insect repellant, and water proofing agent. Eel organs are an effective bait for catching larger fish.

1 The Tribe's submission of these comments does not substitute for consultation with the ASMFC. Furthermore, the Tribe reserves the right to submit additional comments regarding Addendum VI after the deadline for public comments.

Today, Passamaquoddy fishermen participate in annual harvests of glass and elver eels pursuant to the Tribe's laws and a fish management plan, which are adjusted annually based on quota and other regulatory updates. Beginning the third week of March every year, hundreds of Passamaquoddy citizens will spread out from the St. Croix River on the northern border of Maine to the Portland area and further south to engage in an annual elver fishery. This elver fishery will result in millions of dollars in critical income flowing to tribal households from the harvest of glass eels. Multiple generations of tribal citizens gather together in traditional fishing places throughout the state to annually harvest eels around this time, which is a period of great joy and comradery among the Passamaquoddy People. Simply put, the Tribe's annual eel fishery is a culturally celebrated time that presents tribal citizens with lucrative economic opportunities not otherwise present in our communities in rural Maine. To safeguard and expand these opportunities, as well as protect an important cultural resource and practice, the Tribe's current fish management plans focus on supporting sustainable American eel fisheries through habitat restoration and fish passage measures.

Because of our historical and contemporary connections with American eel, the Tribe has a significant interest in any regulatory action which implicates the management of the species, including the ASMFC's development of and proposed actions under Addendum VI. The Tribe therefore offers the following comments on Addendum VI, which focus on four topics: the ASMFC's lack of consultation or coordination with the Tribe prior to releasing Addendum VI for public comment; the ASMFC's apparent focus on harvest quotas at the expense of more holistic habitat and population restoration efforts; the proposed harvest quota in Addendum VI; and the proposed quota timeline options in Addendum VI.

2. Comments on Addendum VI

A. The ASMFC should consult with the Tribe prior to proposing any management actions that will affect American eel and other species in our region.

The Tribe's primary concern with Addendum VI is the ASMFC's lack of coordination or engagement with the Tribe in developing it. The ASMFC did not invite the Tribe to consult or otherwise provide input as it was considering a proposed quota. The ASMFC did not provide the Tribe with an advanced or preliminary draft copy of Addendum VI prior to publication. Instead, the Tribe received notice of Addendum VI and the opportunity to comment at the same time as the general public. Given our important role and interests in American eel management, the ASMFC should have engaged the Tribe early in the process to solicit our input on a proposed quota and any other terms to be included in Addendum VI.

The ASMFC's failure to consult or coordinate with the Tribe speaks to a larger problem: the Tribe's lack of a voice in the ASMFC decision-making process. Currently, the ASMFC adopts harvest quotas which "flow down" to the State of Maine and then to the Tribe. The Tribe has little influence on those quotas and other ASMFC decisions, despite the potential effect on our fish management efforts and our citizens' fishing opportunities. The Tribe desires a "seat at the table" and a more collaborative relationship with the ASMFC, through which we can participate in ASMFC Boards, Committees, and Panels to assist with developing, updating, and implementing management plans for American eel and other species.

The Tribe's participation would provide a forum to raise concerns over the ASMFC's and its member states' proposed management actions, which often negatively impact our fisheries and our citizens' economic opportunities. For example, in 2013, Maine adopted a "swipe card" system for elver fishing, without the Tribe's consent, which caused reporting delays and other issues that resulted in overfishing, wasted catches, and other disruptions to tribal fishing. The same year, Maine also implemented a voluntary glass eel reduction. Addendum VI characterizes this as "the first glass eel quota in Maine," even though the Tribe was the first sovereign within the State of Maine to utilize a total allowable cap/poundage quota for eel management purposes. The ASMFC adopted the first formal glass eel quota the following year. Per a 2022 report by a team of researchers from the Harvard Project on American Indian Economic Development, the real capita per income of the Tribe and the other Wabanaki Nations was steadily rising from 2008 until it dropped sharply in 2013. The temporal correlation between the new swipe card system to implement the State of Maine's "new" quota approach and the precipitous drop in tribal member income from eel fishing suggests that Maine's and the ASMFC's management actions on glass eel had a substantial and detrimental effect on the Tribe's economy. If the Tribe had a seat at the ASMFC, it could have flagged these potential outcomes for the ASMFC and Maine before the swipe card system and quotas were formally adopted.

The Tribe is well-positioned to contribute to the ASMFC's fish management work. The Tribe has centuries of experience in sustainable management of aquatic resources and can advise the ASMFC on strategies for restoring and supporting viable populations and habitat. For the benefit of the resources and our constituents, the Tribe and the ASMFC should, wherever possible, work in tandem as co-managers instead of as two entirely separate entities managing the same species and populations.

The Tribe acknowledges that, at this point, it is likely too late for meaningful consultation and coordination on the development of Addendum VI. Moving forward, however, we urge the ASMFC to engage with the Tribe early and often whenever the ASMFC is considering any management actions that affect species in our traditional territory.

B. The Tribe recommends that the ASMFC and its state and federal partners prioritize population and habitat restoration efforts over harvest quotas.

The Tribe recognizes that the focus of Addendum VI is a harvest quota rather than other potential fish management actions. That said, the Tribe is concerned that the ASMFC places too much emphasis on quotas at the expense of other management strategies. Quotas do nothing to protect eel stocks from their biggest threats: habitat degradation and other non-fishing unnatural mortality such as encounters with hydroelectric turbines.

The ASMFC, in coordination with the Tribe and relevant federal and state agencies, should evaluate and implement strategies that produce meaningful benefits for American eel in Maine. For example, federal and state decision-makers should give serious consideration to removing any obsolete, unproductive, or particularly harmful dams that obstruct fish migration. For dams that cannot be removed, it is critical that fish passage infrastructure be updated and improved in a manner that mimics natural features as much as possible. Alternatively, resources should be dedicated to

collecting and transporting fish above dams, culverts, and other fish passage impediments using trucks. The restoration of habitat, through water quality improvement and other remedial measures, should likewise be a priority. The Tribe has seen success with these types of initiatives, and we urge the ASMFC and its state and federal partners to work with us to implement them on a wider scale.

C. The Tribe does not take position on the harvest quota proposed in Addendum VI at this time but urges the ASMFC to ensure that the quota is based on best available science.

As noted above, the ASMFC did not consult or coordinate with the Tribe prior to publishing Addendum VI for public comment. The Tribe accordingly had a very limited opportunity to review and evaluate the proposed quota. Without additional time to meaningfully consider the quota or the science to support it, the Tribe currently does not take a position in favor of or opposition to the quota proposed in Section 3.1 of Addendum VI.

The Tribe can, however, provide certain general comments concerning quotas. Higher quotas generally benefit the Tribe because they allow for greater harvests by our citizens. This in turn can generate wealth for tribal households and increase opportunities for participation in the cultural practice of eel harvesting. Therefore, in principle, the Tribe favors higher harvest quotas for American eel.

The Tribe's support for higher quotas is conditioned on the eel population being robust enough to remain viable following a large harvest in any given year. Consequently, any quota must be based on best available science as it relates the sustainability of the population. Without having closely reviewed the data and models that the ASMFC relied on in developing the proposed quota for Addendum VI, the Tribe does not know whether best available science supports the quota. We would note, however, that the analysis set forth in Addendum VI does not clearly explain the relationship between: the 2023 Assessment and Peer Review Reports' conclusion that the "American eel stock is depleted and has likely been experiencing overfishing in the last few decades," the findings on glass eel capture since 2022, and the proposal to maintain the status quo with respect to the harvest quota. Instead, Addendum VI seems to simply state the Assessment and Peer Review Reports' conclusion, describe the data on glass eel capture since 2022, and then propose the quota without explanation of why the ASMFC determined that the quota was suitable based on the available information.

The Tribe requests additional explanation from the ASMFC as to how, based on the Assessment and Peer Review Reports' conclusion and the glass eel capture data, it reached its determination that the proposed quota was proper.

D. The ASMFC should adopt Option 2 for the quota timeline, thereby ensuring a full review of the quota prior to 2028.

Per Section 3.2 of Addendum VI, the ASMFC is considering three "timeframe" options for Maine's glass eel quota: no sunset on the quota; three years; or three years, with the ability to extend via ASMFC Board action. The Tribe recommends that the ASMFC adopt Option 2, the three year timeframe, requiring the ASMFC Board to formally establish a new quota prior to the 2028 fishing

year. The Tribe prefers Option 2 because it encourages the ASMFC to embrace adaptive management principles. Under Option 2, the ASMFC will undertake a full review of the quota adopted through Addendum VI in three years, which will presumably allow the ASMFC to make any necessary adjustments based on changed conditions. Furthermore, a full review presents an opportunity for engagement and coordination between the Tribe and the ASMFC, as discussed above. Under Options 1 and 3, there is less urgency for the ASMFC to assess the effectiveness of the Addendum VI quota. This creates a risk of complacency or stagnation with respect to eel management. For these reasons, the ASMFC should select timeline Option 2.

3. Conclusion

The Tribe appreciates the ASMFC's consideration of these comments. We reiterate that the Tribe is interested in developing a more collaborative relationship with the ASMFC and look forward to further discussions with the ASMFC to advance that goal. If you have any questions or concerns, please contact Mr. Corey Hinton at mchinton@dmwlaw.com or (207) 771-9238.

Sincerely,

/s/ Pos Bassett
Pos Bassett
Chief
Pleasant Point Tribal Government

/s/ William Nicholas
William Nicholas
Chief
Indian Township Tribal Government

New England Fishermen's Stewardship Association

500 Southborough Dr. Suite 204

South Portland, ME 04106

March 20, 2024

Caitin Starks, Senior FMP Coordinator

Atlantic States Marine Fisheries Commission

1050 North Highland Street, Suite 200A-N

Arlington, VA 22201

In regard to Draft Addendum VI to the Interstate Fishery management Plan for American Eels, the New England Fishermen's Stewardship Association (NEFSA) strongly urges you to accept *Option 1, Status quo* with no sunset. The Maine Department of Marine Resources has done a phenomenal job at managing the elver resource in taking precautionary steps to ensure future sustainability of the stock.

NEFSA officially launched in May of 2023 to advocate for fishermen from all different fisheries with the goal of protecting and preserving their heritage, marine resources, and the communities they support. Currently with over 800 active members (including many elver fishermen), NEFSA is the fastest growing fishing Association in New England. NEFSA's mission statement reads, "NEFSA is an alliance of the wild harvesters of the waters off of New England, dedicated to educating the public about how best to manage our seafood resources through sound science and best practices at conservation used by fishermen, with a view toward economic well-being, ecosystem sustainability and US food security."

The Maine Elver Fishery has grown to be the state's second-most valuable fishery, earning over twenty million dollars and landing 9,429 pounds in 2022. The elver fishery is a vital contributor to Maine's economy and over 400 fishermen from across the state seek to fill their lucrative quotas each year. Elver fishermen have continued to sustainably harvest glass eels and have successfully managed the stock in collaboration with the Maine Department of Marine Resources for decades.

Again, NEFSA urges you to support *Option 1, Status quo* with no sunset.

Thank you,

Dustin W. Delano
Chief Operating Officer
New England Fishermen's Stewardship Association

American Eel Board,

In regards to the New Addendum VI Time frame Maine Glass Eel Quota.
We as fishermen would choose Option 1 No Sunset

Print	Sign
MICHAEL T. KLINGERMAN	
Mark Lurvey	
Roger A Ranco II	
JAMES CARD	
Jeremy Card	
Jessica Card	
Leslie RANCO	
Justin Ranco	
BAXter Jones II	
Roger Ranco III	
Frank White	
Perri# CHAD	
GEORGE FORNI	
William Sheldon	
Lisa Somes	
Wayne Somes	
Greg Ring	
MARK PIPER	
Roy Whalen Jr.	
Roy whalen III	
Celeste whalen	

Caitlin Starks
Senior FMP Coordinator
Atlantic State Marine Fisheries Commission
1050 North Highland St, Suite 200A-N
Arlington, VA 22201

Glass Eel Draft Addendum

In respect to Addendum VI, my family (3 license holders) would prefer Option 1, No Sunset. Maine's uniqueness, our conservation methods, and willingness to work with the ASMFC are the reasons why.

Maine has over 6000 streams, 200 rivers and only 425 licensed fisherman. A majority of these streams are not fished. By the time the elvers are running their best in the streams we do fish, our quota has already been filled. Also, Maine and NGO's have added over 20,000 acres of habitat through dam removals and fish passage to our vast tributaries. More plans are in the future as several big river systems in the state are being examined.

Maine's elver fisherman have been practicing successful conservation methods since the early 1990's. An individual could fish 5 nets in the early 90's, it was reduced to 2 nets in 1999. Also, the no fishing of the middle 1/3rd of a river was implemented. More recently, a swipe card system and individual quota was put into place stopping illegal fishing, and allowing for real time data.

Our fishery has adopted several changes on behalf of the ASMFC, and has complied with every law. Our willingness to work with various groups and our continued conservation methods shows how committed we are to having a sustainable fishery.

When all this is considered you have a thriving and sustainable fishery. We feel we have earned this by practicing sound conservation methods. When discussing glass eels in the future please consider Maine and its uniqueness accordingly.

Sincerely,

Gregory M. Blackler
Gregory S. Blackler
Joseph B. Blackler

Caitlin Starks

From: Travis Atwood <wadeatwood420@yahoo.com>
Sent: Saturday, March 23, 2024 5:57 PM
To: Comments
Subject: [External] GLASS EEL DRAFT ADDENDUM VI

Categories: Replied but not sorted

HI ASMFC Members,
My name is Travis Atwood a Maine elver fishermen of over 30 years experience in the industry and I am also a co-director of the Maine Elver Fishermen's Association.I have been very involved with the elver fishery with lots of fishing experiences and lobbying for our harvesters and myself.I have seen alot of changes over the years for both conservation efforts and laws to protect the specie and be able to harvest them without causing deplation of elvers themselves.I take great care in my fishery as to work with you and our state to make sure we are all on the same page and to point out important things to you and our state working with our commissioner.I am also a member of a team that rises my elvers at a farm in Jefferson,Maine called American Unigi.So I get to actually see my elvers being farmed to harvest sizes.Our Farm has the capacity of 600 pounds of elvers to rise.200 Auqaculture quota and 400 State of Maine glass eel quota.Just want you all to know that there are people like myself that are involved in many aspects of the industry all along protecting it.I also communicate with the guy that is doing our state of Maine eel life cycle surveys that is presented to your committee just to educate myself on all areas to make and or back good decisions in maines elver fishing industry.With that said I hope that in the future you guys(ASMFC)takes consideration that elver fishermen like myself are very much involved and would love to work with your committee and hope you guys consider our options to help us all protect eels themselves.And so I would like you guys to consider Option 1 because it gives us and your committee time to make good decisions with the added time as to gather data on all aspects of the glass eel industry.Thank you all very much for letting me write your committee my opinion on the subject matter.Hope to some day meet some of you in person and just chat and pick eachothers brains as well as to being respectful of eachothers opinions aswell.

THANK YOU ALL,
Travis Atwood

Caitlin Starks

From: smgeidel@tds.net
Sent: Thursday, March 21, 2024 6:05 PM
To: Comments
Subject: [External] [NoTLS] Glass Eel Draft AddendumVI

Categories: Replied but not sorted

Hello we are putting in our comments for the Glass Eel Draft Addendum VI, My husband and i both fish and we would like it to stay status Quo so Option 1 is what we both are wanting. so please put this in for 2 of us. Thank You for your time.

Lance and Shelly Geidel

Caitlin Starks

From: Jamie Robbins <5086paint@gmail.com>
Sent: Thursday, March 21, 2024 2:21 PM
To: Caitlin Starks
Subject: [External] Addendum VI

To whom it may concern,

I'm writing in regards to Addendum VI. My name is Jamie Robbins, I'm a maine elver fisherman. I support option 1: No sunset. We have a very well managed elver fishery in maine . I have seen many changes since 2012 to our fishery, All very positive. From quotas, swipe cards for live data. Dams being removed to open up miles of river. This has all paid off for Maines elver fishery . We see it on the banks, most fisherman are done in less than a month . This leaves the rivers wide open for most of the elver run . I have witnessed incredible amounts of elvers migrating up the rivers in the last few years . All thanks to the excellent management of the fishery .

Sincerely

Jamie Robbins
16 Russell lane
Warren , Maine 04864
207-273-6116

Caitlin Starks

From: alexis rogers <lxsrgrs18@gmail.com>
Sent: Wednesday, March 20, 2024 6:29 PM
To: Comments
Subject: [External] Glass eel draft addendum VI

Categories: Replied but not sorted

To Whom it may Concern,

I have been elver fishing since the early 1990's, and I feel that decreasing the quota is unnecessary , if anything, I feel we should be able to get more
quota. The State of Maine has substantial conservation laws in effect to protect the elvers. There are three major rivers in Maine,The Penobscot,
The Kennebec, and The Piscataquis, that never get fished because we are quota'd long before it is time to fish these rivers. Therefore I don't believe there is
any reasons to change the quota as it stands.

Thank you,

Jeff W. Clark

Caitlin Starks

From: billy Johnson <billyj7015@gmail.com>
Sent: Monday, March 18, 2024 2:09 PM
To: Comments
Subject: [External] Re:

On Mon, Mar 18, 2024, 11:35 AM billy Johnson <billyj7015@gmail.com> wrote:

> To whom it may concern my feelings on the Maine elver fishery quota Is as follows #1 . The elvers are very plentiful here in Maine when the majority of the 9688lbs are caught in about 3 weeks an even after we are done they are in epic numbers migragting an that's just here in Maine. As you know they migrate from sargasso sea all the way to newfoundland an only Maine an South Carolina fish that life stage.. .#2 I feel that after all the work that had been done here the quota should be set back up to 18000lbs an it wouldn't hurt the biomass of population considering again there's only Maine with 425 fisherman an a small number of fisherman in South Carolina... I also feel that states having a vote on how we manage this fishery that have no elver fishery in their own state is kinda a conflict of interest ..because if we don't vote for their fishery then why would they.be in favor of ours ... maybe seprate the life stages also.. ..
>
> Sincerely
>
> Fred .b johnson III

Caitlin Starks

From: Timothy Bunker <tbunk360@gmail.com>
Sent: Sunday, March 17, 2024 1:21 PM
To: Comments
Subject: [External] Glass Eel Draft Addendum VI

Categories: Replied but not sorted

Please support option 1. Our fishery is well regulated and has very few problems of any kind for law enforcement. Daily catch reporting and individual catch quotas, ensure a healthy future for the biomass. As the second most valuable fishery in our state, many families have come to rely heavily on the income generated by this fishery. It is a stable, healthy fishery and resource and the harvest should continue at current levels or be increased.

Caitlin Starks

From: G2W2
Sent: Wednesday, February 28, 2024 2:30 PM
To: Comments
Subject: FW: [External] Draft Addendum VI Elvers

From: angela young <ayoung1972.40@gmail.com>
Sent: Tuesday, February 27, 2024 2:52 PM
To: G2W2 <G2W2@asmfc.org>
Subject: [External] Draft Addendum VI Elvers

By shutting down the pigmented eels from Maine to Florida and Silver eels. And cutting back the yellow eels to 2500 in Maine. We are now seeing the results on glass eels. They are the thickest we have seen them. Guy with 30 pounds and under. Are catching their quota in two to three nights. Guys above that may take a week or a little more. We have a two month season from March 22 to June 7. Give us a 25% credit from dam removal and opening up habitat. Is only going to amount to maybe two extra nights of fishing.

Sent from Gmail Mobile

Caitlin Starks

From: Nelson Sigelman <nelson.sigelman@gmail.com>
Sent: Thursday, February 22, 2024 12:56 PM
To: Comments
Subject: [External] Eel management

Categories: Replied but not sorted

ASMFC members:
Drastic reductions in the harvest of elvers are necessary to save this valuable species. I favor any measures that will reduce or end the harvest.

Published in "Martha's Vineyard Magazine," Nov. 17, 2022
And Now for the Eel Story
By Nelson Sigelman

An entry in a Pilgrim diary recorded one day after the English, who survived the brutal winter of their arrival and the Wampanoags agreed to a peace treaty, suggests that a fat, succulent eel has as much of a claim to the Thanksgiving holiday dinner table as a turkey.
Dated Friday, March 23, 1621, the entry appears in the Pilgrim journal known as Mourt's Relation. It describes how Tissquantum, who spoke English and acted as a mediator and translator between the English and Wampanoags, supplied the hungry Pilgrims with a delectable meal.
"Tisquantum went at noone to fish for Eels, at night he came home with as many as he could well lift in one hand, which our people were glad of, they were fat & sweet, he trod them out with his feet, and so caught them with his hands, without any other Instrument."
For centuries, the American eel, one of the most enduring mysteries in natural science, was part of the natural bounty that Native Americans in coastal communities and later the English relied on to survive often harsh living conditions.
Martha's Vineyard's first inhabitants, the Wampanoags, trapped eels in handmade baskets and considered them excellent eating. Quansoo, now the name of a private beach on the Chilmark side of Tisbury Great Pond, is Algonquin for "place where the long fish is caught."
Early English residents harvested eels found in the Island's brooks, ponds, and bays. They trapped them in the warmer months and used specially designed spears that they thrust through holes they made in the ice to catch dormant eels in the winter when fresh fish was hard to come by.
In a diary entry dated February 14, 1822, Jeremiah Pease of Edgartown provides evidence of their abundance in the winter months. He wrote that he and Allen Coffin, also of Edgartown, "Went eeling. Caught 52 dozen."
Their hands full of 624 slimy fish, it is unlikely that Pease and Coffin paused to consider the mystery of the eel's lifecycle. The fish were plentiful and easily caught — until they were not.

The Eel Question
The American eel (Anguilla rostrata) and its closely linked cousin, the European eel (Anguilla anguilla), are catadromous, meaning Atlantic eels spend most of their lives in freshwater or brackish tidal environments. They only return to the ocean to spawn and then die.
Over thousands of years, the origin of the eel and how and where it reproduces bedeviled a long list of thinkers and scientists. The Greek philosopher Aristotle thought eels sprang from the mud of river bottoms. And before he worked to unravel the mysteries of the human mind, in 1876, a nineteen-year-old German scientist named Sigmund Freud spent months in a small room in the Italian city of Trieste dissecting eels looking for reproductive organs. He never found them.
It took Johannes Schmidt, a determined Danish biologist, to answer the question of where eels breed. From 1904 to 1921, with a break for World War I when German U-boats made his study hazardous, Schmidt seined the ocean for floating eel larvae.
Working his way back from the largest to the smallest size larva he found, Schmidt tracked the source of the eels to the Sargasso Sea, a large portion of the western Atlantic Ocean east of the Bahamas and south of Bermuda.

Swedish journalist Patrik Svensson in "The Book of Eels" (Ecco), said having answered that question, Schmidt could still not explain how the masses of larvae in the western Atlantic sort themselves out, "...so that those individuals which belong to Anguilla anguilla ultimately find themselves in Europe, while those of Anguilla rostrate land on the shores of America and the West Indies."
Svensson wrote, "We think we know that all eels are hatched in the Sargasso Sea, since that's where the smallest examples of the willow leaf-like larvae have been found, but no one knows for certain why the eel insists on reproducing there and only there. No one knows for certain how it withstands the rigors of its long return journey, or how it navigates. It's thought all eels die shortly after breeding since no living eels have ever been found after breeding season, but then again, no mature eel, living or dead, has ever been observed at their supposed breeding ground. Put another way, no human has ever seen an eel in the Sargasso Sea. Nor can anyone fully comprehend the purpose of the eel's many metamorphoses. No one knows how long eels can live for."
It is all part of what zoologists call "the eel question."

The Good Years
Eels begin life as an egg with the odds of survival decidedly stacked against them. They hatch into leaf-shaped larvae (leptocephalus). Through a combination of natural forces and propulsion, the larvae slowly make their way to coastal waters in Europe and North America. Those who survive their ocean journey transform into small, translucent glass eels several inches in length, also known as elvers.
In the spring, elvers migrate in from the sea and enter brooks, streams, and ponds to feed and grow. Adult eels, known as yellow eels for their slight yellowish tint, may remain in their home waterbody for up to twenty years before they respond to a natural signal that it is time to breed.
Mature "silver" eels, called neshaw by the Wampanoags, undergo a physical transformation in preparation for their return ocean migration. Their eyes and pectoral fins enlarge, and they become black on the top and silver on the bottom.
In the 1800s Island fishermen used baited eel pots, bottle-shaped containers with a funnel mouth and closed at one end, to harvest eels. The traps were laboriously constructed entirely of wood slats bound by lacing made from split pine roots. In later years, these were replaced with traps constructed of wire mesh.
In "The Eel Fishery of Martha's Vineyard," published February 1995 in the Dukes County Intelligencer, Edgartown native, Clyde L. Mckenzie, Jr., a longtime federal fishery research biologist, described the scope of the fishing activity in the last century.
"The major potting areas were Tisbury and Edgartown Great Ponds. In Tisbury Great Pond, Eric Cottle and Ben Mayhew worked together and set out 50 pots using a small outboard boat. They set their pots on the Chilmark side of the pond, while Norman Benson and his son, Franklin, set 36 pots on the West Tisbury side. Franklin also set pots in the Lagoon and James Pond."
Manuel Ferreira and Winthrop "Sonny" Norton set 50 to 75 pots in Edgartown Great Pond. "Manuel, along with Joe and Gene Benefit, also set pots in Sengekontacket Pond, while 'Wid' Norton and others set theirs in the harbor off North Water Street, as well as in Katama Bay, and in Eel, Little Eel and Caleb's Ponds."
Because silver eels do not eat but live off their fat reserves on their return journey to the Sargasso Sea, fishermen devised a method to intercept the eels in the great ponds as they sought an exit to the sea. Beach pots were staked down in a trench just off the shoreline along the eel's perceived route. Wings at the pot entrance helped direct the eels into the pot.
Mr. Mackenzie said that when the ponds were closed the "neshaws swam back and forth in a frenzy along the barrier beaches, seeking an opening to the sea … occasionally during a southerly storm that washed the ocean over the beach, they were able to slither across the wet sand into open water."
The fishermen stored their captured eels in submerged bins known as "keeper cars" before they transported them to market. Because eels did not survive if confined for any length of time in warm water, commercial trap fishing occurred primarily in September and October.
In the early 1900s, eels were packed in ice and shipped off in barrels and boxes. Later, mainland buyers sent tank trucks to the Island to pick up the catch. MacKenzie said that each Vineyard crew "could sell as many as 5000 to 7000 pounds of eels in the good years.
Fishing for eels was part of a natural cycle for Islanders who were reliant on the sea for a livelihood. It was hard work, but it could be profitable.
In the 1930s, Edwin Athearn, encouraged by Norman Benson, who sold him some pots, eeled in Lagoon Pond off Oklahoma Avenue.
Athearn told MacKenzie that just after Labor Day, he set out twelve pots. Early the next morning, he went out to tend them. "He couldn't believe it," MacKenzie said. "Hauling each pot was like lifting a bag of cement. Each pot was completely jammed with eels."

Just before Christmas, a dealer from East Boston arrived in a tank truck to the Vineyard. Athearn recalled that he was paid more than $1000. “A lot of money in the depression,’ Athearn said. “It was probably the most profitable fishing I ever did.”
Once the ponds and bays froze, and the eels sought refuge in the eelgrass and mud where they lay dormant over the winter, the only way to catch them was to spear them through holes in the ice. This required stamina, skill, and luck.
A report in a 1909 issue of the Vineyard Gazette described the pluck of Mr. Thomas Smith, “of the Head of the Pond,” who, after spearing eels through the ice, lifted his back basket full of eels and started for shore.
“Now the ice near the shore was rotten because of the many springs, and Mr. Smith, back basket and all, suddenly disappeared from view. Others who were out, saw the catastrophe and put for the shore, but were compelled to go roundabout because of the mush ice.”
“By the time they reached the shore, the old gentleman was discovered marching along for dry land, with the basket still on his back and someone hailed him that he had come pretty near getting drowned.”
“‘Well,’ says he, ‘I thought if I could hold my course I could drain the water,’ and out he walked as though it were an everyday occurrence.”
Eeling activity on Martha’s Vineyard began to wane after World War II as members of the generation that pursued eels and fishing as a way of life slowly began to disappear from the Vineyard landscape.
Speaking of the lifestyle that existed before the war, in 1967 Lawrence Jeffers of Edgartown told a Gazette columnist, “I fished for clams and quahaugs and scallops and eels. I remember when seventy or eighty or ninety boats would be out at once quahauging in Katama Bay. About all there was to do in those times was eeling and clamming.”

Got to Be Versatile
Chris Murphy of Chilmark was one of the last Island men to eel commercially. He got his start as a boy catching the eels his parents disturbed while digging for steamers in Tisbury Great Pond.
“I sold them to John Pachico — everyone called him ‘Long John,’ — at John’s Fish Market in Vineyard Haven,” Murphy said. “That was my first cash crop. He got me to skin the eels so he could sell the eel meat and deliver the heads with the skin attached so he could sell it for bass bait.”
Longtime Island fishermen provided guidance. “What I got from all the old guys that were mentors to me, Norman Benson, Dan Manter, and others, was that you’ve got to be versatile,” he said.
Married and with children, Murphy began seriously trapping eels in the sixties to augment his other fishing activities. “I did it for many years as a seasonal piece of my world,” he said.
He’d set his pots right after the first storm in September when conditions were right for potting and holding eels.
“It was my favorite fishery,” Murphy said. “It was low impact. I was doing it with a three-horse outboard. I’d keep a boat in two or three different ponds and just carry the outboard from one pond to the next. I’d start out at daylight in the morning and probably by the end of the day haul about two hundred pots.”
The eels were transported to the mainland by tanker truck a few weeks before Christmas and then shipped to European markets where eel was a traditional holiday dish.
After twenty-five years in the late nineties, Murphy stopped fishing for eels because there were few eels to catch.
“What happened to the eels, that’s a big question,” Murphy said.
Cooper Gilkes of Edgartown, another of the last men to commercially trap eels, learned how to make wire traps from the Island dean of eeling.
“Norman Benson showed me how to make them and I came home and made ‘em up … To really make it go you had to run a lot of traps. It was all seat of the pants. No GPS. None of that stuff. Pea soup fog, you were out there, two hundred pots … oh my God, I used to come home and my head would be splitting.”
It was the heyday of big stripers and Gilkes began selling eels to tackle shops for bait. Soon he was selling eels out of a corner of his house, which later grew to become Coop’s, the popular bait and tackle shop that bears his name.
Fishing, clamming, scalloping, and eeling — fishermen were linked to the season.
“In those days, you were a waterman. You worked on the water. You scalloped, you quahogged, you eeled, fluked, scup, sea bass; that was when the waterman was a true waterman, not your doctors and lawyers and carpenters buying a commercial license
Asked why he stopped, he said flatly: “No eels.”

We are losing it
American eel populations across their traditional habitats have plummeted. How bad is it? The Atlantic State Marine Fisheries Commission (ASMFC) doesn’t really know.

According to the ASMFC, “From a biological perspective, much is still unknown about the species. Information is limited about their abundance, status at all life stages, and habitat requirements ... The stock is at or near historically low levels due to a combination of historical overfishing, habitat loss, food web alterations, predation, turbine mortality, environmental changes, toxins and contaminants, and disease.”

Swedish journalist Patrik Svensson has a more dire take on the European eel: “According to most research reports, the situation today is more or less catastrophic. The eel is dying, and not just in the expected way, as the natural end to a long life full of changes. It’s becoming extinct. We are losing it.”

Eels cannot be bred successfully in captivity. As a result, Asian aquaculture farms depend on a supply of elvers to produce their adult stock for the commercial market.

Overfishing to satisfy the Asian demand is one significant factor in the depletion of Atlantic eel stocks. Having overfished the Pacific population of Japanese eels and no longer able to meet home demand, Asian buyers turned to Europe, where they cleaned out the fishery of adult eels and elvers. Export is now tightly regulated but fuels a lucrative black market. They then turned to the U.S.

Brad Chase, a Division of Marine Fisheries (DMF) senior marine fisheries biologist and diadromous fish project leader, said in response to demand from Japan in the mid-seventies, there was a big commercial push to harvest eels. The price for yellow eels went from fifty cents a pound to $2. One pound of elvers could fetch more than $2,000.

Only South Carolina and Maine now allow the sale of elvers. The fishery is tightly controlled but poaching is a constant threat.

“We had some large catches in the mid and late-seventies, into the early eighties, and then the catches just crashed,” Chase said.

“And we haven’t recovered from that even though we now have a lot more conservation measures in place for eels, and there are a lot fewer people trying to catch them.”

Chase said, “I’ve been involved with a stock assessment, and the assessment wasn’t able to identify why we’re at historically low levels, not just in Massachusetts but along the east coast.”

Asked what Islanders could do to help eels, Chase said, “Isolate a few locations on the Vineyard where you might be able to increase their passage to nursery habitats.”

Chase added, “One thing I’ve learned is that dam removals are really good for American eels. Eels do not do great going against velocities. Even low dams require them to use energy and aggregate where they’re vulnerable to predation.”

In the past fifteen years, DMF has been installing “eel ramps” that act like fish ladders and have provided passage for eels where dams block access, Chase said.

Today, the average American is most likely to encounter eel in a tackle shop, where it is sold live and is prime bait for striped bass, or at a sushi bar where unagi, a slice of grilled eel on rice, is sold for top dollar.

DMF regulations currently allow recreational fishermen to take 25 eels per day a minimum of nine inches in length. Commercial fishermen have no harvest limit but there is a state quota set by the ASMFC.

Chase said many fishermen trap eels to use for striped bass bait. “In just one or two human generations we’ve gotten away from using them as food,” he said.

Sara Rademaker, an enterprising woman in Maine, wants to put locally raised eel back on American dinner plates. Rademaker is the founder of American Unagi, the only land-based eel aquaculture farm in the United States.

Currently, most of Maine's glass eels are exported to Asia to be grown and then imported back to the US. American Unagi has a license to harvest two hundred pounds of glass eels annually. The company raises eels in tanks to marketable size. In addition to selling live eels to high-end chefs in nearby cities, the company sells live, smoked, and frozen eels online.

A new generation of Islanders is turning to the sea to farm oysters, kelp, quahogs, even bay scallops. Might eels be next? Chase said he’s met the owners of American Unagi and would like to see them be successful. Their example may point the way for Massachusetts aquaculturists as well, he said

“It would be good to see a little more appreciation for eel as food than just for bait. It might help the push for sustainable management and restoration efforts,” he said. “Smoked eel can be fantastic.”

Kristopher Kuhn Chairman
American Eel Board Members
Atlantic State Marine Fisheries Commission
1050 North Highland St, Suite 200A-N
Arlington, VA 22201

April 2024

RE: Glass Eel Draft Addendum

In regards to the Addendum VI. The Maine Elver Fisherman Association indorses Option 1, No Sunset. The State of Maine has implemented many new laws, and management actions sense 2012. They have implement a swipe cards to get real time data and stopped people from fishing illegally.

They have changed how Eel buyers, ship Glass Eels for export. A marine patrol officer has to be present when the buyer is packing the elvers. A Maine Marine Warden tapes up the box to show that it was approved be the Marine Patrol. If that seal is broken USFWS know that the shipment has been tampered with, there are other controls use to insure this is the best run fishery in the state of Maine.

With the fisherman being on an individual quota, they don't fish most river and brook systems in Maine. There are 425 licensed fishermen, with over 6000 stream and over 200 rivers. Most of the fishermen had caught their quota before the glass eels start running in a lot of the river in the months of May and June. None of the hundreds of miles brooks get fished. The Maine Glass Eel fishermen have done everything that was asked of them by ASMFC & the State of Maine.

The State of Maine, & NGOs has opening up over 20000, acres of habit. Thought dam removals Fish passage. Addendums IV and V has conservation measures in them, we hope these measures are also considered in Addendum VI.

We ask at this time that the Eel Management Board grant Maines Glass Eel Fisherman the Conservative quote out lined in Addendum III IV &V at this time, please see attach habit opening sheet and previous comments Maine. This would be Setting the new quote to 11749 Pounds for the year 2024 and beyond for Maines Glass Eel Fishermen

Sincerely on behave of the Maine Elver Fishermen's Association

Darrell Young
Founder & Executive Director

Maine Elver Fishermen Association ,PO Box 35,Ellsworth ME,04605 207-460-3677

Selected Summary of Coastal River and Stream Restoration Activities
2012-2023

Restoration Activity	Waterway	River Miles	Lake Acres	Year
Fishway	Flander's Stream	9	534	2012
Patten Stream Fishway	Union River Bay	20	1,200	2016
Wight's Pond Fishway	Bagaduce River		191	2017
Pierce Pond Fishway	Bagaduce River		110	2017
Cooper's Mill Dam Removal	Sheepscot River	20	700	2018
Dam Removal	Smelt Brook, Frenchman Bay	1.5		2018
Dam Removal	Branch Lake Stream, Union River	5		2019
Head tide dam passage	Sheepscot River	95	3,377	2019
Saccarappa Dam removal	Presumpscot River	5		2019
Fishway	Togus Pond		648	2019
Fishway Reconstruction	Pennamaquan River	2.5		2020
Fish passage/dam removal	China Lake	6.8	3,850	2020
Walker Pond Fishway	Bagaduce River		692	2020
Culvert removal	Jellison Brook, Union River	12		2020
Fish passage improvement	Cobbosseecontee River		20	2020
Frost Pond bridge	Bagaduce River	5	144	2021
Fishway construction	Denny's River		10,481	2022
Walton's Mill Dam removal	Temple Stream	52		2022
Seal Cove Pond Fishways	Blue Hill Bay		299	2022
Milltown Dam Removal	Schoodic River	10		2023
Branch Pond Outlet Dam	Sheepscot River		325	2023
Baskahegan Lake	Penobscot River	137	9,000	2023
	Totals:	**380.8**	**31,571**	

Stock Enhancement Activity Summary

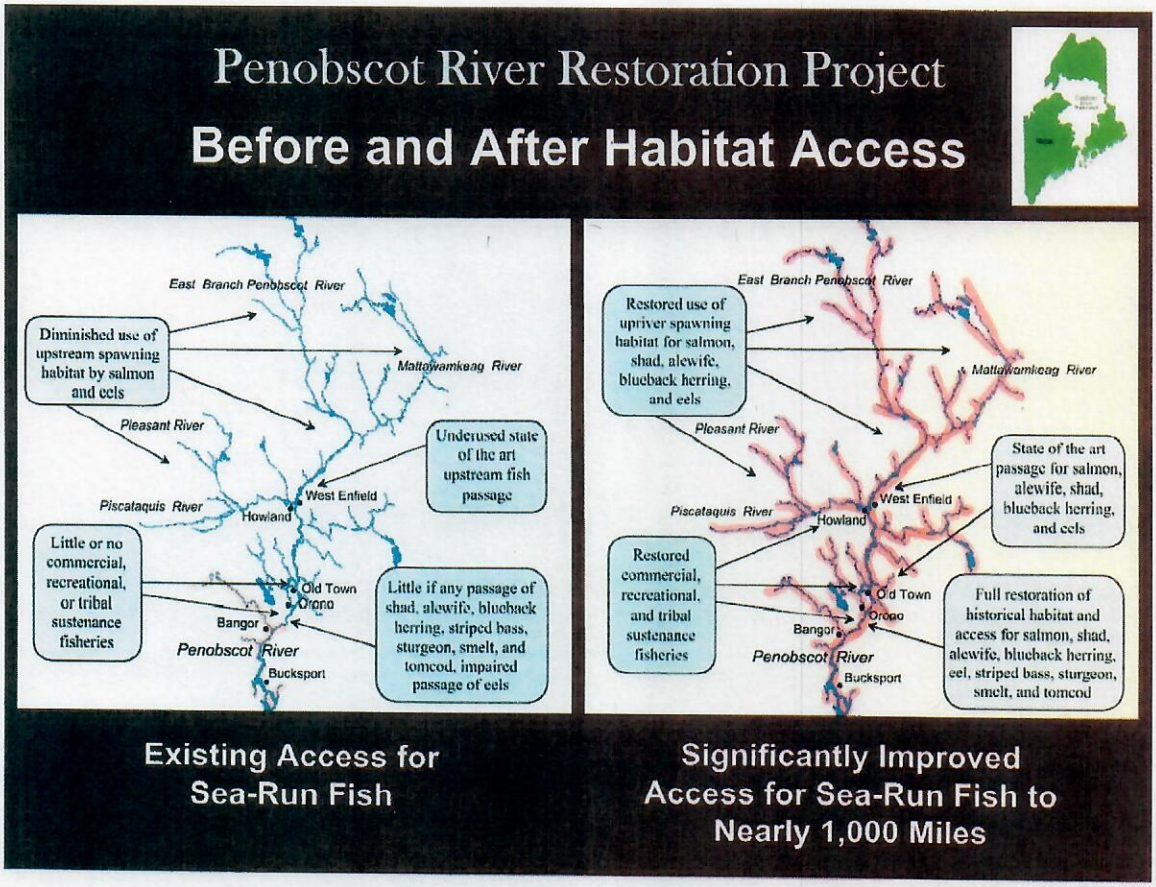
From 2012 to 2016 six major restoration and habitat enhancement activities were completed on the Lower Penobscot River and its major tributaries (the Stillwater and Piscataquis Rivers) as part of the Penobscot River Restoration Project. Collectively these projects directly reconnected over 1,000 river miles and nearly 75% of the area of the Penobscot River Watershed (*Strategic Plan for the Restoration of Diadromous Fishes to the Penobscot River* Maine resource agencies, March 2008*)* and are the result of major investments from State, Federal, and Tribal governments and nongovernmental organizations.

Summary of Major Activities of the Penobscot River Restoration Project:

Activity	Year	Passage Direction
Veazie Dam Removal	2013	up/down
Great Works Dam Removal	2012	up/down
Howland Bypass	2015	up/down
Milford fish lift	2014	up
Orono Dam eel passage	2014	up/down
Stillwater dam eel passage	2016	up/down

These mainstem passage improvements reconnected a watershed drained by over 1,600 miles of river and streams, and over 600 lakes with 254,600 acres of surface area (*Strategic Plan for the Restoration of Diadromous Fishes to the Penobscot River* Maine resource agencies, March 2008*)*.

Supporting work throughout the watershed continues to reconnect smaller tributaries and sub-drainages and is guided and funded by State, Federal, and Tribal governments and nongovernmental organizations.



Map by the Natural Resource Council of Maine:
https://www.nrcm.org/wp-content/uploads/2018/11/HabitatAccessbeforeandafterPRRP.pdf

Sources:

https://webapps2.cgis-solutions.com/MaineStreamViewer/#

https://www.asf.ca/our-work/restoration

https://mainerivers.org/projects/china-lake-outlet-stream-restoration/

https://www.atlanticfishhabitat.org/project/the-sheepscot-river-barrier-removal-whitefield-and-alna-maine/

https://www.mcht.org/conservation-work/initiative/seal-cove-pond-fishways/

https://www.mainesalmonrivers.org/post/fish-passage-dennys-river

https://www.bangordailynews.com/2012/10/01/news/sullivan-culvert-project-aims-to-ease-erosion-fish-access-issues-2/

https://www.toguspond.org/dam

https://70ce26.p3cdn1.secureserver.net/wp-content/uploads/2012/10/ACFHP-project-factsheet-FY15-ME-1.pdf

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https://frenchmanbay.org/jellison-brook/

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https://www.maine.gov/dmr/news/wed-12142022-1200-148-million-national-oceanic-and-atmospheric-administration-grant-bolsters

https://www.fws.gov/story/rallying-round-presumpscot

https://mainerivers.org/projects/china-lake-outlet-stream-restoration/

https://www.fishermensvoice.com/archives/201711AlewifeRestorationProjectPartII.html

https://penobscotbaypress.com/news/2020/apr/23/sedgwick-may-partner-up-to-bring-back-alewife-runs/

https://www.mainebiz.biz/article/dam-upgrade-brings-cobbosseecontee-watershed-closer-to-commercial-fishing

https://atlanticsalmonrestoration.org/projects/walker-pond-bagaduce-river-restoration-project\

September 29, 2023

American Eel Board
Chairman Phillip Edwards III
Atlantic States Marine Fisheries Commission
1050 N. Highland Street, Suite 200 A-N
Arlington, VA 22201

RE: Additional information for the ASMFC concerning stock enhancement and quota increase for Maine's Glass Eel fishery under Addendum IV to the Interstate Fishery Management Plan for American Eel.

Commissioners,

In July, we provided the rationale for reviewing and increasing the glass eel quota for fishermen in Maine waters. At that time, we provided a summary of restoration activities solely on the main stem of the Penobscot River completed since 2012. Included here is a selected summary of fish passage improvements that have taken place on other waterways in Maine since 2012. Please note, that there have been many other fish passage improvements in the region during this time that are not shown in this table. We plan on submitting further summaries that will help quantify these projects.

The summary attached includes dam removals, fishway constructions, and passage improvements that have impacted 380 miles of river and stream and over 35,000 lake acres. American eels, at various stages of their life cycle, benefit from these projects.

Thank you for reviewing this information and for continuing to consider our request.

On behalf of the Elver Fisherman Association of Maine,

Darrell Young

Darrell Young
President, Maine Elver Fishermen's Association

Atlantic States Marine Fisheries Commission

1050 N. Highland Street • Suite 200A-N • Arlington, VA 22201
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MEMORANDUM

TO: **American Eel Management Board**

FROM: **Caitlin Starks, Senior FMP Coordinator**

DATE: **April 22, 2024**

SUBJECT: **Public Comment on Draft Addendum VII to the American Eel Fishery Management Plan**

The following pages represent a draft summary of all public comments received by ASMFC on American Eel Draft Addendum VII as of 11:59 PM (EST) on March 24, 2024 (closing deadline).

Comment totals for the Draft Addendum are provided in the table below, followed by summaries of the state public hearings, and written comments sent by organizations and individuals. A total of 10 written comments were received. These included 1 letter from an organization, and the remainder from individual industry stakeholders and concerned citizens. Six public hearings were held; four were virtual, two were in person, and one was hybrid. The total public attendance across the six hearings was 37 people, though some individuals attended multiple public hearings. A total of 23 public comments were provided during the public hearings.

The following tables are provided to give the Board an overview of the support for each of the management options contained in Draft Addendum VII. Comment totals for comments provided during public hearings are organized by the hearing at which they were provided; some individuals attended hearings outside their home state. It should also be noted that some individuals provided comments at a public hearing and also submitted written comments, and these are counted separately in the tables below. Additional comments that did not indicate support for a particular option are included in the public hearing summaries and written comments. Prevailing themes from the comments are highlighted below, including general considerations and rationales for support or opposition.

Table 1. Total Written Comments Submitted to ASMFC

Total Comments Received	
Total Form Letters	0
Organization Letters	1
Individual Comments	9
Total Written Comments	**10**

Table 2. Public Hearing Attendance and Comments

Public Hearings	# Attendees	# Comments
NH *(Virtual)*	3	0
NY *(Virtual)*	2	0
NJ *(Virtual)*	8	3
MD *(In person)*	13	12
DE *(Hybrid)*	10	7
VA *(In person)*	1	1
Total	**37**	**23**

Table 3. Total Comments in Support of Each Option

	Public Hearings						Written Comments	Organization Letter	Total
Options	**NH**	**NY**	**NJ**	**MD**	**DE**	**VA**			
3.1-1 (SQ)				12	7		8	1	**28**
3.1-2									**0**
3.1-3									**0**
3.1-4									**0**
3.1-5						1			**1**
3.1.2-1 (SQ)					3				**3**
3.1.2-2									**0**
3.2-1				3	2		1		**6**
3.2-2				3					**3**
3.3-1 (SQ)					3				**3**
3.3-2									**0**
3.4-1 (SQ)					3				**3**
3.4-2									**0**
3.5-1 (SQ)					3				**3**
3.5-1									**0**

Prevailing themes from the public comments on Addendum VII are summarized below.

General Comments

- Changes to the yellow eel management program are unnecessary at this time.
- Many of those who favor the Status Quo coastwide cap said that if that is not an option and the Board has to make a change, the next preferred option is Option 5, for the coastwide cap of 716,497 pounds.
- There has been a drastic reduction in fishing effort since the 1980s due to market changes, farmed eels, availability of bait, and the price of fuel.
- The data for assessing eel abundance are unreliable and more effort should be put into collecting better data.
- Catch per unit effort (CPUE) data would be more reliable if they were collected by eel fishermen who have experience.

- Recruit abundance suggests the health of the population and reproductive success.
- Some expressed concerns about illegal catch of undersized eels and shipments to foreign aquaculture markets negatively impacting the yellow eel market.
- Eel catch would improve if horseshoe crab harvest were allowed in New Jersey.

Rationales for 3.1, Issue 1 Option 1. (Status Quo Coastwide Cap)

- The Maryland Watermen's Association members support Status Quo because yellow eel does not have an overfished or overfishing status, and changes in catch are controlled by the market. Maintaining the quota would allow for growth and better economic opportunities in the yellow eel industry, as well as preservation of the cultural and environmental heritage of the industry in Maryland.
- The yellow eel market in Virginia has disappeared in the last 15 years except for a limited recreational bait market, primarily for Cobia fishing during the summer months. The only eel buyer in the Northern Neck went out of business because the wholesale market for American Eel disappeared to nearly zero, mainly due to overseas aquaculture. There is no need to reduce the cap when they are not overfishing the species but rather are barely fishing it at all.
- The current cap is sufficient for limiting the fishery to sustainable levels. Lowering it would not allow for regrowth of the fishery if market conditions improve.
- A restrictive cap will affect Maryland crabbers, especially those who rely on eel as trotline bait.
- Crabbers are struggling to keep crab bait in their pots because of the overabundant population of eels eating their bait.
- There is not high demand for eel and fishing effort has been low so there is not a need to change the cap unless effort increases.
- Decreases in effort are also related to fewer fisherman having the ability to afford bait and fuel, and the inability to get good bait.
- The cap should stay the same until data from after COVID are included in the model.

Rationales for 3.2, Option 1 (Three Years before Updating Cap)

- The cap should be evaluated again in three years rather than five, because it is likely that changes in the indices would result improved catch recommendations.

Rationales for 3.4, Option 1 (Status Quo CPUE Data Collection Requirements)

- Several comments expressed concern about making the collection of harvester CPUE data optional because they see these data as important for assessing the stock and fishery.

American Eel Draft Addendum VII Public Hearings

New Jersey Webinar Hearing
February 20, 2024
8 Public Participants

Commissioners: Joe Cimino (NJ), Jeff Kaelin (NJ), Cheri Patterson (NH), Doug Grout (NH), Kris Kuhn (PA), Chris Wright (NOAA)

ASMFC & State Staff: Caitlin Starks (ASMFC), Kristen Anstead (ASMFC), Jeff Brust (NJ), Jen Pyle (NJ), Heather Corbett (NJ), Nichola Meserve (MA),

Hearing Overview

- One individual did not support the status quo option for the yellow eel coastwide cap.
- Comments were made on decreased landings being related to market factors and reduced effort rather than eel abundance.

Public Comment Summary

Tom Fote (NJ)

- Does not support status quo, but has no preference for other options
- It is concerning that management has not looked at how climate change will affect eel as a species. On the coast it takes 18 years for eels to grow up and start spawning. In that amount of time changes in the gulf stream could affect the overall population. We should be looking at this more broadly in terms of climate resiliency, rather than looking at it in a vacuum. In the last 70 years there have been shifts in lots of species. We should be ultra conservative because of the lack of information.

William Ruakete

- Based in New Jersey, and imports eels from other countries. Landings in 2015 and beyond were significantly down because of COVID. No one fished during COVID.

Charles Franklin

- The addendum should consider that the timing of eel migration could be changing due to climate change and that could impact the fishery independent survey results.

New Jersey Webinar Hearing Attendance		
First Name	**Last Name**	**Email Address**
Barry	Kratchman	barrykratchman@aol.com
Charles	Franklin	charlesfranklin8240@gmail.com
Cheri	Patterson	cheri.patterson@wildlife.nh.gov
Chris	Wright	chris.wright@noaa.gov
Douglas	Grout	groutnhfish@gmail.com
G	F	graciejfishing@gmail.com
Harry	Franklin	Hfranklin6473@gmail.com
Heather	Corbett	heather.corbett@dep.nj.gov
Jeff	Kaelin	jkaelin@lundsfish.com
Jeffrey	Brust	jeffrey.brust@dep.nj.gov
Jen	Pyle	Jennifer.pyle@dep.nj.gov
Joseph	Cimino	joseph.cimino@dep.nj.gov
Kris	Kuhn	kkuhn@pa.gov
Kristen	Anstead	kanstead@asmfc.org
Michael	Finlaw	radanna0230@gmail.com
Nichola	Meserve	nmeserve@gmail.com
Samuel	Veach	bveach1977@gmail.com
Tom	Fote	tfote@jcaa.org
William	Raukete	swraukete@comcast.net

American Eel Draft Addendum VII Public Hearings

New Hampshire Webinar Hearing

February 27, 2024

3 Public Participants

Commissioners: Cheri Patterson (NH), Doug Grout (NH), Kris Kuhn (PA), Chris Batsavage (NC)

ASMFC & State Staff: Caitlin Starks (ASMFC), Delayne Brown (NH), Renee Zobel (NH), Robert Atwood (NH), Todd Mathes (NC)

Hearing Overview

- No public comments provided

New Hampshire Webinar Hearing Attendance		
First Name	**Last Name**	**Email Address**
Cheri	Patterson	cheri.patterson@wildlife.nh.gov
Chris	Batsavage	chris.batsavage@deq.nc.gov
Christina	Gomez	gomez.christinaj@gmail.com
Debra	Abercrombie	debra_abercrombie@fws.gov
Delayne	Brown	delayne.t.brown@wildlife.nh.gov
Doug	Grout	groutnhfish@gmail.com
Jerry	Morgan	b8ntackle@aol.com
Kris	Kuhn	kkuhn@pa.gov
Renee	Zobel	Renee.Zobel@wildlife.nh.gov
Robert	Atwood	robert.atwood@wildlife.nh.gov
Todd	Mathes	todd.mathes@deq.nc.gov

American Eel Draft Addendum VII Public Hearings

New York Webinar Hearing

March 5, 2024

2 Public Participants

Commissioners: John Maniscalco (NY), Martin Gary (NY), Kris Kuhn (PA), Chris Wright (NOAA)

ASMFC & State Staff: Caitlin Starks (ASMFC), Caitlin Craig (NY), Jesse Hornstein (NY), Jessica Best (NY), Lt. James Cullen (MA), Todd Mathes (NC), Wes Eakin (NY)

Hearing Overview

- No public comments provided

New York Webinar Hearing Attendance		
First Name	**Last Name**	**Email Address**
Martin	Gary	martin.gary@dec.ny.gov
Bill	Chace	Sailorbill1954@gmail.com
Caitlin	Craig	Caitlin.craig@dec.ny.gov
Chris	Wright	chris.wright@noaa.gov
Jesse	Hornstein	jesse.hornstein@dec.ny.gov
Jessica	Best	jessica.best@dec.ny.gov
John	Maniscalco	john.maniscalco@dec.ny.gov
Kris	Kuhn	kkuhn@pa.gov
Lt. James	Cullen	james.cullen@mass.gov
Susan	Case	susanpcase@gmail.com
Todd	Mathes	todd.mathes@deq.nc.gov
Wes	Eakin	william.eakin@dec.ny.gov

American Eel Draft Addendum VII Public Hearings

Virginia Public Hearing
March 7, 2024
1 Public Participant

Commissioners: Pat Geer (VA), Shanna Madsen (VA)

ASMFC & State Staff: Caitlin Starks (ASMFC), Joshua McGilly (VA)

Hearing Overview

- One participant preferred Option 5 under Section 3.1, Issue 1
- There was a lot of discussion on issues in Virginia related to poaching and black market activity for glass eels, and the need for additional enforcement

Comment Summary

Timothy Rivera (Eel dealer)

- Supports Option 5 under Section 3.1, Issue 1
- Does not prefer one of the options under Section 3.2
- It isn't hard to catch eels, it is just hard to sell them. Has had to turn a lot of his catch loose because they won't sell.
- Thinks if the coastwide cap were 700 thousand pounds, the landings wouldn't get to that level. On the other end of the spectrum if it is set to 200 thousand pounds, he thinks people will just not report all of their landings to not go over it. He thinks enforcement won't figure it out because in 20 years he has never been checked by VMRC. Doesn't see them checking the eelers and the crabbers for compliance, but the oyster fishermen get checked all the time.
- There are also issues with reporting. Not everything is getting reported because there are a lot of cash deals that don't have a paper trail.
- There have to be baby eels to get yellow eels, so it doesn't make sense to reduce harvest of the yellow eels when we are not limiting the glass eel fisheries, or not stopping illegal harvest of glass eels.
- There are really only three eel buyers on this half of the country, and now the market for yellow eel is just for recreational fisheries. If the cobia season closes, there won't be any more eel catch.
- The eel fishery in Virginia is declining still, and he is the last buyer. If he gets out of it and there are no more buyers, the Virginia eel fishery will be done.

Draft Addendum VII to the American Eel Fishery Management Plan for Public Comment

Atlantic States Marine Fisheries Commission
March 7, 2024
Fort Monroe, Virginia

-- PLEASE PRINT CLEARLY --

Name	Company/Organization	City, State
Timothy Rivera	2-Barrels Baits	Gloucester Va.

American Eel Draft Addendum VII Public Hearings

Maryland Public Hearing
March 12, 2024
13 Public Participants

Commissioners: Lynn Fegley (VA), Russel Dize (VA)

ASMFC & State Staff: Caitlin Starks (ASMFC), Carrie Kennedy (MD), Alexis

Hearing Overview

- 12 attendees preferred Option 1, Status Quo, under section 3.1, Issue 1 (coastwide cap).
- 3 attendees stated that if there must be a reduction, then the preferred option is Option 5 for the coastwide cap.
- 3 attendees supported Section 3.2, Option 1 for the 3-year timeframe for yellow eel provisions, and 3 supported Option 2 for 5 years.
- Most attendees spoke about the lack of market being the cause of the decreased landings and effort in the yellow eel fishery. They do not believe these trends are related to reduced abundance of eels.
- Comments were also made about the impacts of invasive blue catfish on eel populations and the fishery (they will often get in traps and eat everything in there), as well as cormorants.

Comment Summary

Dale Shaner (MD)

- Supports coastwide cap Option 1, and timeframe Option 2 (5 years)
- Eel catch is down because there is no market, and fishery has reduced effort

Irving Chappelear (Fisherman)

- Supports status quo for the coastwide cap for the same reasons mentioned before

Troy Wilkins (Eel fisherman)

- Supports status quo, 5 years
- In my county there are several eelers and also clammers that dig bait. If we can't fish, they can't dig bait and it will affect them too.
- I think it will affect charter boats in the bay, because while the eel exports are down, a lot of their market is for striped bass and cobia bait, so it will affect those fishermen also.

Bill Legg (Fisherman)

- Supports status quo for the coastwide cap

Dean Price (Fisherman)

- Supports status quo for the coastwide cap

Tim Mortus (Vice President, Maryland Watermen's Association)

- Supports status quo for the coastwide cap

- Too much of this approach is based on landings. If you look at landings in early 1980s, when European eel was depleted, our landings went up. When they started landing European eel in Scandinavia, our landings went down.
- Also, exported eel from the US are growing in ponds all over the world now. Those eels, and what is coming from Scandinavia are filling the market. Our landings are low not because there are no eels but because they don't need our landings anymore if it is easier and cheaper for them to get European eel to Asia than American eel to Asia.
- There will be a time in the future when the market will need eel from the US, so we need the coastwide cap to stay the same for that day.

Robert T. Brown (President, Maryland Watermen's Association)

- Supports status quo for the coastwide cap
- We have a large volume of eels in the state of Maryland. There is too much emphasis on the harvest data. The harvest is down because the number of pots being set is down, there are fewer eelers, and the market. Marketing is the reason why we are not harvesting more eels. We can't move our product.
- We have been more conservative than anyone else out there, and we are getting no credit for being conservative. And you want to penalize us for not harvesting the eels because we don't have a market; that is a double penalty.
- Once the cap is reduced there is no room for anybody who wants to buy and sell eels.
- One of the problems is this eel is being micromanaged, and the ASMFC is missing the point that we aren't harvesting the eels.
- Maryland only does their survey in one spot on the Sassafras River, and there are three surveys up the in Hudson River. We need more survey locations in the Chesapeake Bay to get a better stock assessment. In the Sassafras there are a lot of blue catfish, and they are dominating our bay.
- The cormorants are a big problem. There are so many, and they are the best eelers there are. That needs to be addressed because they are interfering with our industry.

Victoria Brown (Treasurer, St. Mary's County Watermen's Association)

- Supports status quo for the coastwide cap, and timeframe Option 2 (5 years)
- I don't believe I_{TARGET} is a justified system or a proven scientific place for this data. It doesn't make sense that we are basing it off of catch history, reporting, and only one survey in the State of Maryland where there aren't any eels.
- When the market comes back, the watermen need to have a place to sell the eels

Barry Kratchman (Delaware Valley Fish Company)

- Supports status quo for the coastwide cap, but if the Board insists on a reduction at this time, then Option 5 might be a somewhat acceptable compromise. For the timeframe under 3.2 he supports Option 1 (3 years).
- There are too little data to assess the abundance. More recent data should be included in the model before using it.
- It is not just the market affecting fishery effort, but bait and fuel costs are all time highs.
- There could be a market in the future so we want to preserve that opportunity.
- The Board and Technical Committee should solicit participation from the industry to help with surveys, and folks would be willing to give their time. Fourteen surveys is not enough to estimate the abundance.

Steve Lay

- In favor of status quo for the coastwide cap, but if there has to be a change would support Option 5. Would also support Option 1 (3 years) under Section 3.2 because he believes more current data will help the watermen out.
- There is not data on the young of year eels that go to the Gulf of Mexico, the Caribbean and South America. You are asking the Chesapeake Bay watermen to take a hit and protect the eels, when you don't have any data from other areas.

Moochie Gilmer (Clammer)

- Supports status quo for the coastwide cap, but if there has to be a change would prefer Option 5 over the others. Supports Option 1 under Section 3.2 (3 years).
- His business is as a clammer, and he sells clams as bait to the eelers. From dealing with eelers for many years, he knows about the changes they made to be more conservative before anyone else, and so he supports status quo.

Russel Dize (Maryland Governer's Appointee)

- In favor of status quo for the coastwide cap
- Does not think we are going to get status quo, but thinks it is important for the Maryland watermen to stay together in support of status quo so it gives them a position to negotiate. When we go to negotiate with the other states, the northern states don't have fisheries, and will likely vote in a block. The southern states probably won't vote. So we will leave New York, New Jersey, Maryland, Delaware, PFRC, and Virginia, to decide what the option is going to be.
- There is too much emphasis on CPUE. It is not a good way to manage because the effort is already down.
- Haiti shipped 100 thousand pounds of glass eels to Hong Kong last year. Dominica shipped 10 thousand pounds. All of those eels are not going to come back. You are blaming the wrong people. It is not the yellow eel fishery to blame, it is the glass eel.

Draft Addendum VII to the American Eel Fishery Management Plan for Public Comment

Atlantic States Marine Fisheries Commission

~~March 11, 2024~~ March 12, 20204

Annapolis, Maryland

-- PLEASE PRINT CLEARLY --

Name	Company/Organization	City, State
FAYE FICKRILLS	DV FISH	MORRISTOWN, PA
Barry Kirkhman	DV Fish	Norristown PA
Dean Price	Fisherman	MD
Russell Dize	GOV APPT PRFC	MD
Troy Wilkins	Fisher MAN	Queen Anne, Md
Bill Legg	Fisherman	Queen Annes Co.
Steve LAY	WatermAN	Havre de Grace, Md.
Dale Abrams	waterman	CAlvert
Tim Marks	waterman	Cecil - Harford County
Emery Chiappelen	waterman	Benedict Md
Robert T Brown	MWA	Annapolis Md.
Virginia M Brown	MWA	St. Mary's
Mook Cully	Clamman	QA

American Eel Draft Addendum VII Public Hearings

Delaware Public Hearing

March 13, 2024

10 Public Participants (3 in person, 7 online)

Commissioners: John Clark (DE), Chris Wright (NOAA)

ASMFC & State Staff: Caitlin Starks (ASMFC), Kristen Anstead (ASMFC), Margaret Conroy (DNREC), Jordan Zimmerman (DNREC), Alexis Park (MD DNR), Todd Mathes (NC DMF)

Hearing Overview

- 7 attendees commented in favor of Option 1, Status Quo, under section 3.1, Issue 1 (coastwide cap).
    - 3 of these supported status quo for all of the options being considered.
- 2 attendees commented in favor of Option 1 under section 3.2 (three years).

Comment Summary

Robert Piascinski

- In favor of status quo for 3.1 on Issues 1 and 2.
- In favor of Option 1 (three years) for Section 3.2.
- Landings are down at least 65% from what we are allowed to catch. I don't see a reason for there to be any changes. If there is a problem, it is not caused by fishermen.

Joseph Smith

- Supports status quo for all of the options in the Addendum.
- The data are biased toward landings, and the landings are not good because the market is not good.

Larry Voss

- Supports status quo for all options.
- With no market, and the bait issue of not being able to use female horseshoe crab as bait, landings took a hit.
- If the market ever does come back, we will go over the current cap because there are more eels now than there have been in a long time.

Mike Stansky

- Supports status quo for all options.
- Biggest issues are the costs of bait, and lack of market. If we can't sell the eels, we are not going to catch them.
- Crabbers are complaining about eels eating all of the bait in their pots.

Bill Clayton

- Supports status quo.
- We have gone from over 279 fisherman to probably about 80 fishermen on the east coast in the past 10 years. The market for eel is not there. As an eel buyer, he has to limit the fishermen to

catch days to fish. There is only so much I can buy, and the distribution chain can take. When the fishing gets hard, he pays the guys very well for low catches, which shows up in the catch effort as low CPUE.

- For eel it is primarily for the bait market now. The bait market runs when the kids are out of school, and it is tied intricately to striped bass and cobia quotas.
- Because we did not have a hard quota, he started importing eel to stress off the domestic stock. Eel farms in the US are also taking away market share from fishermen.
- It is disconcerting to see the number of families that will be hurt by this if it is anything other than status quo.

Barry Kratchman (Delaware Valley Fish Company)

- The data suggests that the industry has really backed off the fishing of eel. We don't have the data for 2021, 2022, and 2023. There should be no change until we update the data.
- Supports status quo for the coastwide cap, but if something needs to be done, I would go with Option 5. The Cap of 716,497 pounds would not be good for the fishermen, but it shouldn't go lower than that.
- Supports Option 1 under 3.2. Thinks that it should be reevaluated in three years because if the abundance increases, and the market changes, the fishermen should be allowed to go back to fishing more.

Mitchell Feigenbaum

- Supports status quo for the coastwide cap. If not status quo, then the highest alternative cap is preferred.
- Appreciates the stock assessment and peer review being published so we are better informed.

Delaware Webinar Hearing Attendance		
First Name	**Last Name**	**Email Address**
Kristen	Anstead	kanstead@asmfc.org
John	Clark	john.clark@delaware.gov
Bill	Clayton	mbweels@gmail.com
Abraham	Feigenbaum	abefeig1@yahoo.com
Mitchell	Feigenbaum	feigen99@yahoo.com
Morgan	Krell	mkrell@inlandbays.org
Timothy	Larochelle	timl92@comcast.net
Todd	Mathes	todd.mathes@deq.nc.gov
Alexis	Park	alexis.park@maryland.gov
Karl	Waters	shaggy668@gmail.com
Chris	Wright	chris.wright@noaa.gov
Jordan	Zimmerman	jordan.zimmerman@delaware.gov
Barry	Kratchman	bk@classiccake.com

Draft Addendum VII to the American Eel Fishery Management Plan for Public Comment

Atlantic States Marine Fisheries Commission

March 13, 2024

Dover, DE

-- PLEASE PRINT CLEARLY –

Name	Company/Organization	City, State
Joseph Smith	commercial waterman finfish council member	Townsend, DE
Margaret Conroy	DNREC	
Robert Pritschuski	Commercial waterman	Dover De
Mike STANSKY	commercial WATERMAN	Townsend De
Larry Voss	Commercial Waterman	Smyrna De 19977

ASMFC DRAFT ADDENDUM VII TO THE AMERICAN EEL INTERSTATE FISHERY MANAGEMENT PLAN.

 # high yellow eel abundance regime in 1974-1987

Starting from the seventies I have been involved in the eel industry, in this period, the eel industry was quite prominent, with North Carolina actively promoting eel fishing.

The fact that close to a hundred commercial fishermen were involved in eel fishing in North Carolina alone and in our Northern neighboring states in even larger numbers reflects the significance of the industry. We had fishermen with just a few eel traps to fishermen in Maryland using long lines exceeding 1,000 traps. The most productive eel fishermen lived like a long-distance truck driver together with his crew following the eel migration they spared no expenses, supported by an on-land person who's only job it is was to collect from a far a distance the RIGHT bait needed their CPU was in a different class altogether with as much as 5x more productive per unit effort.

There were approximately 8 eel buyer / exporters competing and there must have been over 40,000 active eel traps spanning from Maine to Florida, it underscores the scale of eel harvesting along the East Coast during that time.

 # a low regime in 1988-1999

The fluctuating dynamics in the market, coupled with issues such as fishermen being put on hold played a significant role in the decline of interest among fishermen.

A drastic reduction of around 80% in the total number of commercial fishermen engaged in eel fishing compared to the seventies and early eighties reflects the significant impact of these challenges. Most decided to leave the commercial fishing industry altogether due to the uncertainties and difficulties.

The decrease in the number of active eel traps on the East Coast went from over 40,000 to approximately 15,000 and with an eel industry reduced to only three eel buyers / exporters, further emphasizes the challenges and changes in the industry during that time.

 # even lower regime in 2000-2020.

A depressed market resulted in consolidation with only one remaining buyer / exporter left has had with the exception of the last few years, implications for eel prices, which remained stagnant at mid-nineties levels for the most part of these two decades, add COVID into this equation we see an extreme fishing effort decline.

2.4.3 Catch per Unit Effort

CPUE can be used as an index to estimate relative abundance for a population.

Even first-class eel fishermen have been humbled often, fishing with eel traps is an art that takes skills acquired over time. CPUE eel data is by default arbitrary as it is fundamentally compromised as it depends on out-of-control factors. Next to the latter there is a significant difference between commercial fishermen active in eel fishing and an eel fisherman. An eel fisherman CPU is in a different class, with as much as 5x more productive CPU, who, what and where are you measuring makes a world of difference.

Proof of a healthy eel population

The public consent is that eels are overexploited, however only the USA and Canada have an eel habitat territory that can sustain a large eel population. The Caribbean eel habitat is very limited, consequence 99.9% of their baby eel recruitment couldn't survive even if no baby eel fishery existed. Regardless of their baby eel fishing activities they still have elvers coming from the ocean *(no market value, therefore home free as far as the fishery concerns),* going upstream year a round populating the Caribbean rivers and hereby contributing to the next generation. The Canadian, Maine and Caribbean baby eel harvest are the "Canaries in the coalmine" an acknowledgement of a healthy or not so healthy eel population rooted in the U.S.A. and Canada is the only reliable eel population data available for all of us to see.

The phenonium of recent abundance baby eel recruitment exceeding in volume of the nineties is a contradicting of the ASMFC narrative, proving that ASMFC data collection including the adult eel population is **fundamentally flawed.** A one-year heavy baby eel recruitment can be a fluke but two years in a row is starting to look more like a trend and if 2024 is no different it is a solid established trend.

The abundance of baby eel recruitments in 2022 and 2023 are the direct result from by the ASMFC period called **# even lower regime in 2000-2020.** It is obviously that the adult eel fishery didn't hurt the silver eel migration during this period. In contrast in the nineties with a baby eel recruitment fewer in numbers this recruitment was a direct result of the silver eel migration during the by the ASMFC period called **# high yellow eel abundance regime in 1974-1987.**

We all can see the contradiction here you can't have it both ways, calling the period of **high yellow eel abundance regime in 1974-1987** while this period produced a fraction of the offspring compared to the most recent abundance of baby eel recruitment period and calling the latter period **an even lower regime in 2000 to 2020**.

As pointed out here the problem isn't the adult eel industry **the problem lays fundamentally with the fact that the ASMFC** is not having access to the right tools to assess the eel population.

Conclusion

Instead of more restrictions what is needed is acknowledging that the adult eel fishery is a twentieth century antiquated industry an unreliable data source for the twentieth first century.

BABY EEL RECRUITMENT DATA REFECTS THE NORTH AMERICAN EEL POPULATIONS HEALTH NOT THE OTHERWAY AROUND.

ASMFC and industry would be much better serviced in converting partially the adult eel fishery quota into a controlled baby eel fishery benefitting "**data collection** "at **FIXED** locations, filling a data vacuum, creating a win-win as explained in my previously submitted public comments.

"Abraham Maslow" To the man who only has a hammer, everything begins to looks like a nail.

ASMFC needs to take a pause in further unnecessary not needed restrictions and instead focusing on implementing a very much needed data collection reform fitting for the twentieth first century.

Thanks, for your time and your consideration.

Willy Bokelaar emergo22@hotmail.com

Caitlin Starks

From: rbrown marylandwatermen.com <rbrown@marylandwatermen.com>
Sent: Friday, March 22, 2024 9:06 AM
To: Comments
Subject: [External] ASMFC Yellow Eel Board Proposed Quota
Attachments: MWA ltr ASMFC Yelloe Eel 2024.docx

Categories: Replied but not sorted

Please find attached a letter in opposition to the Yellow Eel Quota for Coast Wide Harvest.

Very Respectfully,

Victoria M Brown
For the Boards
Maryland Watermen's Association, Inc.

The Maryland Watermen's Association, Inc.

21 March 2024

Subject: Proposed decrease to the Yellow Eel Quota by the ASMFC

The Maryland Watermen's Association, Inc has polled the Board of Directors and Executive Committee and has unanimously voted to support the Status Quo and urges the ASMFC Commission not to cut any Yellow Eel Quota. Considering that the Yellow Eel Fishery has not been overfished or overfishing has not occurred, there should be no reason to alter the Coastwide Quota at this time.

Harvest records should not be used to even consider a cut to the quota, it is the market that controls what has been caught. Reducing the quota at this time would only discourage future commercial harvest and reduce the chance of establishing this fishery.

The Maryland Watermen's Association urge you to support Status Quo and to encourage growth in the Yellow Eel Industry, strengthen economic opportunities and preserve the cultural and environmental heritage associated with Yellow Eel harvesting in the State of Maryland.

Respectfully submitted,

For the Board

VICTORIA M BROWN

MARYLAND WATERMEN'S ASSOCIATION, INC.

1805A VIRGINIA ST.
ANNAPOLIS, MD 20626
410-216-6610

Caitlin Starks

From: Jim Bright <jimbright99@gmail.com>
Sent: Sunday, March 17, 2024 8:34 PM
To: Comments
Subject: [External] Yellow Eel Harvest Cap Draft Addendum

Categories: Replied but not sorted

ASMFC,
I am a crabber from Maryland. Please consider the effect a restrictive cap will have on Maryland crabbers, especially crabbers who rely on eel as trotline bait. Please choose option 1, status quo, as there is not high demand for eel and fishing effort has been low. If effort increases, and catches are closer to the threshold, then I think it makes sense to reconsider the proposed caps/options.
Jim Bright

Caitlin Starks

From: monkingboy@aol.com
Sent: Sunday, March 24, 2024 2:59 PM
To: Caitlin Starks
Subject: [External] Yellow eel / Glass Eel harvest Addendum

Dear Caitlin Starks ,
My name is Edwin Chiofolo ,
I haft to tell you that New York State fishermen have not been getting notifications of meetings that you people are holding …
.. Maureen Davidson and John Maniscalco.. of NYS DEC did not notify the 20 or so fishermen that I know of, that fish eels here on Long Island at All…
How can you pass a law of any kind with out notification to the fisherman that fish in that fishery ?????
THERE IS SUPPOSED TO BE A IN HOUSE MEETING IN PERSON , COVID IS OVER …
Never had that , and my lawyer has been notified of this …
With that being said …
I feel as tho , the eels should be left at status quo until you let the fisherman here in NY State actually what is going on ..???
I have fished eels for over 40 years , I know more about the American Yellow Eel then you can read in most books ..
The Other thing is that No State , has any control over how they spawn, because the eels spawn in the Sargo Sea in the Caribbean.. then the glass eels or elvers. Come up in the Gulf Stream and there is no control over that to any one state ..
SO , How can you control , something that the federal government or any State has no control over ???
If you are so worried about the eels then why give Maine more glass eel permits??
That makes no sense…
Leave it Status Quo until , further data is available..
Thank you for your time Caitlin Starks
Edwin Chiofolo

PS please , Let NYS DEC know that they need to notify there fishmen about all meetings
And are to hold them in Person according to the law

Caitlin Starks

From: Rhonda Danna <radanna0230@gmail.com>
Sent: Tuesday, February 20, 2024 7:28 PM
To: Comments
Subject: [External] Fwd: EEL Webinar 2/20/24 6-8pm

---------- Forwarded message ---------
From: **Rhonda Danna** <radanna0230@gmail.com>
Date: Tue, Feb 20, 2024 at 7:26 PM
Subject: EEL Webinar 2/20/24 6-8pm
To: <g2w2@asmfc.org>

I have been a commercial waterman for 35 years . An attended webinar on 2/20/2024 and was unable to ask a question due to technical issues. How has it been in the last 3-5 years? Me along with other crabbers can;t keep crab bait in our pots because of the over abundance population of eels eating our bait . How can your stats be based on accurate information with landings When less fisherman have the ability to buy bait and afford fuel, the inability to get bait . Season must be evaluated by water temperatures .
Accurate account should be by reports supplied by a waterman who actually caught eels.

Thank You ,

Michael Finlaw Commercial Crabber New Jersey

DELAWARE VALLEY FISH COMPANY

Specializing in Live and Fresh Frozen Seafood Worldwide

From: Mitchell Feigenbaum
To: ASMFC Eel Board, TC and AP
Date: March 25, 2024
Re: Commentary on Eel Addendum Options

Dear Colleagues -

I write to elaborate on the concerns expressed separately by my partner Barry Kratchman. We are disappointed that in a period of historic low effort, after imposing a coast wide cap near the bottom end of 50-year harvest levels, stock assessors, using a third new statistical model in as many assessments, now urge an option that could doom the U.S. yellow eel fishery to oblivion.

The newest stock assessment is particularly troubling because it depends on catch levels as a primary measure of abundance. Ironically, in my first visit to ASMFC in 2003 or 2004, I presented five years of catch information demonstrating stable harvest levels during that period. Thereafter, the TC stated that catch records are an inappropriate indicator of abundance without catch per unit effort (CPUE) data. This position is reflected in the historical records of the TC and the management board.

Now, twenty year later, in a single recommendation, the stock assessment subcommittee is proposing to reduce the eel cap by more than 70% from what was already a very conservative target, based on a catch-based model. Adding insult to injury, the plan development team is also proposing the elimination of mandatory CPUE data collection.

I am informed that, despite its name, the new model relies significantly on fishery-independent data, where available. What remains unsaid, however, is that most fishery-independent data collection comes from places where fishing effort has been centered for decades. Little information about abundance comes from the vast stretches of eel habitat throughout the coast where little or no eel fishing takes place. Moreover, very little fishery-independent data is gathered from surveys directed specifically towards eels. Often, it is just an afterthought in another survey.

On a different note, for three consecutive years the eel Advisory Panel has asked its coordinators to arrange an election for a new Chairperson. Our current AP Chair came from an NGO and was one of two North American scientists on an IUCN panel whose red-listing of American eel was rejected by the Fish and Wildlife Service nine years ago. She has been in the position for over five years. By contrast, the prior two AP Chairmen from industry were asked to step down after two or three years at most, to promote balanced leadership. A double standard is not fair.

In past years, our AP Chair was active during stock assessments and peer review, with a close eye on industry concerns. That type of scrutiny was not apparent during the most recent stock review. While the current Chair's voice on the AP is important and her style always respectful, the time to rotate the AP Chair is overdue.

In conclusion, the current coastwide cap is a prudent measure to keep eel catches at historically low levels. Dramatic reductions urged by the stock assessment subcommittee would be a radical step further. Watermen and women throughout the mid-Atlantic states rely on American eel as one several species they target off-and-on to make a living in the near-shore fishery. Presently they do not rely heavily on eel for their living. If the fishery is locked into the lowest target effort level for the foreseeable future, however, this commodity will not be commercially non-viable in the long run. Thus, we recommend status quo or option 5.

M.F.

108 W. Basin Street | P.O. Box 252 | Norristown, PA 19404 | P: (610) 277 4900 | DVFish.com

Caitlin Starks

From: Mary Ferguson <mtf1952@gmail.com>
Sent: Wednesday, March 20, 2024 6:57 PM
To: Comments
Cc: Susan Case
Subject: [External] Addendum VII Hearing Comments

I am approaching my 36th year of my eel rack on the Delaware River.
About10 years ago there were 9 permits issued. I am now only one of the last 2 weirs left that fishes for silver eel.

An average annual catch for me is 2,500 pounds per year. In 2023 I was flooded out only fishing for 21 of the 60 days of fishing. Based on my daily catch for those 21 days, I estimate the catch would have been 3,000 pounds.
We have also had flooding for the past 6 year which yielded less pounds caught.
As a result there are substantially less fishermen and eels caught and I recommend that the permits and rules remain the same.

Douglas Case
Welcome Lake ,PA
DouglasGCase@gmail.com

DELAWARE VALLEY FISH COMPANY

March 20, 2024

Attn: Caitlin Starks
Senior Fish Management coordinator

Good Day,

My Name is Barry Kratchman and I am the third generation of the founder of Delaware Valley Fish and the current President. I have been involved at DVF for my entire life and proud of our 51 year history. Throughout our history we have witnessed ebbs and flow in the industry and currently the market has declined due to several factors, including farmed eels, availability of bait and the price of fuel. The market price is currently below the threshold for large scale fishing and we have experienced low effort since Covid in 2020.

Over the years I have been engaged in several state-wide meetings and have been in contact with many of the industry members. The industry accepted the Coast Wide Cap of 916K pounds and since its inception have not exceeded it. Currently catches are far below the cap and we are all diligently trying to understand the need for further reductions.

The US Fish and Wildlife has established in 2015 that the “eel stock is stable and does not require protection”. Understanding that management of the species must continue and a responsible path must prevail, it is extremely difficult to predict the abundance of American Eel. The peer review panel has cautioned us on the lack of substantial data and how difficult estimating abundance is, in fact, the panel stated, “American Eel is depleted from all time levels in American waters and uncomfortable with overfished terminology because of the uncertainty in the assessment methods and do not believe a reliable determination could be defined at this time”.

We all understand the Panmictic nature of American eel and the range from South America to Canada. The thousands of rivers they inhabit over thousands of miles. More importantly the peer review’s opinion of the lack of correlation of fishing effort and abundance. I also applaud the peer review opinion that more indices are needed and the species is difficult asses. The most comprehensive data comes from Table 13 that list the 15 yellow eel indices in the response to the peer view. Interesting 3 of the indices come from the Hudson River (very low area of catches and represents 20% of the data). Models that suggest eliminating these surveys, because of the potential bias, show extremely stable abundance from 2000 to present (Figure 3 page 22).

Although the assessment has YOY indices they do not feed into the model and once again, it is of the peer review opinion that more indices be used. The YOY may not be a good indicator of abundance but certainly represent the health of the stock as recruitment is a strong indicator of

spawning occurring in the breeding area. There are several indicators of the heavy recruitment of YOY all through the US and Canada including record breaking numbers at the Conowingo Dam.

The last data fed into the models were from 2000 and earlier and I believe it is important to update the model before substantial management is suggested. I also believe adding more indicis over many life cycles would provide a better indication of the abundance and health of the species. In addition, surveying countries not in the US to determine their abundance and health would be instrumental in establishing the management of this panmictic species.

I implore the board to make no further management policy until the above-mentioned items are addressed and data is updated. If the board feels they must act then OPTION 5 (coast wide cap of 716,497) (Reference Period 1988-1999, Multiplier 1.25, and Threshold .5) would be the most responsible course until more data is collected. It would be important to reassess in 3 years not 5 and certainly, require YOY surveys from each state.

The future of several hundred families is at stake and would all hope that if the market changes viable decisions would allow the continuance of this multi -generational industry

Respectfully,

Barry Kratchman
Delaware Valley Fish Co.
bk@dvfish.com
484-614-5574

Caitlin Starks

From: Michael Lightfoot <jacksoncreek1152@gmail.com>
Sent: Wednesday, March 6, 2024 12:57 PM
To: Comments
Subject: [External] Va Twin Rivers Watermen's Assoc, Comments on American Eel Addendum VII

Categories: Replied but not sorted

The Va Twin Rivers Watermen's Assoc (VTRWA) has contacted numerous Va Watermen who USED to fish for American Yellow eel extensively throughout Va and Potomac tidal waters. We also spoke with the family members largest Eel buyer (Robberecht Wholesale Seafood) in the Northern Neck which closed nearly 15 years ago. The family states that the wholesale market for American Eel disappeared to nearly zero, many due to overseas aquaculture, and they went out of business..

In the past 15 years our market has disappeared except for a limited recreational bait market, primarily for Cobia fishing during the summer months. There is a very small retail market to the Asian communities in Richmond and Northern Virginia but this may be less than 5% of our catch today. Confirmation of this market collapse is stated in the ASMFC draft addendum document in paragraph 2.4.1 Coastwide Description.

In researching what has happened to our market, all indicators point to aquaculture, growing small eels in ponds and tanks in Asia and Europe. These facts are also stated in the draft addendum. Now we have the first US American Eel aquaculture company which opened in 2023, the American Unagi Corporation , Waldoboro, ME. which opened in 2023 Our Farm - American Unagi. If illegal catch of undersized eels and shipments to foreign aquaculture markets could stop, we may have a chance for a small market return.

Based on the above data and that we are not overfishing this species, in fact we are barely fishing whatsoever. We recommend option 1 for Status Quo. Our watermen all state an abundance of mature eels in our waterways and we would welcome any market returns and help from ASMFC on curbing the illegal catch and shipping of small eels to overseas aquaculture markets.

A copy of this email is also being sent to ASMFC

Ed Arnest
President VTRWA

Caitlin Starks

From: G2W2
Sent: Tuesday, February 20, 2024 8:47 AM
To: Comments
Subject: FW: [External] Draft Addendum V11: Yellow Eel Harvest Cap

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From: Betty Veach <bveach1977@gmail.com>
Sent: Monday, February 19, 2024 6:08 PM
To: G2W2 <G2W2@asmfc.org>
Subject: [External] Draft Addendum V11: Yellow Eel Harvest Cap

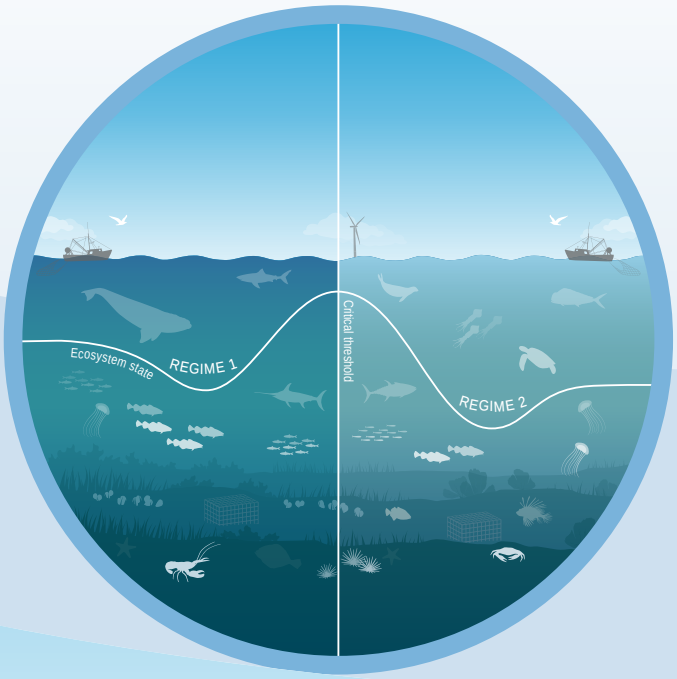
I ask that the ASMFC keep the 2023 Status Quo remain as is. If the catch has went down, I have listed reasons that may have caused the decline:
1. The cost for purchasing Out-
Of-State crabs is $4.00-4.50 per crab.
2. The average cost of gasoline is $4.50/gal
3. A 3 gallon pail of pot paint cost $420.00
These are reasons why a lot of eelers have stopped eeling and the total catch has decreased.

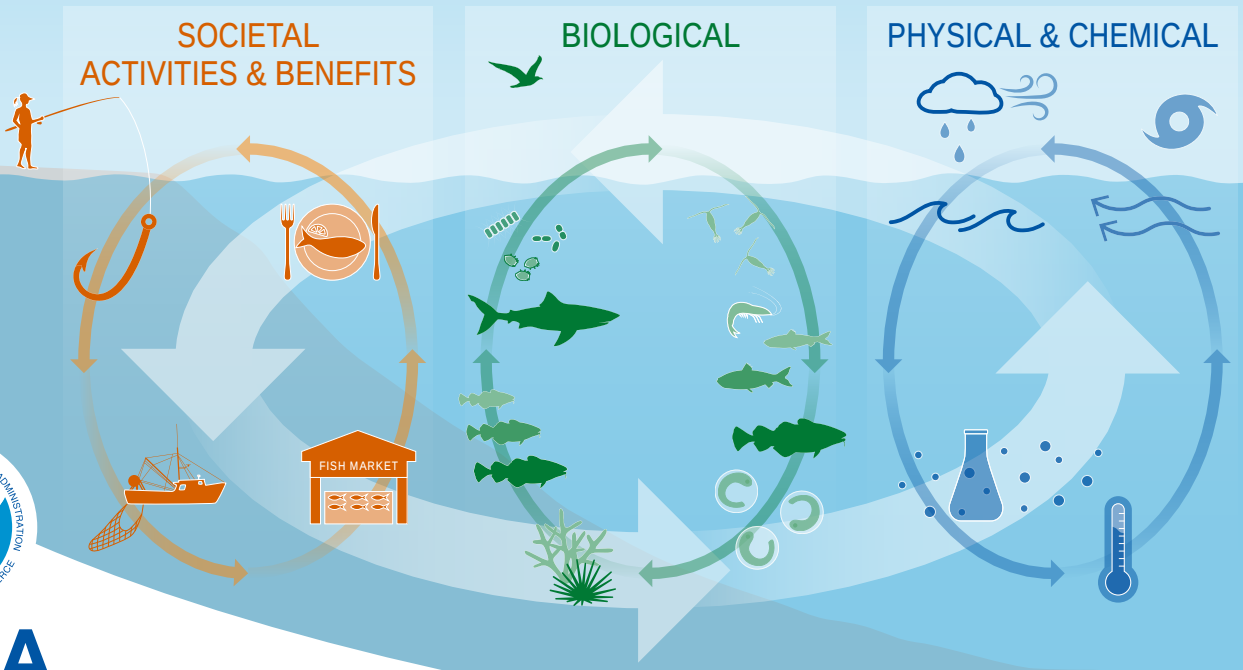
If you reopen the harvest of horseshoe crabs in NJ, you will see a significant increase in the catch.

Sincerely,
Sam Veach

2024 State of the Ecosystem

New England

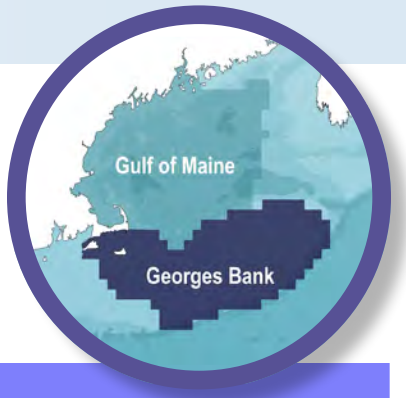




NOAA FISHERIES

Performance Relative to Fishery Management Objectives

Trends and status of indicators related to broad ecosystem-level fishery management objectives, with implications for the New England Fishery Management Council (NEFMC)

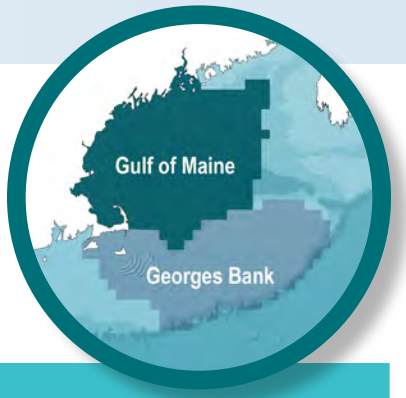


GEORGES BANK (GB)

OBJECTIVE (Indicator)	30 YEAR TREND	CURRENT STATUS	IMPLICATIONS
Seafood production (Total and NEFMC managed landings)	**TOTAL** ↔ No trend	**TOTAL** − Below long-term average	New England managed species seafood production is significantly declining and currently below the long-term average. Total U.S. seafood production is also below the long-term average. Recreational harvest in New England is slightly above the low observed in 2020, but still well below the long-term average. Both the commercial and recreational landings status are driven in part by management to address mandated rebuilding of depleted stocks.
	MANAGED ↘ Decline	**MANAGED** − Below long-term average	
Commercial profits (Total and managed revenue)	↔ No trend	+ Above long-term objective	Despite high landings of scallop, lower prices drew total revenue down in 2022. Inflation-adjusted revenue on GB has only exceeded 1982 levels twice in the time series, with price effects driving dynamics over the past decade.
Recreational opportunities (Effort and fleet diversity)	**EFFORT** ↔ No trend	**EFFORT** ≈ Near long-term average	Recreational opportunities in the region are relatively stable, with respect to the types of trips (i.e., shore, private boat, charter/party) and numbers of species landed.
	DIVERSITY ↔ No trend	**DIVERSITY** ≈ Near long-term average	
Stability (Fishery and ecosystem diversity maintained over time)	**FISHERY** ↔ No trend	**FISHERY** Commercial − Below long-term average; Recreational ≈ Near long-term average	**Commercial:** Commercial fleets continue to shift towards a reliance on fewer species, with 2022 near historic low species diversity levels. **Recreational**: Species diversity is increasing due to increases in southerly species and lower catch limits on traditional regional species. **Ecosystem:** Adult fish diversity indices are stable while zooplankton diversity is increasing, indicating potential instability. Several climate and oceanography metrics are changing and should be monitored as warning signs for potential regime shift or ecosystem restructuring.
	ECOSYSTEM ⇄ Mixed trends	**ECOSYSTEM** ≈ Near long-term average	
Social and cultural (Community fishery engagement, reliance, and environmental justice vulnerability)	**Status only indicator**	**Environmental justice status for top commercial and recreational communities**	The specific issues facing communities with environmental justice concerns in New England vary widely. New Bedford, MA, is the only community in New England that scored medium-high for all three environmental justice indicators. Boston, MA scored medium-high for population composition and poverty. By contrast, communities in Maine scored medium to medium-high for poverty and personal disruption, but had lower population composition scores.
Protected species (Coastwide bycatch, population numbers, mortalities)	**BYCATCH** ⇄ Mixed trends	**BYCATCH** Harbor porpoise ✓ Meeting objectives; Gray seal ✓ Meeting objectives	Bycatch objectives are being met for harbor porpoise and gray seals. Mixed bycatch trends through 2021 are related to fishery management, shifts in porpoise distribution combined with fishery shifts, and population increase for gray seals. Population drivers for North Atlantic Right Whales (NARW) include combined fishery interactions/vessel strikes and distribution shifts related to prey abundance and quality. Management measures to reduce adult mortality are reflected in more stable population numbers. Unusual mortality events continue for 3 large whale species.
	POPULATIONS ⇄ Mixed trends	**POPULATIONS** NARW − Below long-term average; Gray seal + Above long-term objective	

Performance Relative to Fishery Management Objectives

Trends and status of indicators related to broad ecosystem-level fishery management objectives, with implications for the New England Fishery Management Council (NEFMC)



GULF OF MAINE (GOM)

OBJECTIVE (Indicator)	30 YEAR TREND	CURRENT STATUS	IMPLICATIONS
Seafood production (Total and NEFMC managed landings)	Decline	Below long-term average	Seafood production from New England managed species is near the lowest levels observed with a long-term declining trend. Total U.S. seafood production also shows a significant long-term decreasing trend. Recreational harvest in New England is up slightly from its lowest point in 2020, but is still well below the long-term average. Both the commercial and recreational landings status are driven in part by management to address mandated rebuilding of depleted stocks.
Commercial profits (Total and managed revenue)	TOTAL: No trend MANAGED: Decline	TOTAL: Above long-term objective MANAGED: Below long-term average	Total GOM revenue exceeded 1982 baseline levels in all but 4 years. High prices and landings of lobster continue to drive total regional revenue. However, revenue from New England managed species is near the all-time low.
Recreational opportunities (Effort and fleet diversity)	EFFORT: No trend DIVERSITY: No trend	EFFORT: Near long-term average DIVERSITY: Near long-term average	Recreational opportunities in the region are relatively stable, with respect to the types of trips (i.e., shore, private boat, charter/party) and numbers of species landed.
Stability (Fishery and ecosystem diversity maintained over time)	FISHERY: No trend ECOSYSTEM: Mixed trends	FISHERY: Commercial: Below long-term average; Recreational: Near long-term average ECOSYSTEM: Near long-term average	**Commercial:** Commercial fleets continue to shift towards a reliance on fewer species, with 2022 near historic low species diversity levels. **Recreational**: Species diversity is increasing due to increases in southerly species and lower catch limits on traditional regional species. **Ecosystem:** Fish species richness is increasing while zooplankton diversity is stable, indicating potential instability. Several climate and oceanography metrics are changing and should be monitored as warning signs for potential regime shift or ecosystem restructuring.
Social and cultural (Community fishery engagement, reliance, and environmental justice vulnerability)	**Status only indicator**	**Environmental justice status for top commercial and recreational communities**	The specific issues facing communities with environmental justice concerns in New England vary widely. New Bedford, MA, is the only community in New England that scored medium-high for all three environmental justice indicators. Boston, MA scored medium-high for population composition and poverty. By contrast, communities in Maine scored medium to medium-high for poverty and personal disruption, but had lower population composition scores.
Protected species (Coastwide bycatch, population numbers, mortalities)	BYCATCH: Mixed trends POPULATIONS: Mixed trends	BYCATCH: Harbor porpoise: Meeting objectives; Gray seal: Meeting objectives POPULATIONS: NARW: Below long-term average; Gray seal: Above long-term objective; Salmon: Below long-term average	Bycatch objectives are being met for harbor porpoise and gray seals. Mixed bycatch trends through 2021 are related to fishery management, shifts in porpoise distribution combined with fishery shifts, and population increase for gray seals. Population drivers for North Atlantic Right Whales (NARW) include combined fishery interactions/vessel strikes and distribution shifts related to prey abundance and quality. Management measures to reduce adult mortality are reflected in more stable population numbers. Unusual mortality events continue for 3 large whale species.

Risks to Meeting Fishery Management Objectives

Climate and Ecosystem Risks

Climate and ecosystem change can directly and indirectly create risks to meeting fisheries management objectives by affecting the distribution, seasonal timing, productivity, and physiology of marine species.

Risks to Spatial Management: Species distribution shifts can complicate quota allocation because historical distributions may not reflect current availability and catch. Changing spatial overlap of species and fisheries can alter bycatch patterns. Species availability to surveys can change.

- **Observations:** Species distributions are trending to the northeast along the continental shelf and into deeper water for many fish and marine mammals.
- **Drivers:** Increasing temperature, changing oceanography, and the decreasing seasonal cold pool can alter the spatial distribution of suitable habitat for managed species and the availability of their prey.

Risks to Seasonal Management: Changes in seasonal life-cycle events may not align with fishing seasons or area openings/closings, potentially reducing effectiveness of management measures. Changes in species and fisheries temporal overlap can alter bycatch and availability to surveys.

- **Observations:** Seasonal timing of spawning has changed for some managed species. Migration timing of some tunas and large whales has changed.
- **Drivers:** Later transition to fall conditions, a shorter seasonal cold pool, changing timing of fall phytoplankton blooms, seasonal community shifts in zooplankton, and changes in timing of food availability affect the timing of life-cycle events.

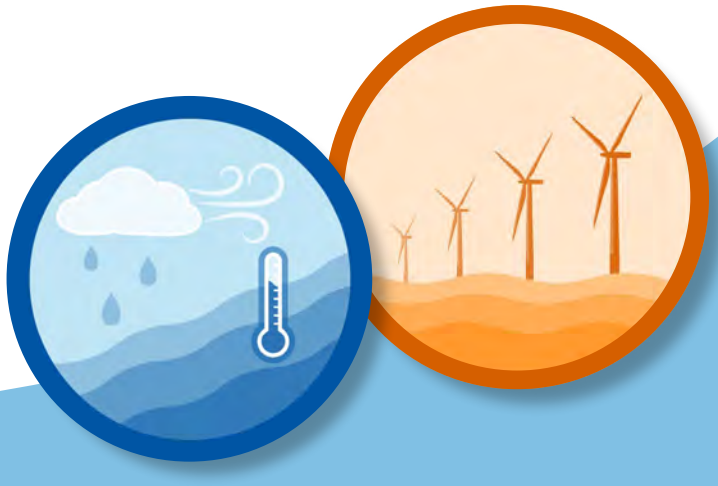
Risks to Quota Setting/Rebuilding: Environmentally driven changes in growth, reproduction, and natural mortality can complicate short-term stock projections. Stock reference points may not reflect prevailing environmental conditions.

- **Observations:** Changes in fish productivity and condition have been observed for multiple species.
- **Drivers:** Warmer temperatures increase metabolic demands and alter the availability and quality of prey. Episodic extreme temperatures, ocean acidification, and low oxygen events are multiple stressors that can affect growth rates and cause mortality.

Other Ocean Uses: Offshore Wind Risks

There are 30 offshore wind energy projects proposed for construction on the Northeast shelf, covering more than 2.3 million acres by 2030, with additional large areas under consideration. Impacts at the wind project, local ocean, and regional scales are likely. Negative effects are possible for species that prefer soft bottom habitat, while species that prefer hard structured habitat may benefit. Wind energy updates include:

- Two projects are under construction in southern New England (South Fork Wind and Vineyard Wind 1).
- The first draft wind energy area within the Gulf of Maine has been proposed for floating offshore wind, with lease sales anticipated for late 2024.
- 1–34% of New England port revenue (2008–2022) came from existing leased and proposed offshore wind areas. Some of these communities score medium-high to high in environmental justice concerns and gentrification vulnerability.
- 3–54% and 4–53% of annual commercial revenue and landings, respectively, for NEFMC managed species between 2008–2022 occurred within existing and proposed wind energy areas and may be displaced. Individual operators may depend on lease areas for even larger proportions of their annual landings or revenue.
- An Integrated Ecosystem Assessment is ongoing for offshore wind and fisheries interactions in the Gulf of Maine.
- Ongoing construction areas and planned future wind areas overlap with one of the only known winter right whale foraging habitats, and altered local oceanography could affect right whale prey availability. Development also increases vessel strike risk and the potential impacts of pile driving noise.



2023 Highlights

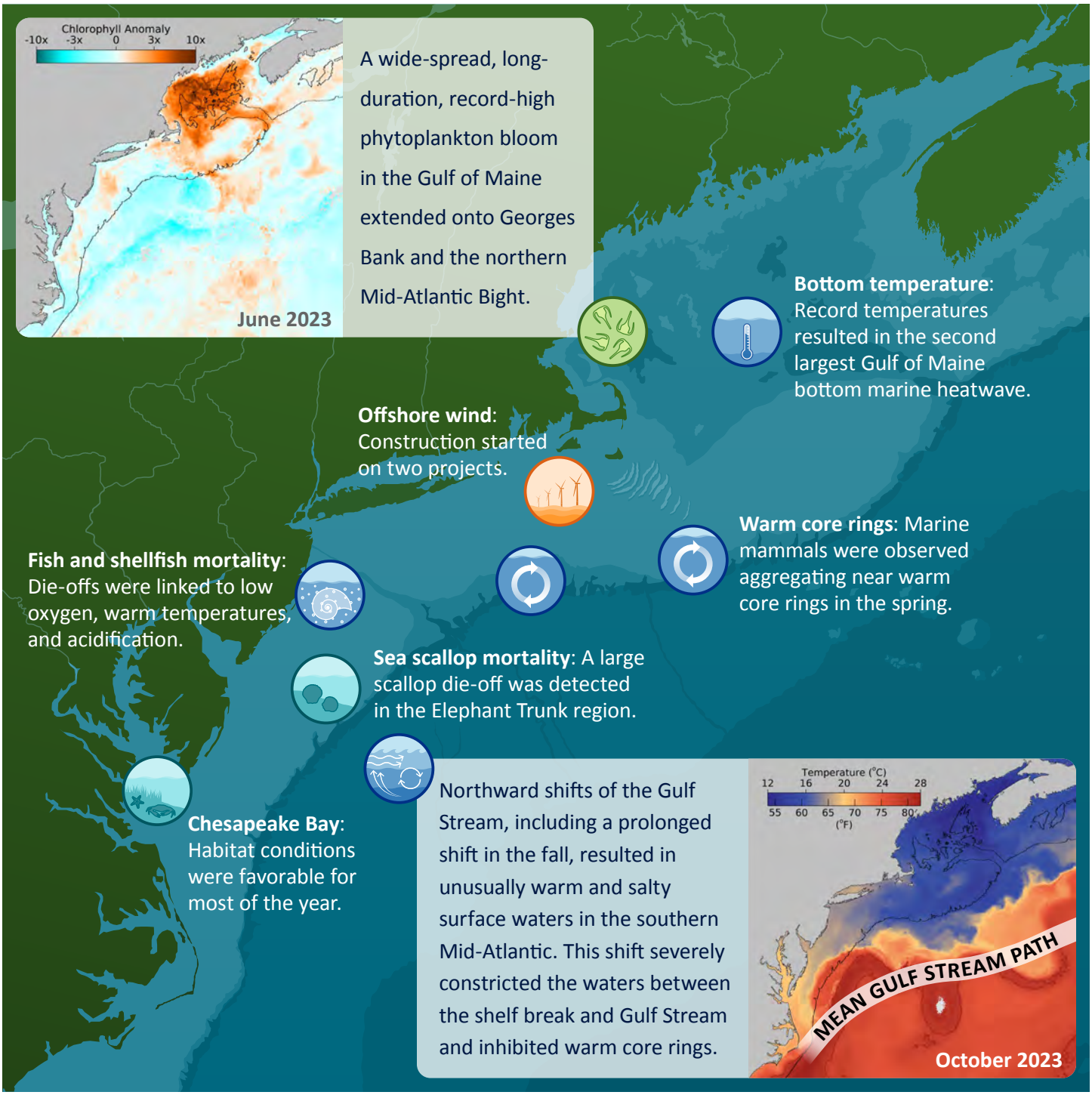
Multiple anomalous conditions and extreme events were observed in 2023 that could have brief local effects and/or widespread long-term ecosystem, fishery, and management implications. Anomalous events describe unusual or remarkable observations and can lead to increased uncertainty and unpredictable management outcomes.

Sea Surface Temperature

2023 global and North Atlantic sea surface temperatures were the warmest on record. However, Northeast U.S. shelf temperatures were more variable, with near record highs in winter and near average in other seasons.

El Niño Conditions

The 2020–2022 La Niña conditions ended in late winter and shifted to strong El Niño conditions in late spring 2023. The current El Niño is expected to gradually weaken and transition to neutral conditions in spring 2024.



Introduction

About This Report

This report is for the New England Fishery Management Council (NEFMC). The purpose of this report is to synthesize ecosystem information to allow the NEFMC to better meet fishery management objectives. The major messages of the report are synthesized on pages 1-3, with highlights of 2023 ecosystem events on page 4. The information in this report is organized into two main sections; performance measured against ecosystem-level management objectives (Table 1), and potential risks to meeting fishery management objectives (climate change and other ocean uses). A final new section introduced this year highlights notable 2023 ecosystem observations.

Report structure

We recommend new readers first review the details of standard figure formatting (Fig. 56a), categorization of fish and invertebrate species into feeding guilds (Table 4), and definitions of ecological production units (EPUs, including the Gulf of Maine (GOM) and Georges Bank (GB); Fig. 56b) provided at the end of the document.

The two main sections contain subsections for each management objective or potential risk. Within each subsection, we first review indicator trends, and the status of the most recent data year relative to a threshold (if available) or relative to the long-term average. Second, we synthesize results of other indicators and information to outline potential implications for management (i.e., connecting indicator(s) status to management and why an indicator(s) is important). For example, if there are multiple drivers related to an indicator trend, we examine which drivers may be more or less supported by current information, and which,if any, are affected by management action(s)? Similarly, we examine which risk indicators warrant continued monitoring to evaluate whether regime shifts or ecosystem reorganization are likely? We emphasize that these implications are intended to represent testable hypotheses at present, rather than "answers," because the science behind these indicators and syntheses continues to develop.

A glossary of terms[1], detailed technical methods documentation[2] and indicator data[3], and detailed indicator descriptions[4] are available online.

Table 1: Example ecosystem-scale fishery management objectives for the New England region

Objective categories	Indicators reported
Provisioning and Cultural Services	
Seafood Production	Landings; commercial total and by feeding guild; recreational harvest
Profits	Revenue decomposed to price and volume
Recreation	Days fished; recreational fleet diversity
Stability	Diversity indices (fishery and ecosystem)
Social & Cultural	Community engagement/reliance status
Protected Species	Bycatch; population (adult and juvenile) numbers, mortalities
Supporting and Regulating Services	
Biomass	Biomass or abundance by feeding guild from surveys
Productivity	Condition and recruitment of managed species, Primary productivity
Trophic structure	Relative biomass of feeding guilds, Zooplankton
Habitat	Estuarine and offshore habitat conditions

Performance relative to fishery management objectives

In this section, we examine indicators related to broad, ecosystem-level fishery management objectives. We also provide hypotheses on the implications of these trends—why we are seeing them, what's driving them, and potential

[1] https://noaa-edab.github.io/tech-doc/glossary.html
[2] https://NOAA-EDAB.github.io/tech-doc
[3] https://github.com/NOAA-EDAB/ecodata
[4] https://noaa-edab.github.io/catalog/index.html

or observed regime shifts or changes in ecosystem structure. Identifying multiple drivers, regime shifts, and potential changes to ecosystem structure, as well as identifying the most vulnerable resources, can help managers determine whether anything different needs to be done to meet objectives and how to prioritize upcoming issues/risks.

Seafood Production

Indicator: Landings; commercial and recreational

This year, we present updated indicators for total commercial landings, U.S. seafood landings, and Council-managed U.S. seafood landings . Total commercial landings within New England show no long-term trend on GB, and a long term decline in the GOM (Fig. 1). There exist long-term declines in commercial seafood landings and NEFMC managed seafood landings for both the GOM and GB, but over the last decade GOM landings appear to be relatively stable.

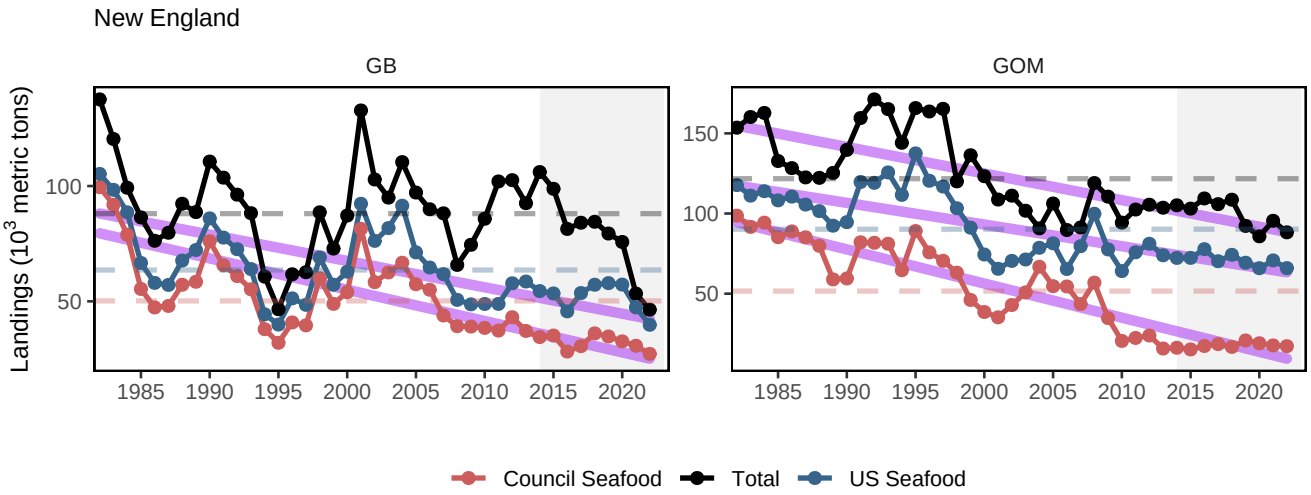


Figure 1: Total commercial landings (black), total U.S. seafood landings (blue), and New England managed U.S. seafood landings (red) for Georges Bank (GB) and the Gulf of Maine (GOM).

Commercial landings by guild include all species and all uses, and are reported as total for the guild and the NEFMC managed species within the guild. As reported in previous years, downward trends persist for a number of guilds in both regions. Current high total landings for benthivores (GOM) are attributable to American lobster, and a significant long term increase in benthos landings (GB) is attributable to clams and scallops (Fig. 2). Current landings of planktivores are near historic lows.

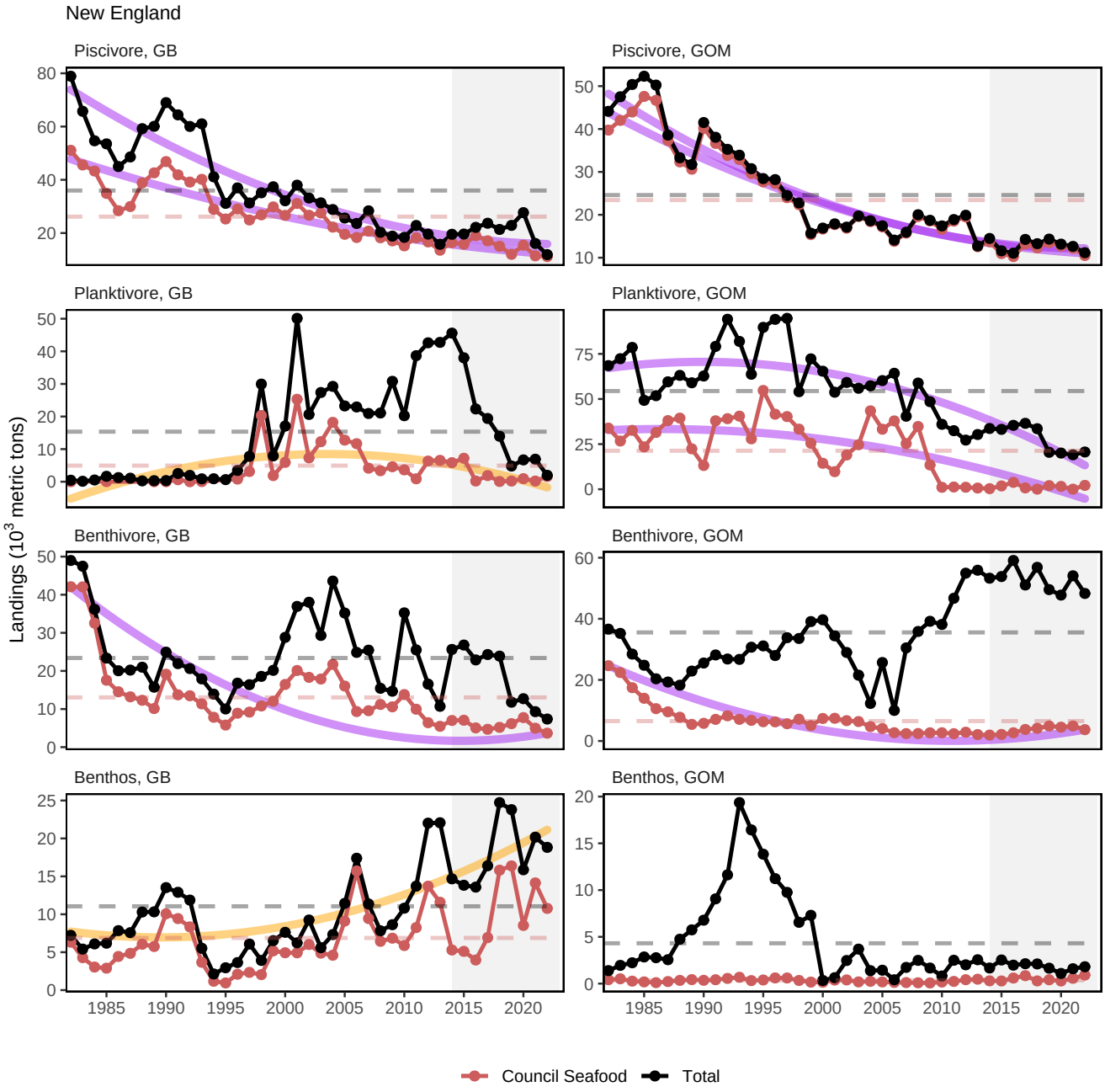


Figure 2: Total commercial landings (black) and NEFMC managed U.S seafood landings (red) by feeding guild for the Gulf of Maine (GOM, right) and Georges Bank (GB, left).

Overall, recreational harvest (retained fish presumed to be eaten) has also declined in New England (Fig. 3). However, harvest has rebounded somewhat from the historical low level in 2020. Recreational shark landings of pelagic and prohibited sharks have declined since 2018 (Fig 4), likely influenced by regulatory changes implemented in 2018 intended to rebuild shortfin mako stocks.

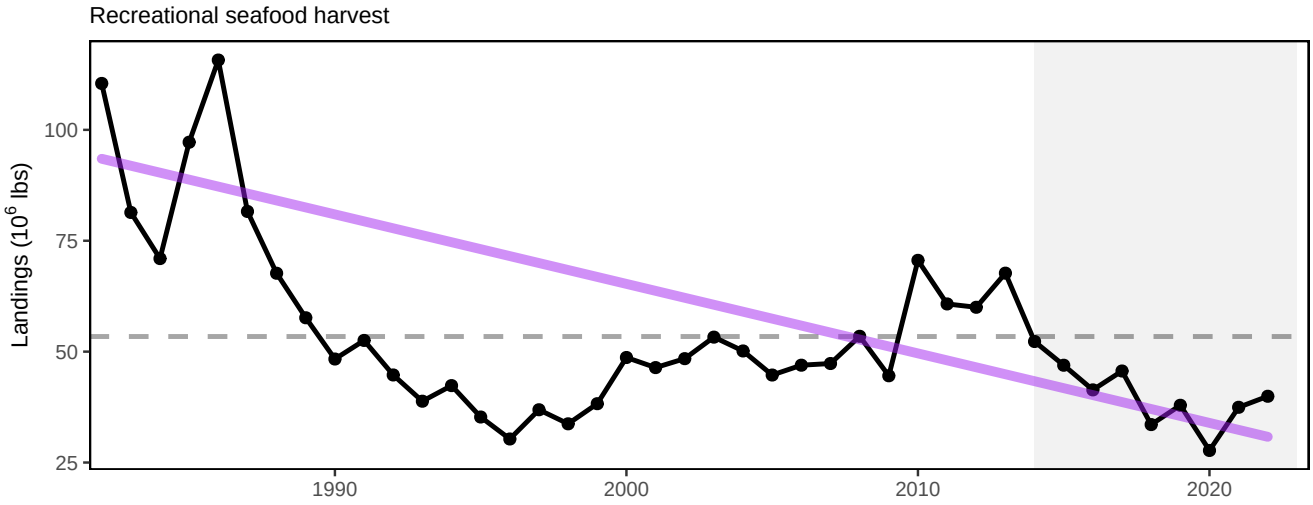


Figure 3: Total recreational seafood harvest (millions of pounds) in the New England region.

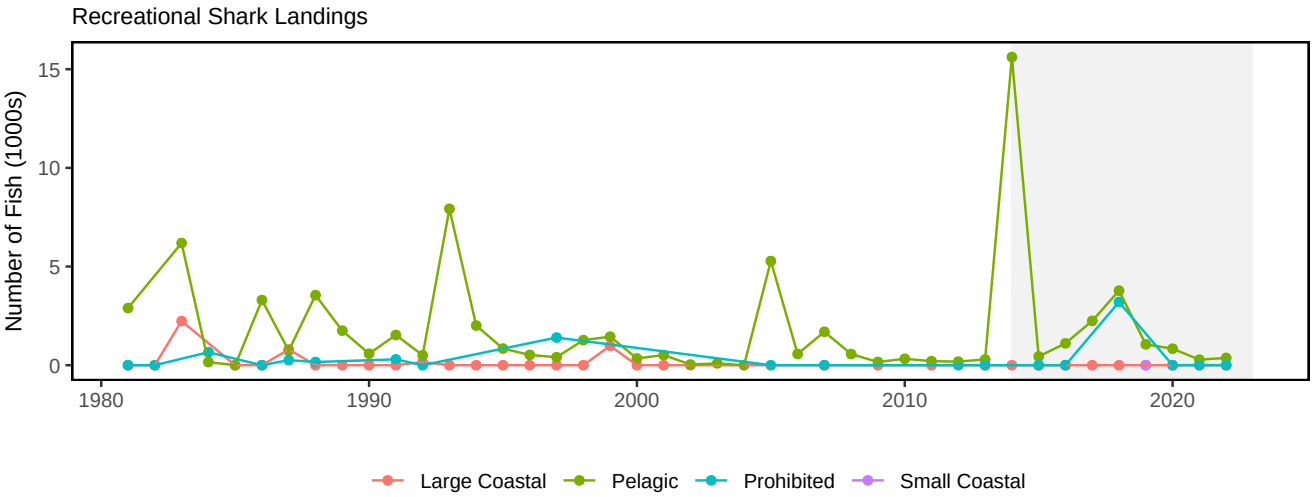


Figure 4: Recreational shark landings from Large Pelagics Survey.

Aquaculture production is not yet included in total seafood landings.

Implications

Declining commercial seafood and recreational landings are driven by many interacting factors, including combinations of ecological and stock production, management actions, market conditions, and environmental changes. While we cannot evaluate all possible drivers at present, here we evaluate the extent to which stock status and changes in system biomass play a role.

Stock Status Single species management objectives (1. maintaining biomass above minimum thresholds and 2. maintaining fishing mortality below overfishing limits) are not being met for some NEFMC managed species. Thirteen stocks are currently estimated to be below B_{MSY}, while status relative to B_{MSY} could not be assessed for 13 additional stocks (Table 2). Therefore, stock status and associated management constraints are likely contributing

to decreased landings. To better address the role of management in future reports, we could examine how the total allowable catch (TAC) and the percentage of the TAC taken for each species has changed through time.

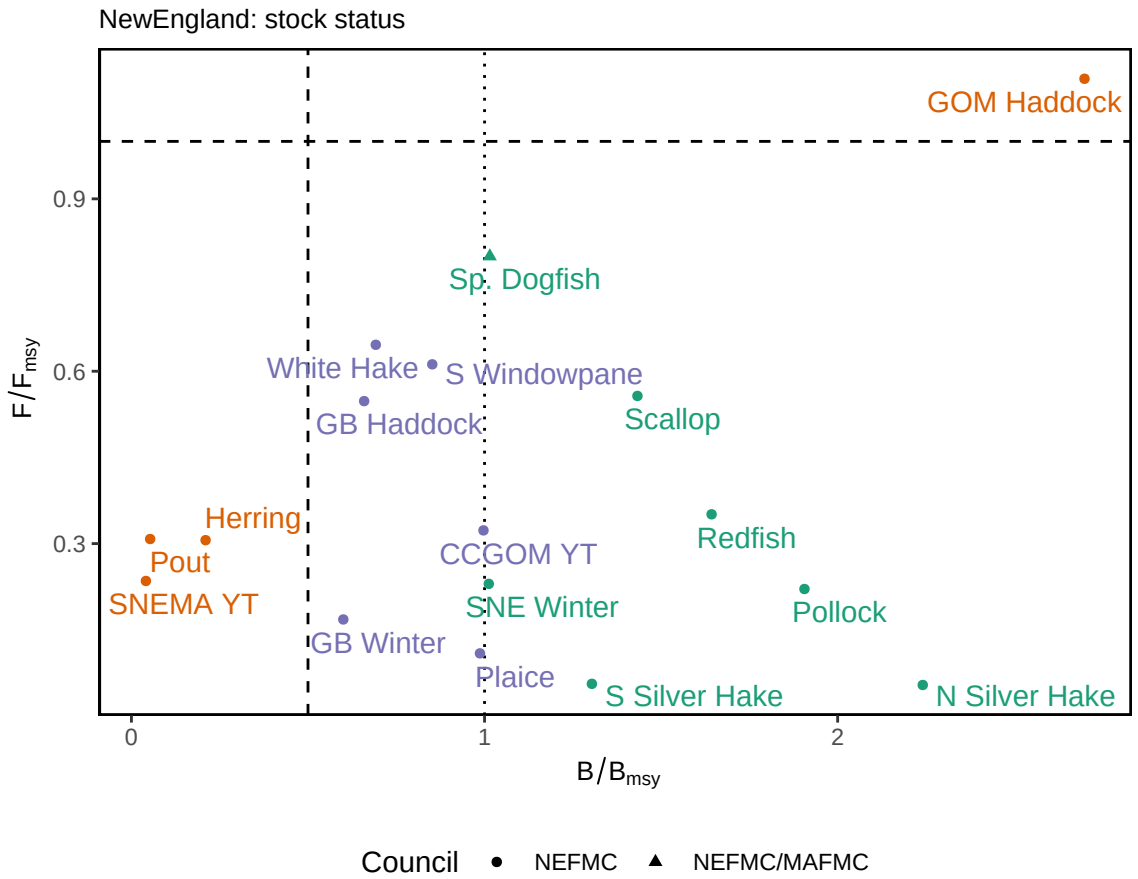


Figure 5: Summary of single species status for NEFMC and jointly federally managed stocks (goosefish and spiny dogfish). The dotted vertical line at one is the target biomass reference point of B. The dashed lines are the management thresholds of B (vertical) or F (horizontal). Colors denote stocks with $B/B_{MSY} < 0.5$ or F/F_{MSY} (orange), stocks $0.5<B/B_{MSY}<1$ (blue), and stocks $B/B_{MSY}>1$ (green).CCGOM = Cape Cod Gulf of Maine, GOM = Gulf of Maine, GB = Georges Bank, SNEMA = Southern New England Mid Atlantic

System Biomass Aggregate biomass trends derived from scientific resource surveys have been stable to increasing in both regions (Fig. 6 & Fig. 7). The benthivores group spiked during the last decade, due to a large haddock recruitment, but appears to be returning to average levels. Planktivore biomass on GB continues to rise with the highest fall biomass observed since 1968. There are also increasing trends in piscivores, and planktivores in at least one season in both regions, and benthos on Georges Bank in both seasons. The New Hampshire/Maine state survey time series is too short to estimate trends, while the Massachusetts state survey shows the increasing trend in benthivores in the spring and planktivores in the fall but a decrease in piscivores in the spring and benthos in both seasons (Fig. 8). While managed species comprise varying proportions of aggregate biomass, trends in landings are not mirroring shifts in the overall trophic structure of survey-sampled fish and invertebrates. Therefore, major shifts in feeding guilds or ecosystem trophic structure are unlikely to be driving the decline in landings.

Table 2: Unknown or partially known stock status for MAFMC and jointly managed species.

Stock	F/Fmsy	B/Bmsy
Atlantic cod - Georges Bank	-	-

Stock	F/Fmsy	B/Bmsy
Atlantic cod - Gulf of Maine	-	-
Atlantic halibut - Northwestern Atlantic Coast	-	-
Barndoor skate - Georges Bank / Southern New England	-	0.968
Clearnose skate - Southern New England / Mid-Atlantic	-	1.667
Little skate - Georges Bank / Southern New England	-	0.662
Offshore hake - Northwestern Atlantic Coast	-	-
Red deepsea crab - Northwestern Atlantic	-	-
Red hake - Gulf of Maine / Northern Georges Bank	-	-
Red hake - Southern Georges Bank / Mid-Atlantic	-	-
Rosette skate - Southern New England / Mid-Atlantic	-	1.208
Smooth skate - Gulf of Maine	-	0.741
Thorny skate - Gulf of Maine	-	0.027
Windowpane - Gulf of Maine / Georges Bank	-	-
Winter flounder - Gulf of Maine	-	-
Winter skate - Georges Bank / Southern New England	-	1.714
Witch flounder - Northwestern Atlantic Coast	-	-
Yellowtail flounder - Georges Bank	0.09	-
Goosefish - Gulf of Maine / Northern Georges Bank	-	-
Goosefish - Southern Georges Bank / Mid-Atlantic	-	-

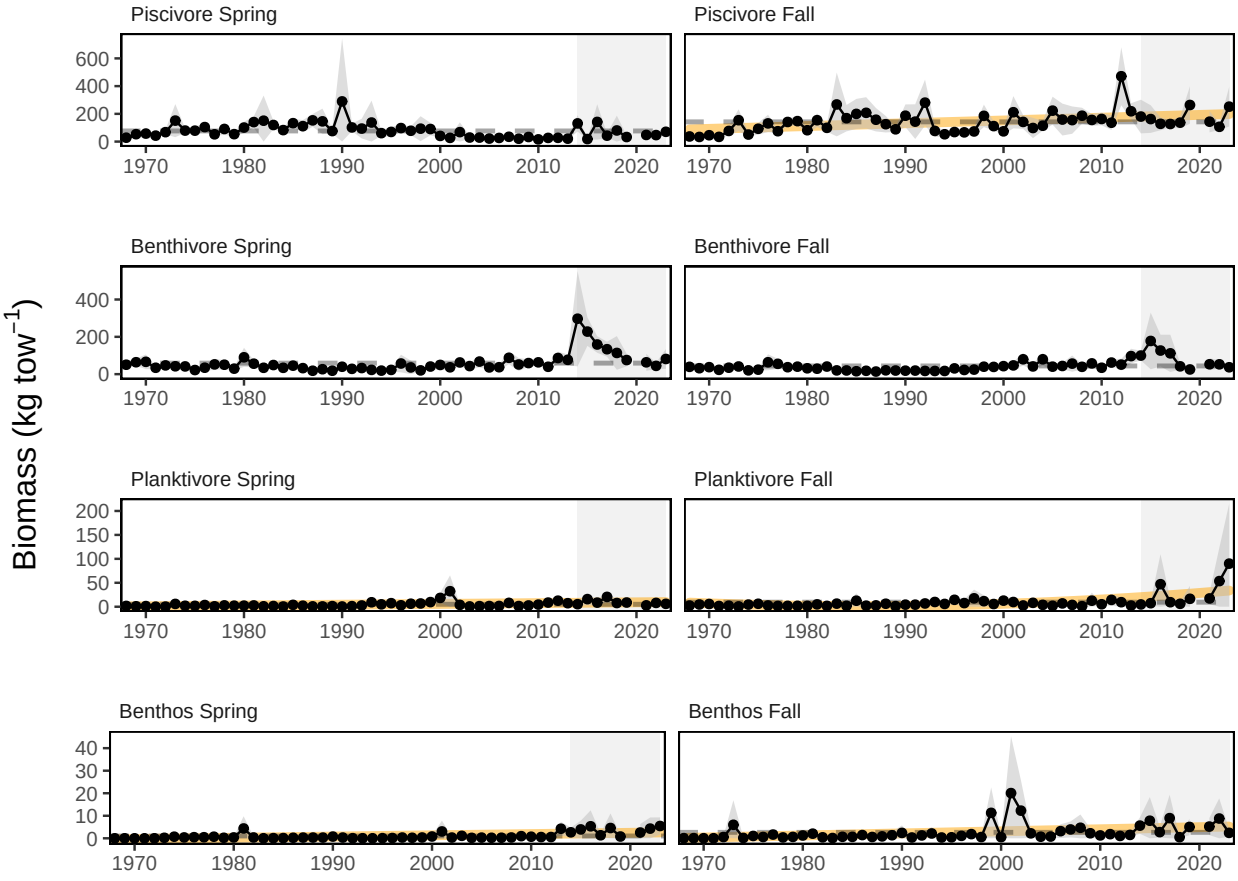


Figure 6: Spring (left) and fall (right) surveyed biomass on Georges Bank. The shaded area around each annual mean represents 2 standard deviations from the mean.

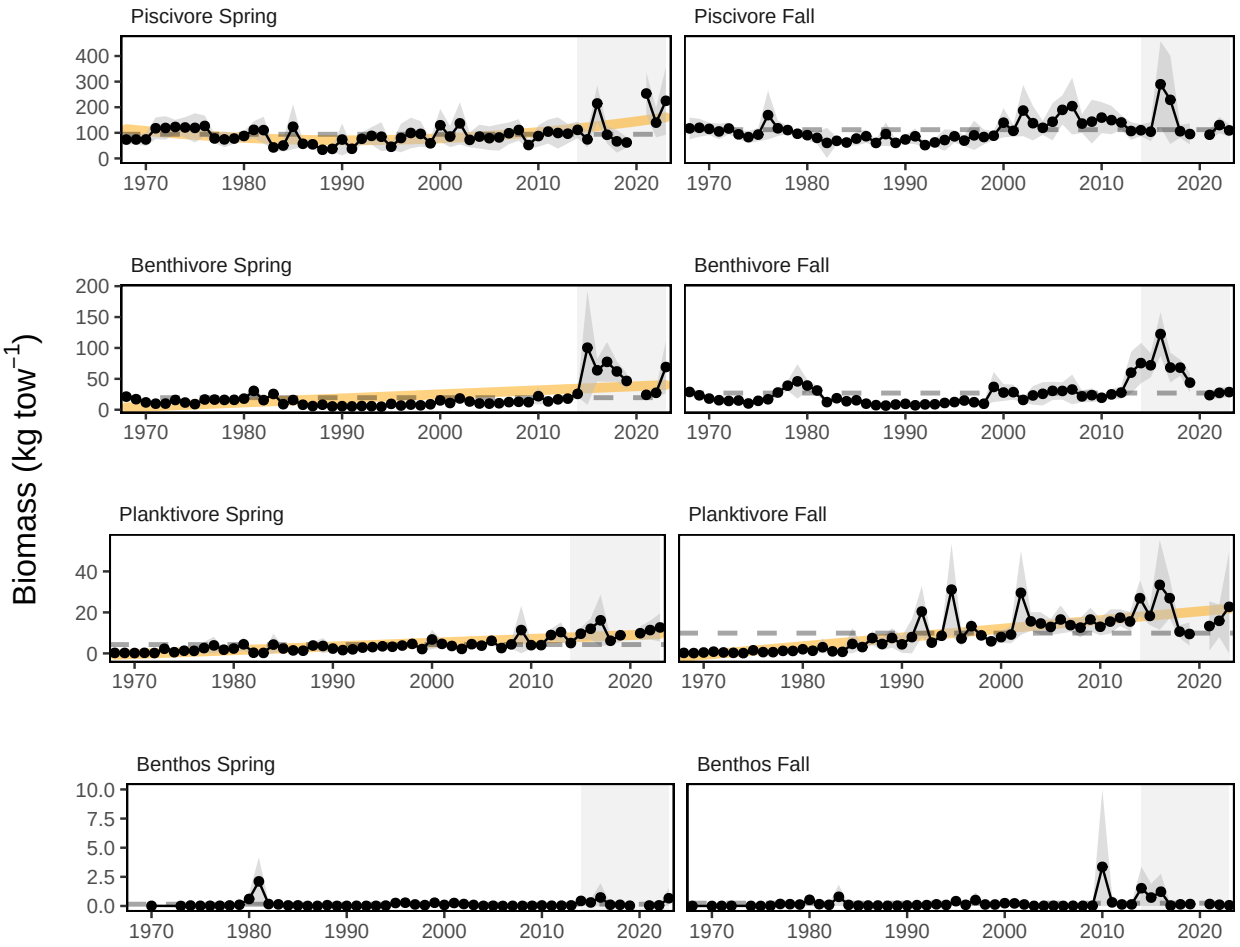


Figure 7: Spring (left) and fall (right) surveyed biomass in the Gulf of Maine. The shaded area around each annual mean represents 2 standard deviations from the mean.

Effect on Seafood Production With the poor or unknown stock status of many managed species, the decline in commercial seafood landings in the Gulf of Maine most likely reflects lower catch quotas implemented to rebuild overfished stocks, as well as market dynamics.

The decline in recreational seafood harvest stems from multiple drivers. Some of the decline, such as for recreational shark landings, continues to be driven by tightening regulations. However, changes in demographics and preferences for recreational activities likely play a role in non-HMS (Highly Migratory Species) declines in recreational harvest, with current harvests well below the time series average.

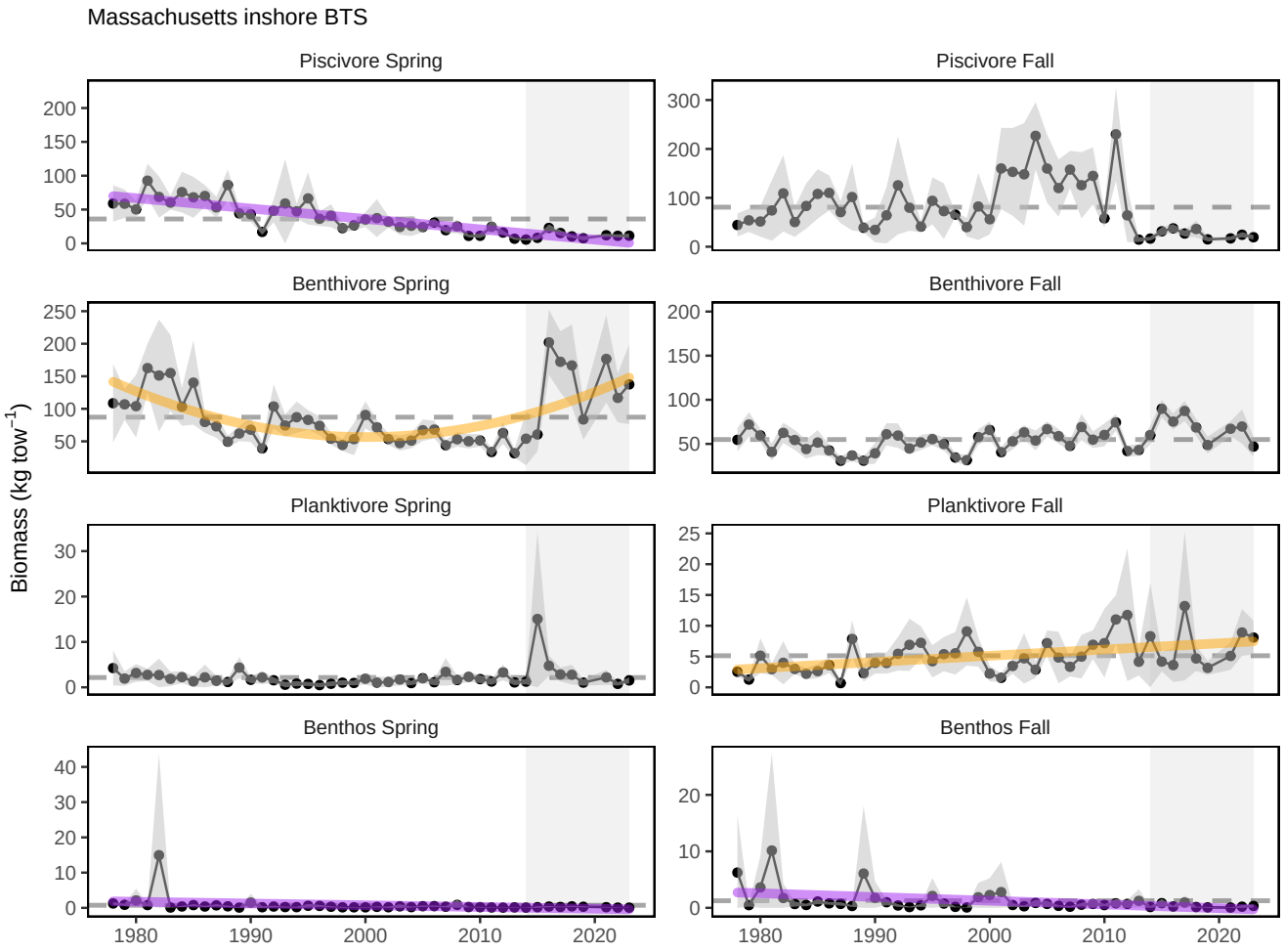


Figure 8: Spring (left) and fall (right) surveyed biomass from the state of Massachusetts inshore survey. The shaded area around each annual mean represents 2 standard deviations from the mean.

Other environmental changes require monitoring as they may become important drivers of future landings:

- Climate is trending into uncharted territory. Globally, 2023 wasthe warmest year on record[5] (see Climate Risks section).
- Stocks are shifting their distribution, moving towards the northeast and into deeper waters throughout the Northeast US Large Marine Ecosystem (Fig. 29).
- Ecosystem composition and production changes have been observed (see Stability section).
- Some fishing communities are affected by environmental justice vulnerabilities (see Environmental Justice and Social Vulnerability section).

[5] https://noaa-edab.github.io/catalog/observation_synthesis.html

Commercial Profits

Indicators: revenue (a proxy for profits)

Commercial revenue in the region has been mostly positive with total commercial revenues from all species above the long-term mean for both the GB and GOM regions in 2022 (Fig. 9). However, revenue from NEFMC managed species shows a long-term decline in the GOM. GB continues to exhibit a cyclical nature with regards to revenue, largely driven by rotational management of Atlantic sea scallops.

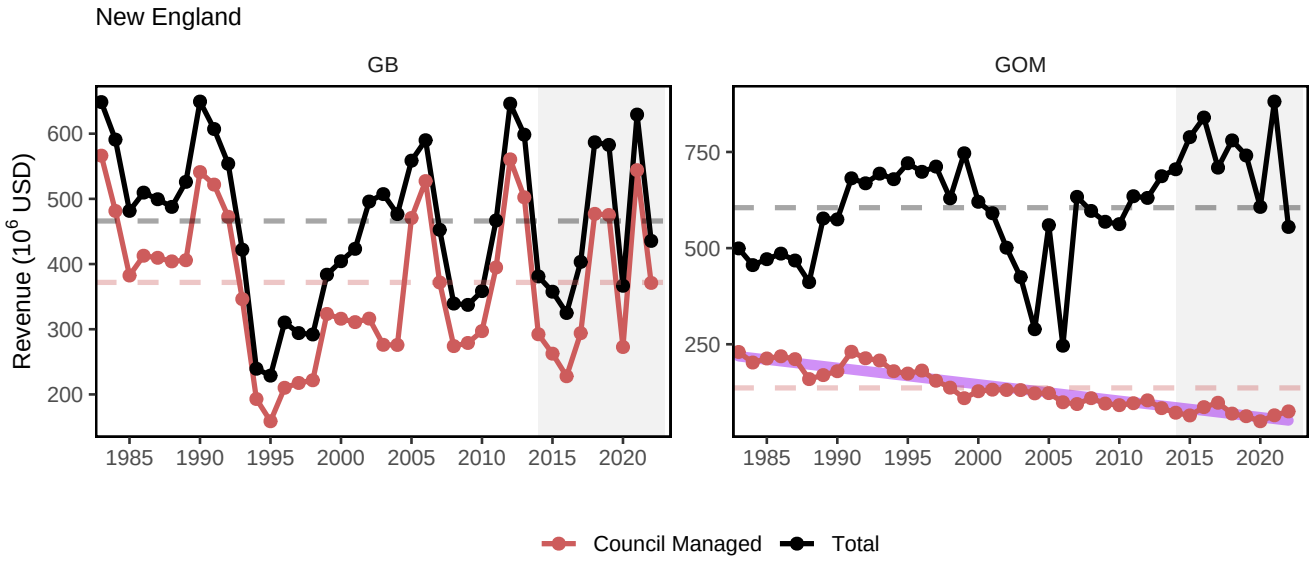


Figure 9: Revenue through 2022 for the New England region: total (black) and from NEFMC managed species (red).

Revenue earned by harvesting resources is a function of both the quantity landed of each species and the prices paid for landings. Beyond monitoring yearly changes in revenue, it is even more valuable to determine what drives these changes: harvest levels, the mix of species landed, price changes, or a combination of these. The Bennet Indicator decomposes revenue change into two parts, one driven by changing quantities (volumes), and a second driven by changing prices. All changes are in relation to a base year (1982). We note that 2022 Atlantic herring revenue data were incomplete for this report, and will be revised in future reports.

In the GB region, revenues have been consistently lower than the 1982 baseline throughout the time series. The changes in total revenue in GB was primarily driven by volumes prior to 2010, and then by prices (Fig.10). In the GOM, revenues have been above the 1982 baseline in all but four years, largely due to changing prices in most years. Breaking down the revenue by guild (Fig. 11), for GB, both the volume and price trend have been largely driven by benthos (quahogs and surfclams). In the GOM region, increased prices for benthivores drove the year-over-year increases in overall prices. Benthivores also had a large influence on the overall volume indicator in the GOM.

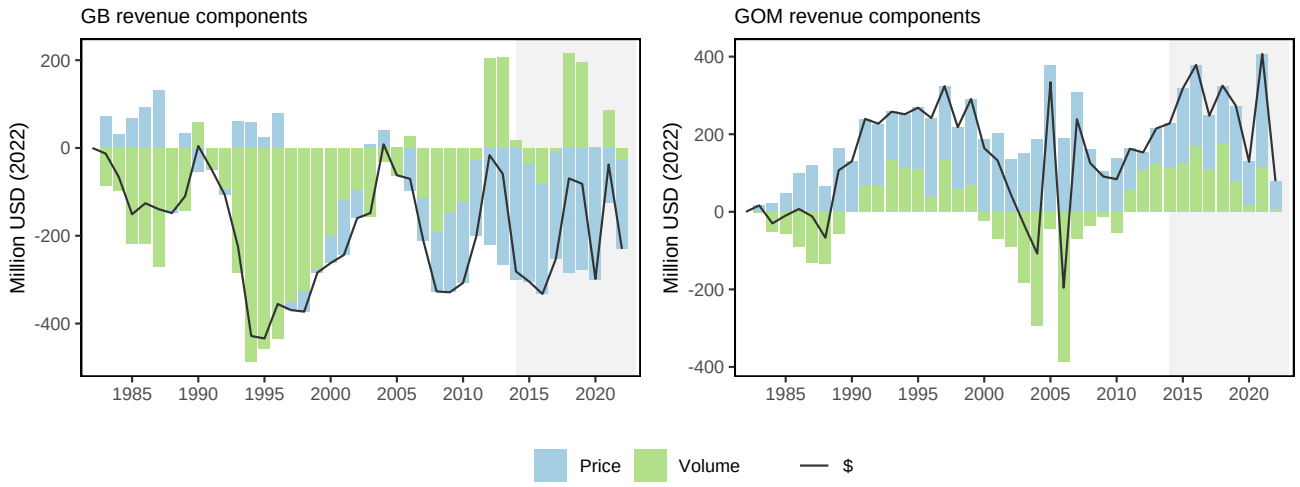


Figure 10: Revenue change from the 1982 baseline in 2022 dollars (black), price, and volume for commercial landings from Georges Bank (GB: left) and the Gulf of Maine (GOM: right)

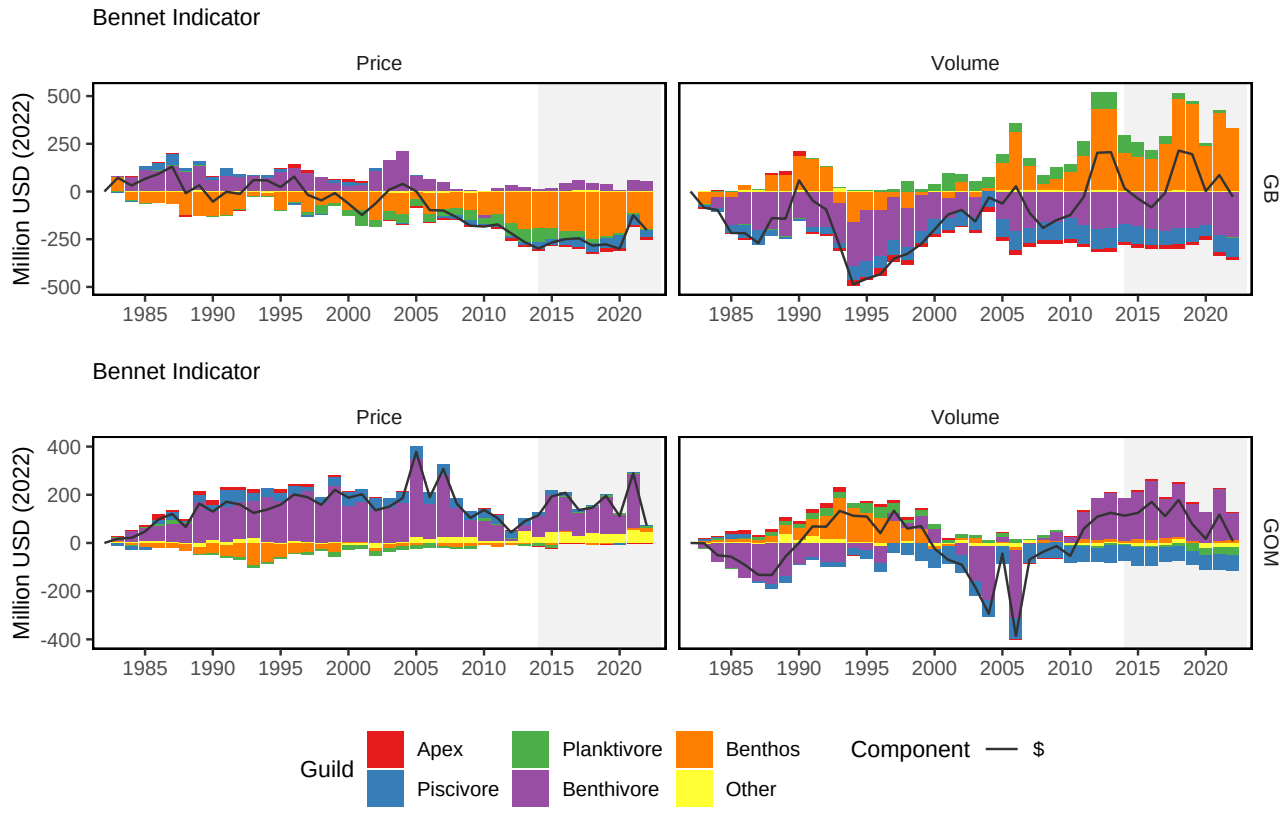


Figure 11: Revenue change from the long-term mean in 2022 dollars (black), price, and volume for commercial landings from Georges Bank (GB: top panels) and the Gulf of Maine (GOM: bottom panels)

Implications

The continued dependence on lobster in the GOM and sea scallops on GB is affected by multiple drivers including resource availability and market conditions. As both species are sensitive to ocean warming and acidification, it is important to monitor these and other climate drivers.

Recreational Opportunities

Indicators: Angler trips, fleet diversity

Recreational effort (angler trips) increased during 1982-2010, but has since declined to the long-term average (Fig. 12). Recreational fleets are defined as private vessels, shore-based fishing, or party-charter vessels. Recreational fleet diversity, or the relative importance of each fleet type, has remained relatively stable over the latter half of the time series (Fig. 13).

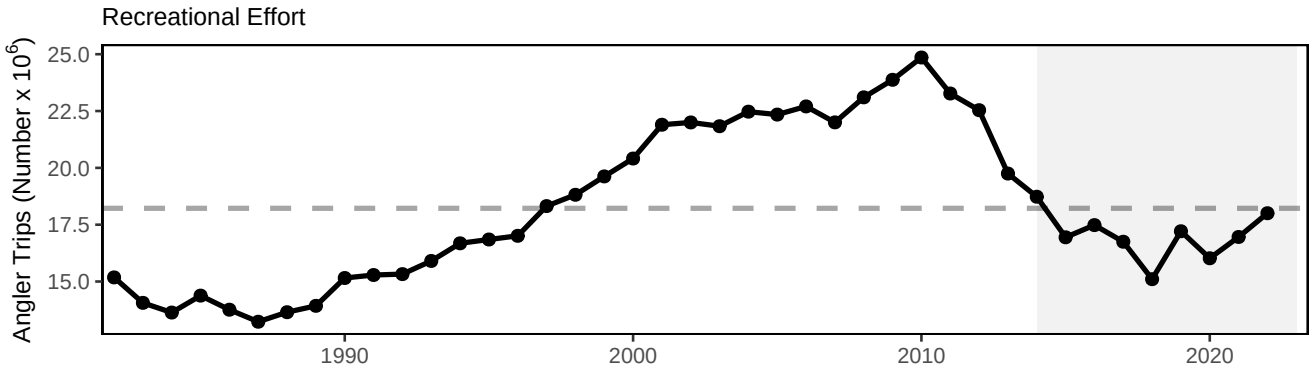


Figure 12: Recreational effort in New England.

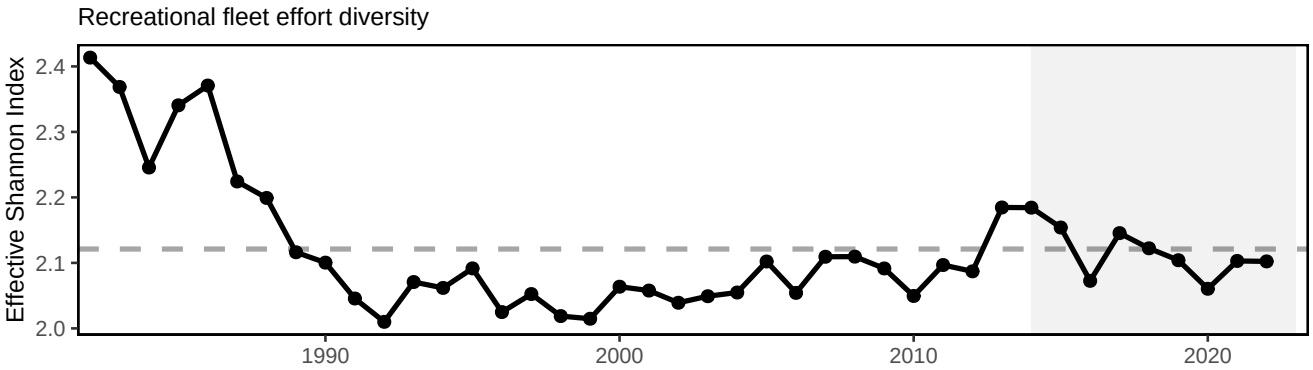


Figure 13: Recreational fleet effort diversity in New England.

Implications

The absence of a long term trend in recreational angler trips and fleet effort diversity suggests relative stability in the overall number of recreational opportunities in the region.

Stability

Indicators: fishery fleet and catch diversity, ecological component diversity, total primary production

While there are many potential metrics of stability, we use diversity indices to evaluate overall stability in fisheries and ecosystems. In general, diversity that remains constant over time suggests a similar capacity to respond to change over time. A significant change in diversity over time does not necessarily indicate a problem or an improvement, but does indicate a need for further investigation. We examine diversity in commercial fleet and species catch, and recreational species catch (with fleet effort diversity discussed above), zooplankton, and adult fishes.

Fishery Stability Diversity estimates have been developed for species landed by commercial vessels with New England permits and fleets landing managed species. Although the effective number of species being landed in the commercial fleet rebounded slightly from the historical low of 2021, the diversity in catch is still well below the series average (Fig. 14). Commercial fishery fleet count is also below the time series average.

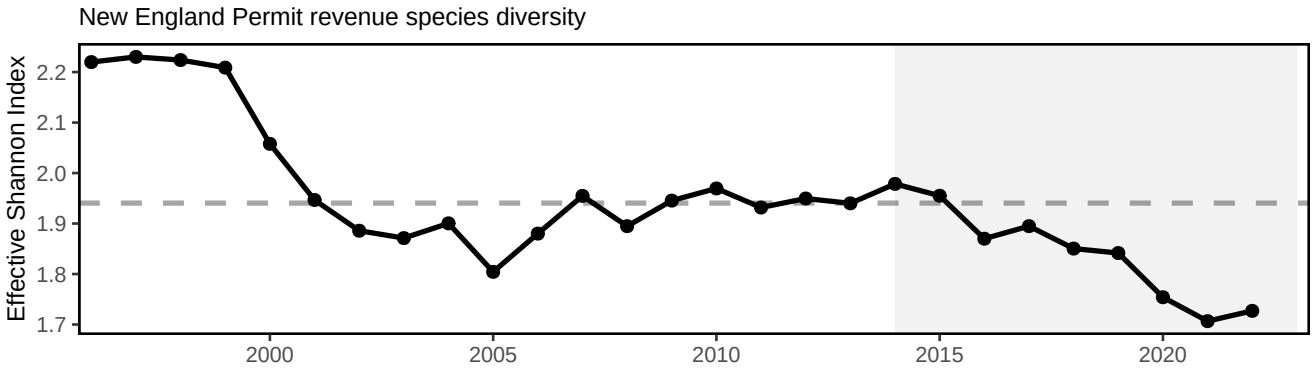


Figure 14: Species revenue diversity in New England.

As noted above, recreational fleet effort diversity is stable. However, recreational species catch diversity has been above the time series average since 2008 with a long-term positive trend (Fig. 15).

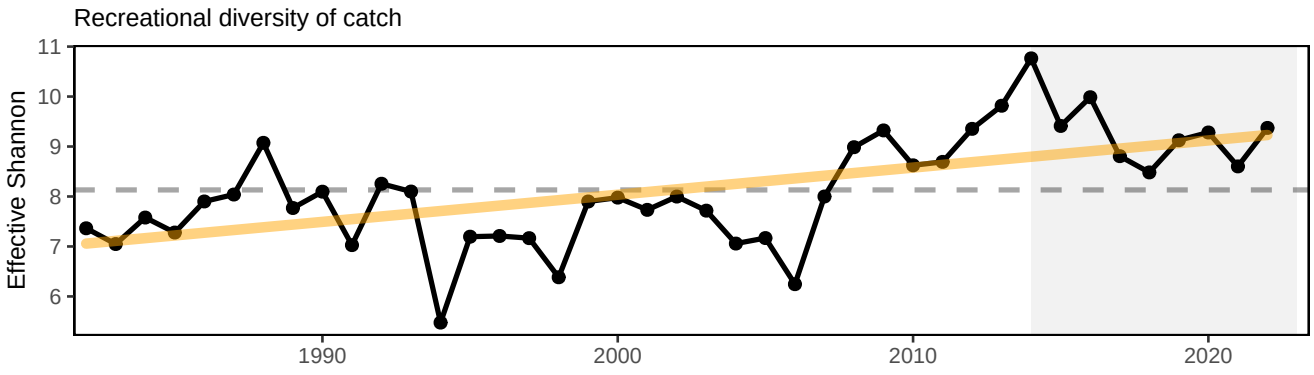


Figure 15: Diversity of recreational catch in New England.

Ecological Stability Total primary production (PP) is a measure of the total energy input into a system per year. 2023 saw record high PP in the GOM, which may indicate a change in system-wide processes.

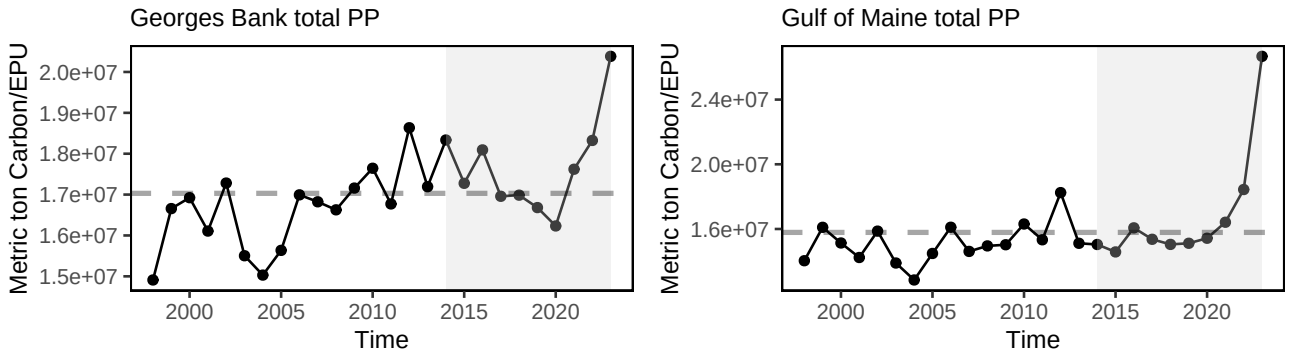


Figure 16: Total areal annual primary production by ecological production unit. The dashed line represents the long-term (1998-2023) annual mean.

Ecological diversity indices show mixed trends. Zooplankton diversity is increasing on GB, while no trend is evident in the GOM (Fig. 17). However, it is worth noting that the 2021 index for the GOM is the highest observed. Adult fish diversity shows an increasing trend in the GOM and no trend on GB (Fig. 18). This metric is measured as the expected number of species in a standard number of individuals sampled from the NEFSC bottom trawl survey.

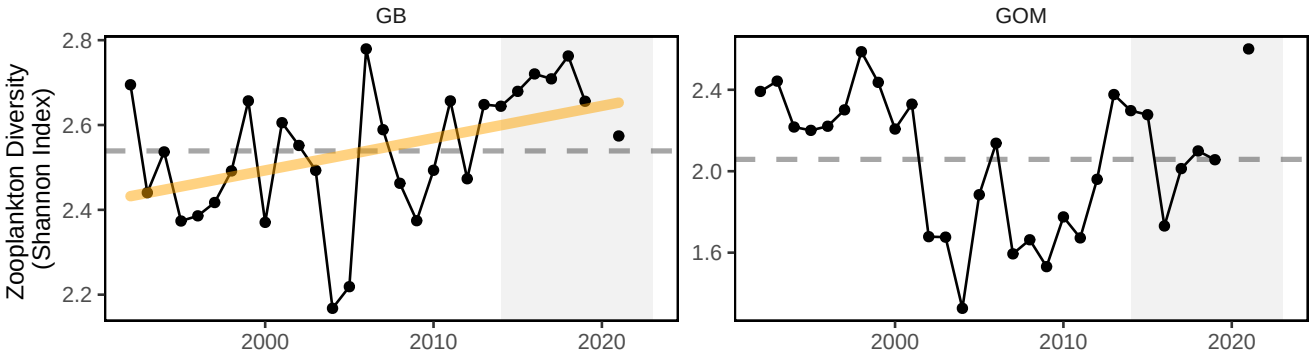


Figure 17: Zooplankton diversity on Georges Bank and in the Gulf of Maine, based on Shannon diversity index. 2020 surveys were incomplete due to COVID-19.

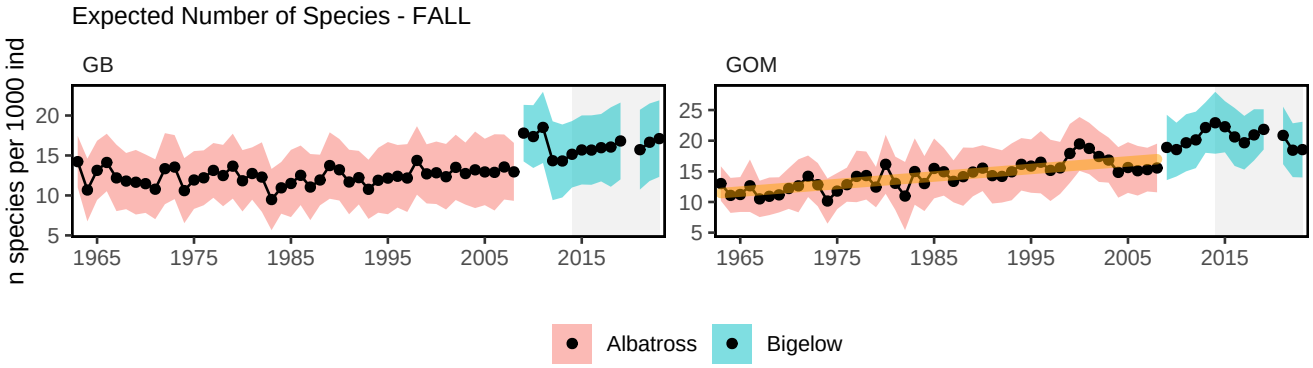


Figure 18: Adult fish diversity for Georges Bank and in the Gulf of Maine, based on expected number of species. Results from survey vessels Albatross and Bigelow are reported separately due to catchability differences.

Implications

Fleet diversity indices can be used to evaluate stability objectives as well as risks to fishery resilience and to maintain equity in access to fishery resources. The relatively low diversity estimates for the commercial fishery are likely driven by the continued reliance on a few species, such as sea scallops and lobster. This trend could diminish the capacity to respond to future fishing opportunities. Meanwhile, the increase in recreational species catch diversity is due to recent increases in Atlantic States Fisheries Management Council (ASFMC) and MAFMC managed species within the region, offsetting decreased limits on more traditional regional species.

Ecological diversity indices can provide insight into ecosystem structure. Changes in ecological diversity over time may indicate altered ecosystem structure with implications for fishery productivity and management. Increasing zooplankton diversity in GB is attributed to an overall increase in zooplankton abundance and the declining dominance of the calanoid copepod *Centropages typicus*. Stable adult fish diversity on GB suggests the same overall number and evenness over time, but does not rule out species substitutions (e.g., warm-water species replacing cold-water ones). Increasing adult diversity in the GOM suggests an increase in warm-water species and should be closely monitored.

As a whole, the examined diversity indicators suggest changes in commercial and recreational fisheries, likely driven by changes in the mix of species landed. However, there seems to be overall stability in ecosystem components. Increasing diversity in the recreational catch, GB zooplankton, and GOM adult fish accompanied by lows in commercial fleet diversity metrics, suggests warning signs of a potential regime shift or ecosystem restructuring and warrants continued monitoring to determine if managed species are affected.

Environmental Justice and Social Vulnerability

Indicators: Environmental Justice and Social Vulnerability in commercial and recreational fishing communities

Social vulnerability measures social factors that shape a community's ability to adapt to change. A subset of these can be used to assess potential environmental justice issues. We report the top ten communities most engaged in, and/or reliant upon, commercial and recreational fisheries and the degree to which these communities may be vulnerable to environmental justice issues (i.e., Poverty, Population Composition, and Personal Disruption) based on 2021 data. The engagement and reliance indices demonstrate the importance of commercial and recreational fishing to a given community relative to other coastal communities in a region. Similarly, the environmental justice indices characterize different facets and levels of social vulnerability in a given community relative to other coastal communities in a region.

Two commercial fishing communities (Stonington and Beals, ME) scored high for both engagement and reliance based on 2021 data (Fig. 19). New Bedford and Boston, MA and Swans Island, ME ranked medium-high or above for one or more of the environmental justice indicators in 2021 (Fig. 20). Swan's Island has considerable unemployment concerns, but does not have the same demographic and age structure concerns as Boston or New Bedford. Port Clyde-Tenants Harbor and Stonington, ME ranked medium for one or more of the environmental justice indicators. Decreased commercial fishing engagement/reliance led to Winter Harbor, ME no longer being listed as a top ten commercial fishing community.

In New England, Dennis and Bourne, MA scored high for both recreational engagement and reliance, whereas no communities did previously (Fig. 21). Seabrook and Newington, NH; Sandwich and Yarmouth, MA; Groton and Clinton, CT have decreased in their recreational engagement/reliance and are no longer listed as top ten recreational communities, replaced by Barnstable Town, Plymouth, Falmouth, and Chatham, MA; Sronington, CT; Tiverton and New Shoreham, RI. There are no communities ranked medium-high or above for environmental justice indicators (Fig. 22). Communities that ranked medium for one or more of the environmental justice indicators including Falmouth and Dennis, MA.

Narragansett/Point Judith, like all of these top recreational communities ranked low for environmental justice vulnerability. In fact, the scores below 0 for all three environmental justice indicators implies a lower than average level of vulnerability, based on recreational engagement and reliance, among the communities included in the analysis.

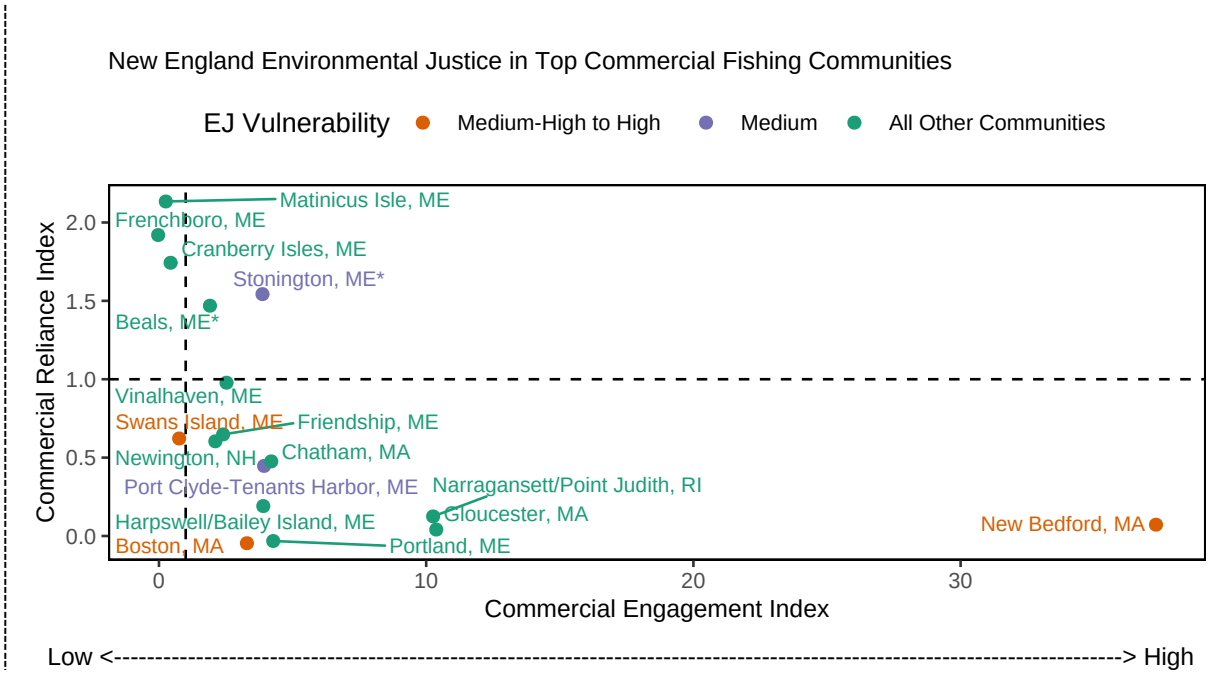


Figure 19: Commercial engagement, reliance, and environmental justice vulnerability for the top commercially engaged and reliant fishing communities in New England. Communities in orange are ranked medium-high or above for one or more of the environmental justice indicators. Communities in purple are ranked medium for one or more of the environmental justice indicators. *Community scored high (1.00 and above) for both commercial engagement and reliance indicators.

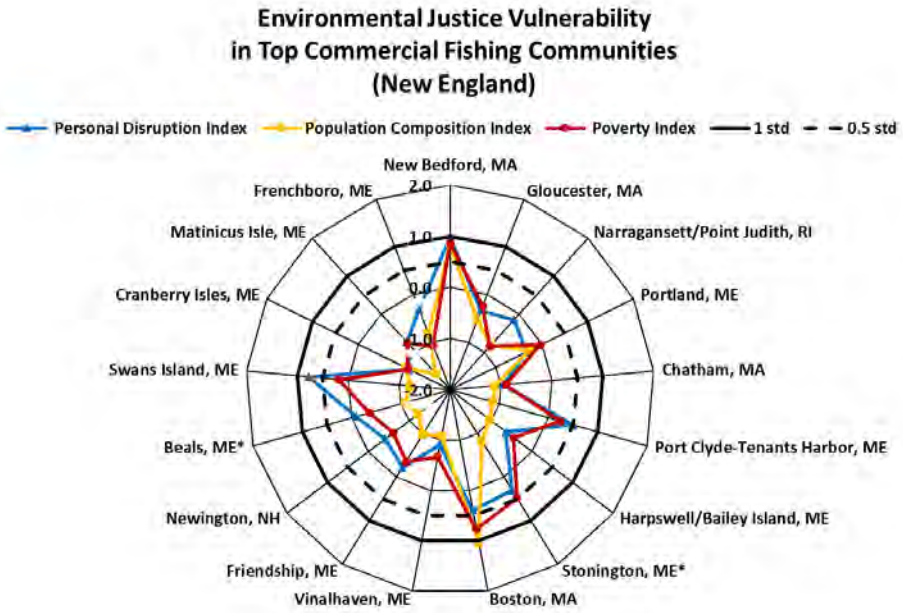


Figure 20: Environmental justice indicators (Poverty Index, population composition index, and personal disruption index) for top commercial fishing communities in New England. *Community scored high (1.00 and above) for both commercial engagement and reliance indicators.

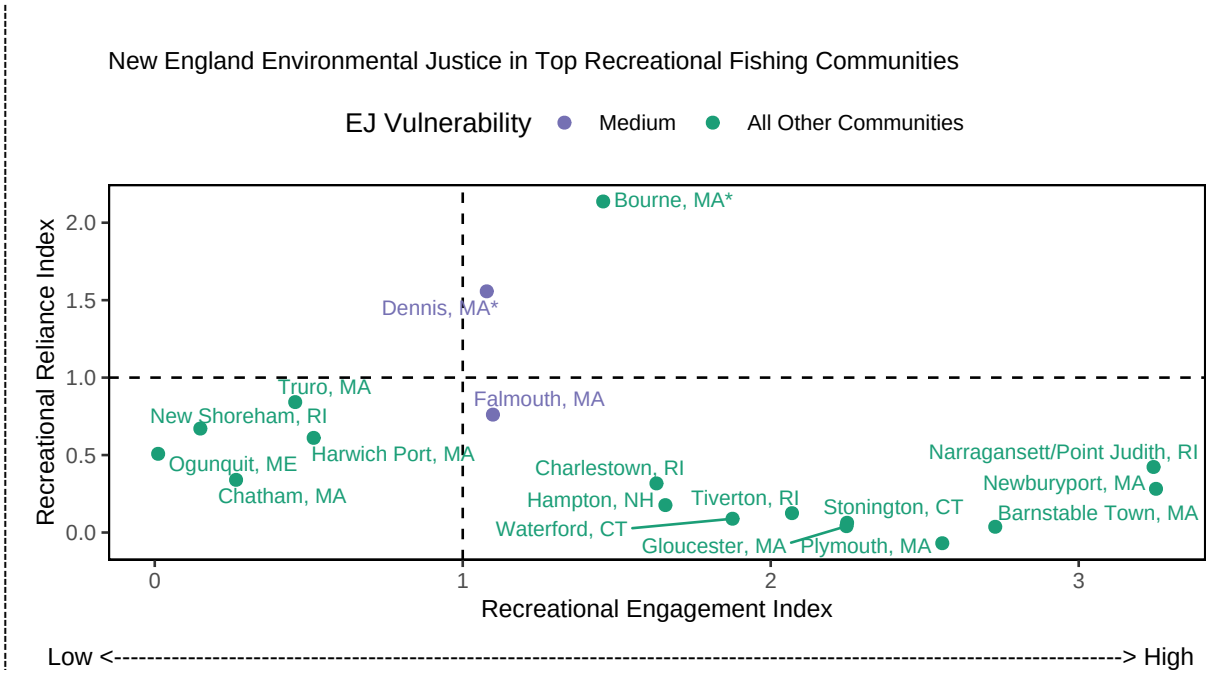


Figure 21: Recreational engagement and reliance, and environmental justice vulnerability, for the top recreationally engaged and reliant fishing communities in New England. None of these communities ranked medium-high or above for one or more of the environmental justice indicators. Communities ranked medium for one or more of the environmental justice indicators are highlighted in purple. *Community scored high (1.00 and above) for both recreational engagement and reliance indicators.

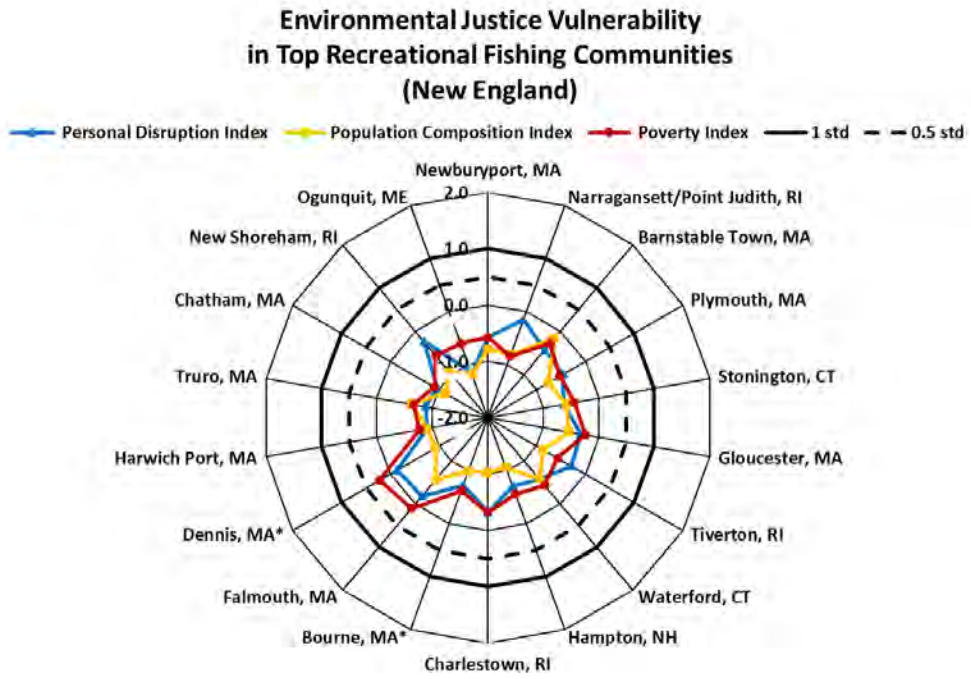


Figure 22: Environmental justice indicators (Poverty Index, population composition index, and personal disruption index) for top recreational fishing communities in New England. *Community scored high (1.00 and above) for both commercial engagement and reliance indicators.

Both commercial and recreational fishing are important activities in Narragansett/Point Judith, RI; Gloucester and Chatham, MA, meaning these communities may be impacted simultaneously by commercial and recreational regulatory changes. These three communities currently score low for all of the three environmental justice indicators, indicating that environmental justice may not be a major concern in these communities at the moment based on the indicators analyzed.

Implications

These indicators provide a snapshot of the presence of environmental justice issues in the most highly engaged and most highly reliant commercial and recreational fishing communities in New England. These communities may be especially vulnerable to changes in fishing patterns due to regulations and/or climate change. A range of environmental justice concerns are found throughout New England fishing communities. However, index scores for these concerns are higher overall in the top commercial communities relative to the top recreational communities. Some changes occurred among the top recreational fishing communities between 2020 and 2021 due to shifts in recreational fishing activities, while the top commercial communities remained stable. A few of these top fishing communities, mostly commercial fishing communities, demonstrated medium to high environmental justice vulnerability, indicating that they may be at a disadvantage responding to change.

Protected Species

Fishery management objectives for protected species generally focus on reducing threats and on habitat conservation/restoration. Protected species include marine mammals protected under the Marine Mammal Protection Act, endangered and threatened species protected under the Endangered Species Act, and migratory birds protected under the Migratory Bird Treaty Act. In the Northeast U.S., endangered/threatened species include Atlantic salmon, Atlantic and shortnose sturgeon, all sea turtle species, and five baleen whales. Protected species objectives include managing bycatch to remain below potential biological removal (PBR) thresholds, recovering endangered populations, and monitoring unusual mortality events (UMEs). Here we report on performance relative to these objectives with available indicator data, as well as indicating the potential for future interactions driven by observed and predicted ecosystem changes in the Northeast U.S.

Indicators: bycatch, population (adult and juvenile) numbers, mortalities

Average indices for both harbor porpoise (Fig. 23) and gray seal bycatch (Fig. 24) are below current PBR thresholds, meeting management objectives.

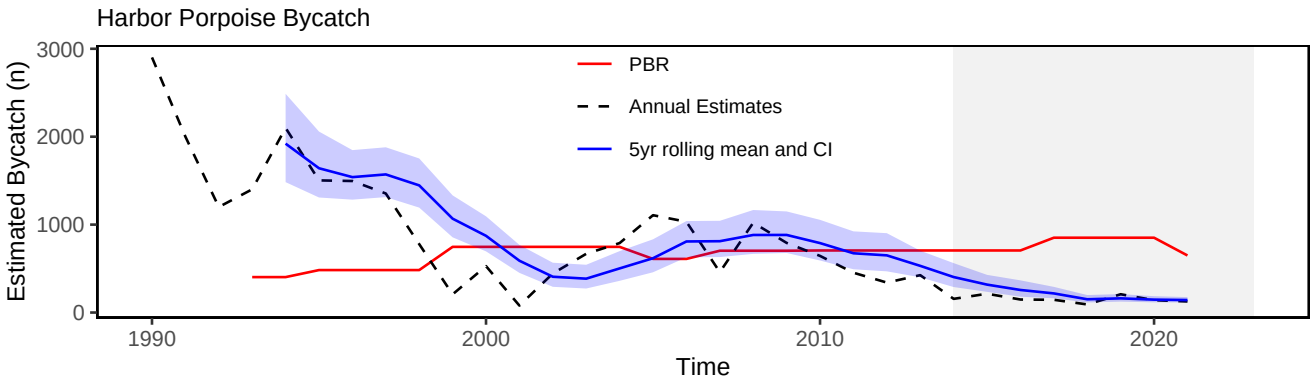


Figure 23: Harbor porpoise average bycatch estimate for Mid-Atlantic and New England gillnet fisheries (blue) and the potential biological removal (red).

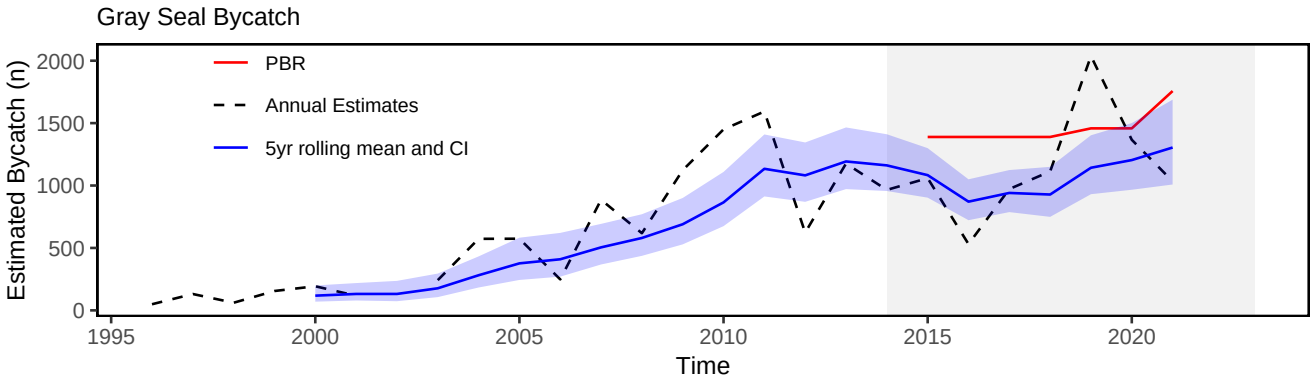


Figure 24: Gray Seal average bycatch estimate for gillnet fisheries (blue) and the potential biological removal (red).

The annual estimate for gray seal bycatch has declined since 2019, in part driven by declining gillnet landings. In addition, estimates since 2019 have greater uncertainty stemming from low observer coverage since 2019. The rolling mean confidence interval remains just below the PBR value.

The North Atlantic right whale population was on a recovery trajectory until 2010, but has since declined (Fig. 25). The sharp decline observed from 2015-2020 appears to have slowed, although the right whale population continues to experience annual mortalities above recovery thresholds. Reduced survival rates of adult females lead to diverging abundance trends between sexes. It is estimated that there are fewer than 70 adult females remaining in the population.

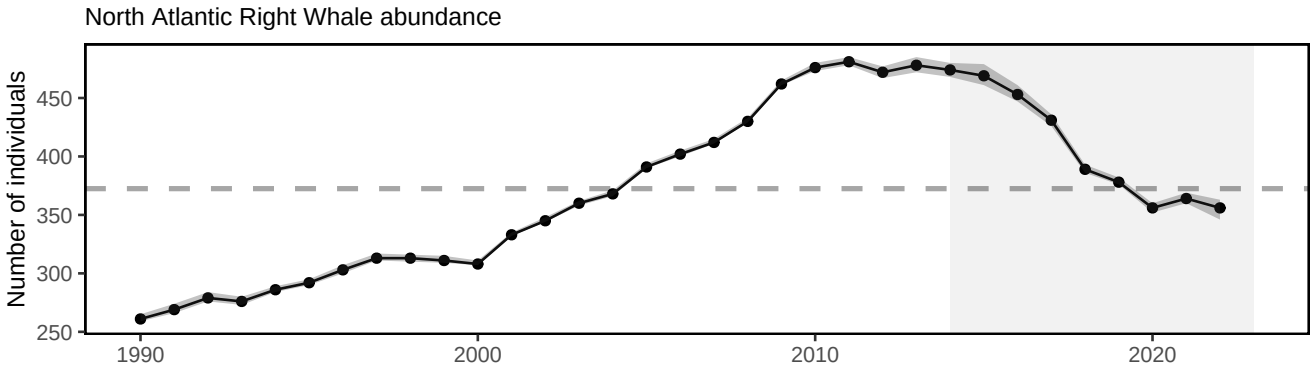


Figure 25: Estimated North Atlanic right whale abundance on the Northeast Shelf.

North Atlantic right whale calf counts have generally declined after 2009 to the point of having zero new calves observed in 2018 (Fig. 26). However, since 2019, we have seen more calf births each year with 15 births in 2022.

This year, the Unusual Mortality Event (UME) for North Atlantic right whales continued. Since 2017, the total UME right whale mortalities includes 36 dead stranded whales, 15 in the U.S. and 21 in Canada. When alive but seriously injured whales (35) and sublethal injuries or ill whales (51) are taken into account, 122 individual whales are included in the UME. Recent research suggests that many mortalities go unobserved and the true number of mortalities are about three times the count of the observed mortalities. The primary cause of death is "human interaction" from entanglements or vessel strikes.

A UME continued from previous years for humpback whales (2016-present); suspected causes include human interactions. A UME for both gray and harbor seals on the Maine coast was declared in June 2022 due to a high number of mortalities thought to be caused by highly pathogenic avian influenza virus. A UME for minke whales that began in 2017 remains open, but is pending closure as of January 2024.

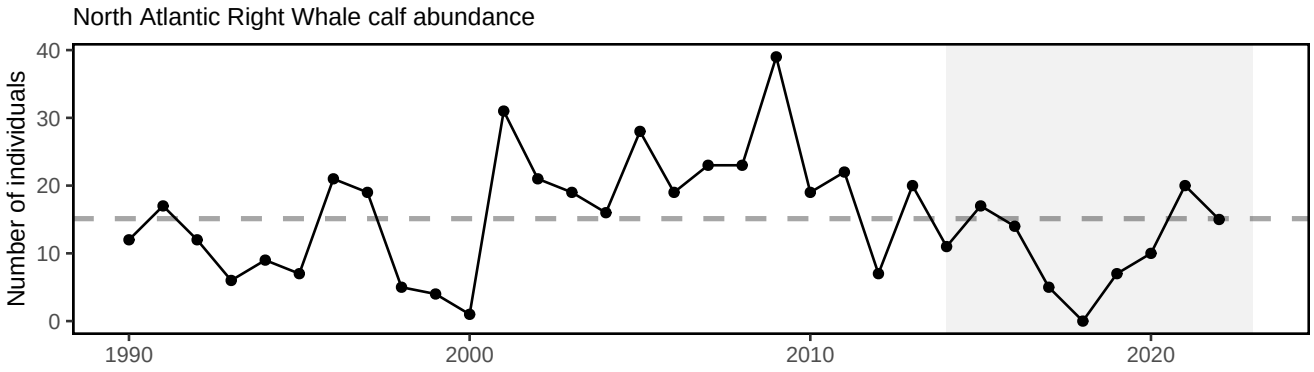


Figure 26: Number of North Atlantic right whale calf births, 1990 - 2021.

Implications

Bycatch management measures have been implemented to maintain bycatch below PBR thresholds. The downward trend in harbor porpoise bycatch can also be due to a decrease in harbor porpoise abundance in U.S. waters, reducing their overlap with fisheries, and a decrease in gillnet effort. The increasing trend in gray seal bycatch may be related to an increase in the gray seal population (U.S. pup counts), supported by the dramatic rise over the last three decades in observed numbers of gray seal pups born at U.S. breeding sites plus an increase in adult seals at the breeding sites (Fig. 27), some of which are supplemented by Canadian adults.

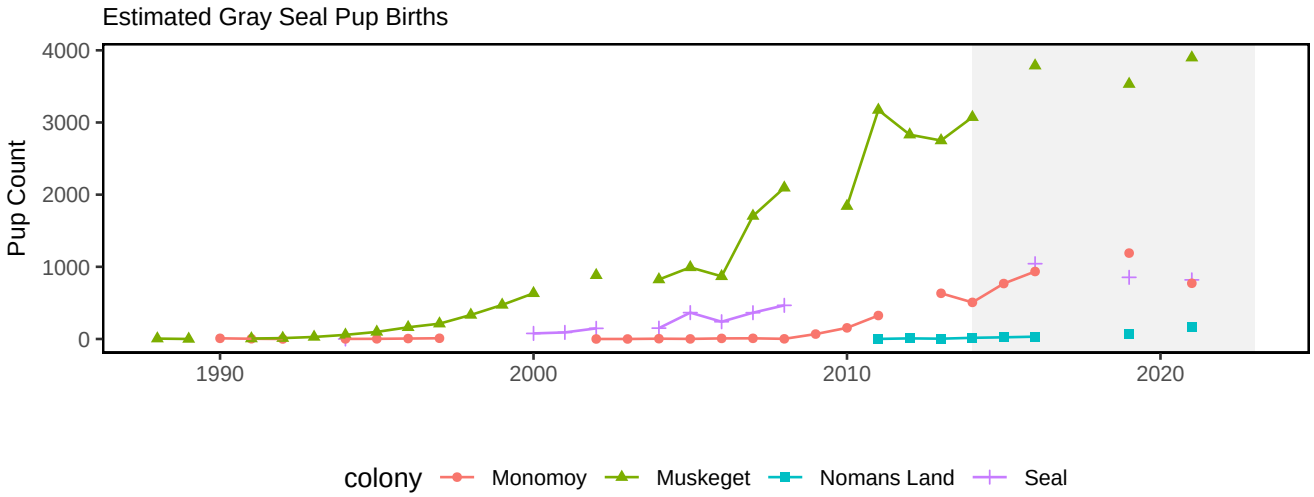


Figure 27: Estimated number of gray seal pups born at four United States pupping colonies at various times from 1988 to 2021. Recreated from Wood et al. 2022 (Figure 5).

Strong evidence exists to suggest that interactions between right whales and both the fixed gear fisheries in the U.S. and Canada and vessel strikes in the U.S. are contributing substantially to the decline of the species. Further, right whale distribution has changed since 2010. New research suggests that recent climate driven changes in ocean circulation have resulted in right whale distribution changes driven by increased warm water influx through the Northeast Channel, which has reduced the primary right whale prey (*Calanus finmarchicus*) in the central and eastern portions of the Gulf of Maine. Additional potential stressors include offshore wind development, which overlaps with important habitat areas used year-round by right whales, including mother and calf migration corridors and foraging habitat. This area is also a primary right whale winter foraging habitat. Additional information can be found in the offshore wind risks section.

A UME continued from previous years for humpback whales (2016-present) and Atlantic minke whales (2018-present); suspected causes include human interactions. A UME for Northeast pinnipeds that began in 2018 for infectious disease is pending closure as of February 2024.

A climate vulnerability assessment is published for Atlantic and Gulf of Mexico marine mammal populations.

Risks to meeting fishery management objectives

Climate and Ecosystem Change

Regulations and measures designed to meet fishery management objectives are often based on historical information about stocks, their distribution in space and time, and their overall productivity. Large scale climate related changes in the ecosystem can lead to changes in important habitats and ecological interactions, altering distributions and productivity. With large enough ecosystem changes, management measures may be less effective and management objectives may not be met.

This year, we restructured this section to focus on three categories of management decisions and the risk posed to them by climate and ecosystem change: spatial management, seasonal management, and quota setting or rebuilding depleted stocks. In each section, we describe potential risks to the management category, highlight indicators of observed changes that contribute to those risks, and review possible biological and environmental drivers and the ways they may explain the observed indicators.

Risks to Spatial Management

Shifting species distributions (changes in spatial extent or center of gravity) alter both species interactions and fishery interactions. In particular, shifting species distributions can affect expected management outcomes from spatial allocations and bycatch measures based on historical fish and protected species distributions. Additionally, species availability to surveys can change as distributions shift within survey footprints.

Indicator: Fish and protected species distribution shifts As noted in the landings implications section above, the center of distribution for a suite of 48 commercially or ecologically important fish species along the entire Northeast Shelf continues to show movement towards the northeast and generally into deeper water (Fig. 29). Habitat model-based species richness suggests shifts of both cooler and warmer water species to the northeast. Similar patterns have been found for marine mammals, with multiple species shifting northeast between 2010 and 2017 in most seasons (Fig. 28).

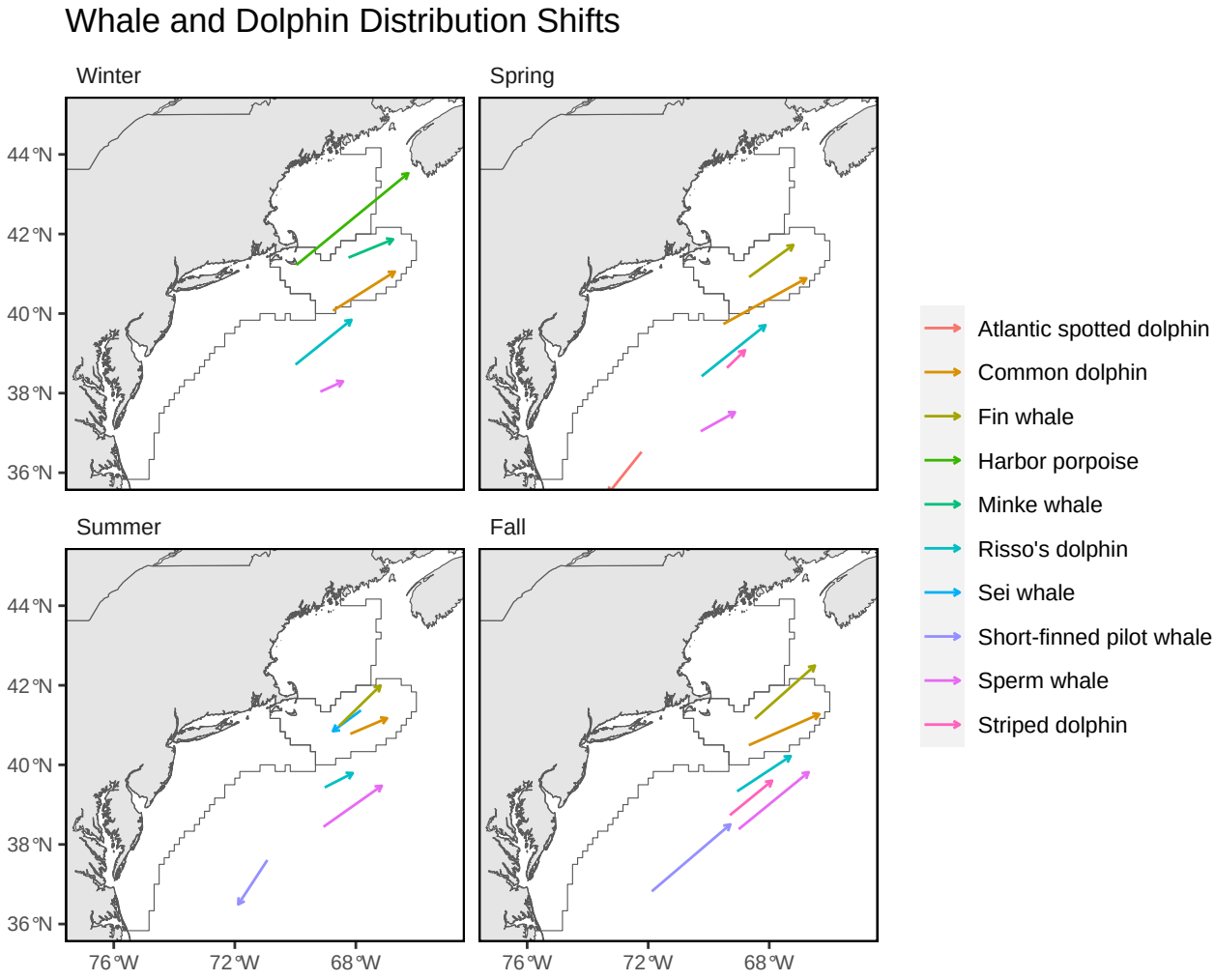


Figure 28: Direction and magnitude of core habitat shifts, represented by the length of the line of the seasonal weighted centroid for species with more than 70 km difference between 2010 and 2017 (tip of arrow).

Drivers Mobile populations are shifting distributions to maintain suitable temperature and prey fields, possibly expanding if new suitable habitat exists. Changes in managed species distribution is related, in part, to the distribution of forage biomass. Since 1982, the fall center of gravity of forage fish (20 species combined) has moved to the north and east. Spring forage fish center of gravity has been more variable over time.

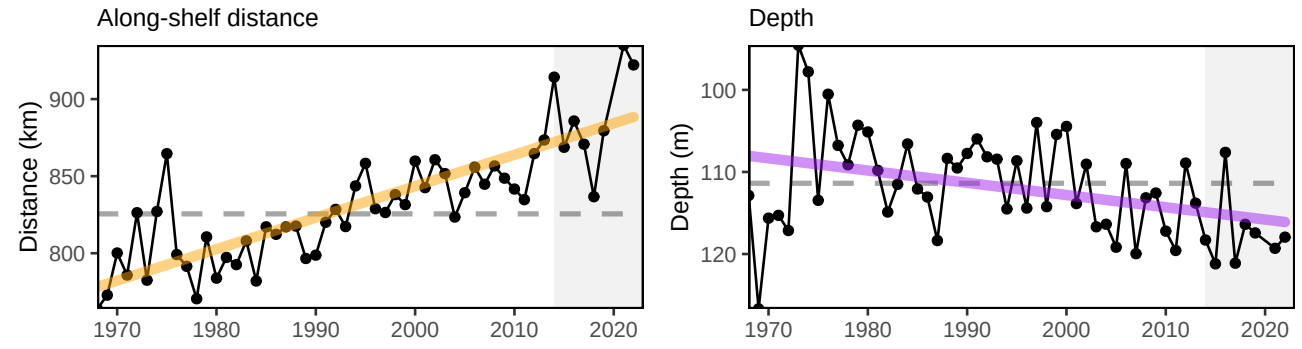


Figure 29: Aggregate species distribution metrics for species in the Northeast Large Marine Ecosystem.

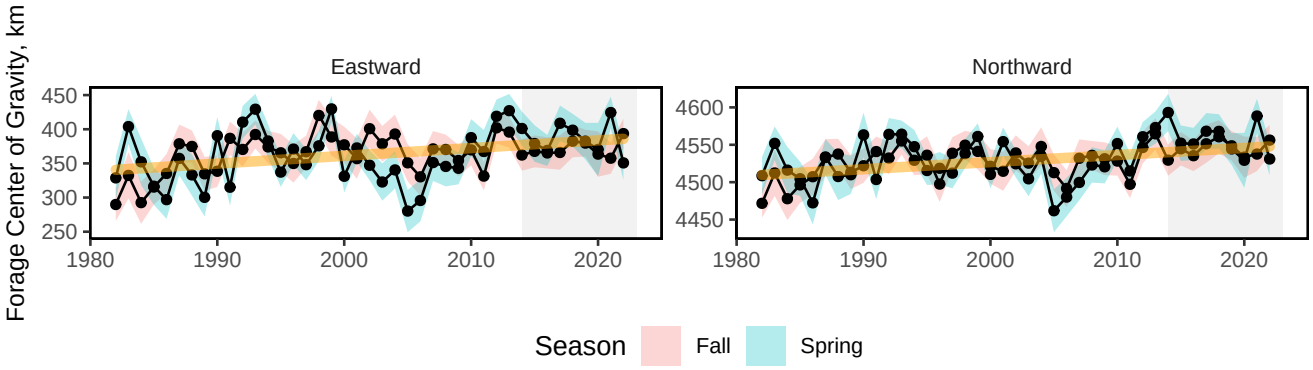


Figure 30: Eastward (left) and northward (right) shifts in the center of gravity for 20 forage fish species on the Northeast U.S. Shelf.

Ocean temperatures influence the distribution, seasonal timing of migrations and spawning, as well as the productivity of managed species (see sections below). New England has experienced a continued warming trend for both the surface (Fig.31) and in all seasons.

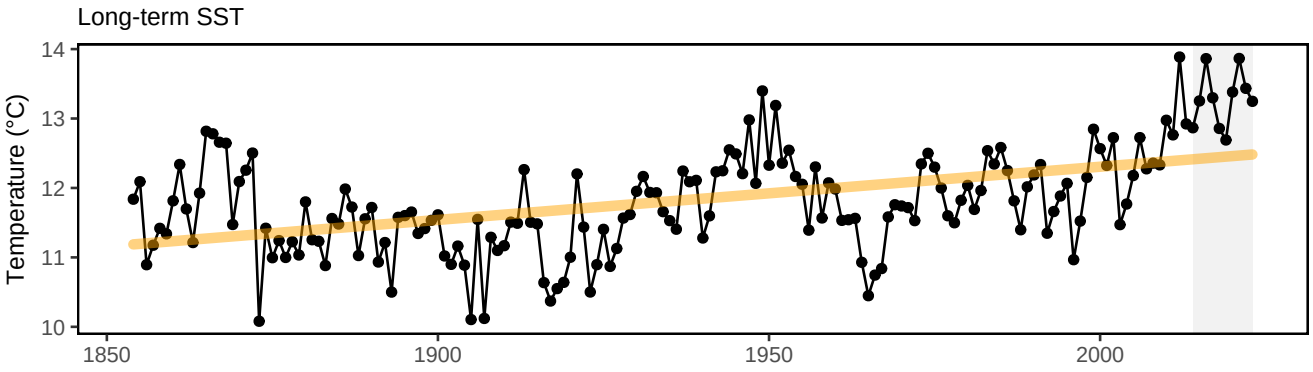


Figure 31: Mean sea surface temperature across the entire Mid-Atlantic shelf.

Species' suitable habitat can expand or contract when changes in temperature and major oceanographic conditions alter distinct water mass habitats. The variability of the Gulf Stream is a major driver of the predominant

oceanographic conditions of the Northeast U.S. continental shelf. As the Gulf Stream has become less stable and shifted northward in the last decade (Fig. 32), warmer ocean temperatures have been observed on the northeast shelf and a higher proportion of Warm Slope Water has been present in the Gulf of Maine Northeast Channel. Since 2008, the Gulf Stream has moved closer to the Grand Banks, reducing the supply of cold, fresh, and oxygen-rich Labrador Current waters to the Northwest Atlantic Shelf. Nearly every year since 2010, warm slope water made up more than 50% of the annual slope water proportions entering the Gulf of Maine. In 2017 almost no cooler Labrador Slope water entered the Gulf of Maine through the Northeast Channel. The changing proportions of source water affect the temperature, salinity, and nutrient inputs to the Gulf of Maine ecosystem. In 2022, warm slope water was a majority (59.7%) of inputs to the Gulf of Maine.

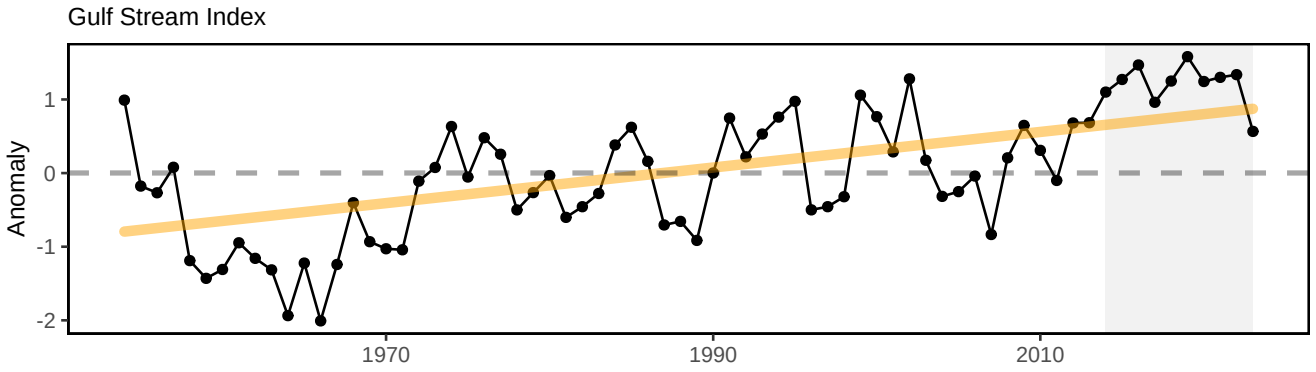


Figure 32: Index representing changes in the location of the Gulf Stream north wall. Positive values represent a more northerly Gulf Stream position.

Future Considerations Distribution shifts caused by changes in thermal habitat are likely to continue as long as long-term temperature trends persist. Near-term oceanographic forecasts are currently in development and may inform how future warming impacts species distributions.

Distribution patterns associated with climate-driven changes in oceanographic circulation patterns are unlikely to be reversed to historical ranges in the short term. Increased oceanographic variability needs to be captured by regional ocean models and linked to species distribution processes to better understand potential future distributions. Species with high mobility or short life spans react differently from immobile or long-lived species.

Adapting management to changing stock distributions and dynamic ocean processes will require continued monitoring of populations in space and evaluating management measures against a range of possible future spatial distributions.

Risks to Seasonal Management

The effectiveness of seasonal management actions (fishing seasons or area opening/closing) depends on a proper alignment with the seasonal life cycle events, also known as phenology, of fish stocks (e.g., migration timing and spawning). Changes in the timing of these biological cycles can reduce the effectiveness of management measures if not accounted for. The timing of seasonal patterns can also change the availability of species to surveys and interactions between fisheries and non-target species thus influencing the amount of bycatch.

Indicators: Timing shifts Spawning timing is shifting earlier for multiple stocks, including haddock and yellowtail flounder (Fig. 33). Spawning of both haddock stocks is occurring earlier, as indicated by more resting (post-spawning) stage fish in the 2010s as compared to earlier in the time series. The northern (Cape Cod/GOM) stock shows earlier active spawning in recent years with a decline in pre-spawning resting females. Yellowtail flounder spawning is related to bottom temperature, week of year, and decade sampled for each of the three stocks.

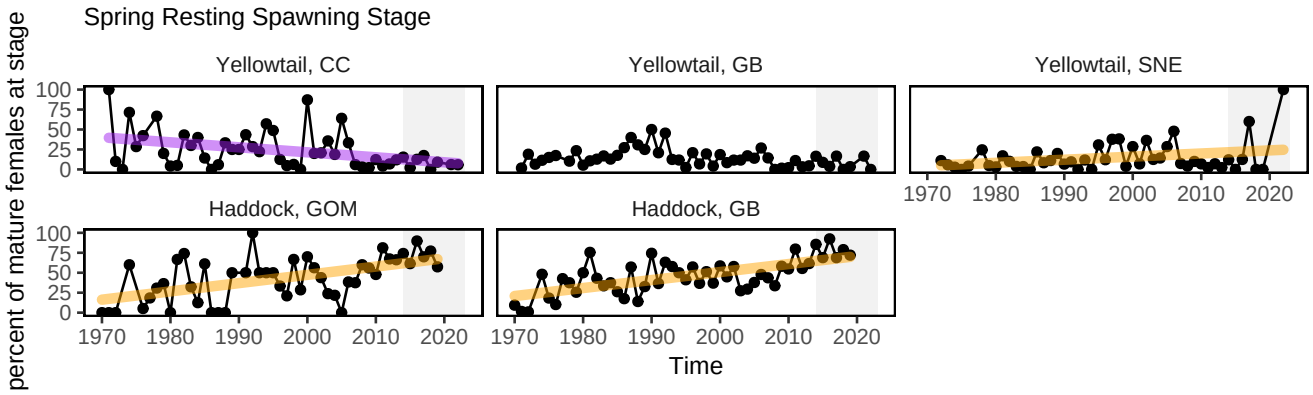


Figure 33: Percent resting stage (non-spawning) fish from two haddock and three yellowtail flounder stocks: CC = Cape Cod Gulf of Maine, GOM = Gulf of Maine, GB = Georges Bank, SNE = Southern New England.

Migration timing of some tuna and large whale migrations has changed. For example, tuna were caught in recreational fisheries 50 days earlier in the year in 2019 compared to 2002. In Cape Cod Bay, peak spring habitat use by right and humpback whales has shifted 18-19 days later over time.

Understanding whether seasonal patterns are changing for stocks requires regular observations during seasonal life history events. Despite the importance of understanding seasonal patterns, we have few indicators that directly assess timing shifts of species. We plan on incorporating more indicators of phenology in future reports.

Drivers The drivers of timing shifts in managed stocks are generally coupled to shifts in environmental or biological conditions, since these can result in changes in habitat quality or food availability within the year. Changes in the timing of fall phytoplankton blooms and seasonal shifts in zooplankton communities are thought to be critical indicators of changes in seasonal food availability to stocks.

Along with the overall warming trends in New England, ocean summer conditions have been lasting longer, as shown by the later transition from warm stratified summer conditions to well mixed cool fall conditions (Fig. 34).These transition dates are defined as the day of the year when surface temperatures change from cool to warm conditions in the spring and back to cool conditions in the fall. Changes in the broad seasonal cycles of their environment can lead to changes in species biological processes (migrations, spawning, etc.) that are triggered by seasonal events. Additionally, prolonged fall temperatures have been linked to the increased number of cold-stunned Kemp's ridley sea turtles found in Cape Cod Bay.

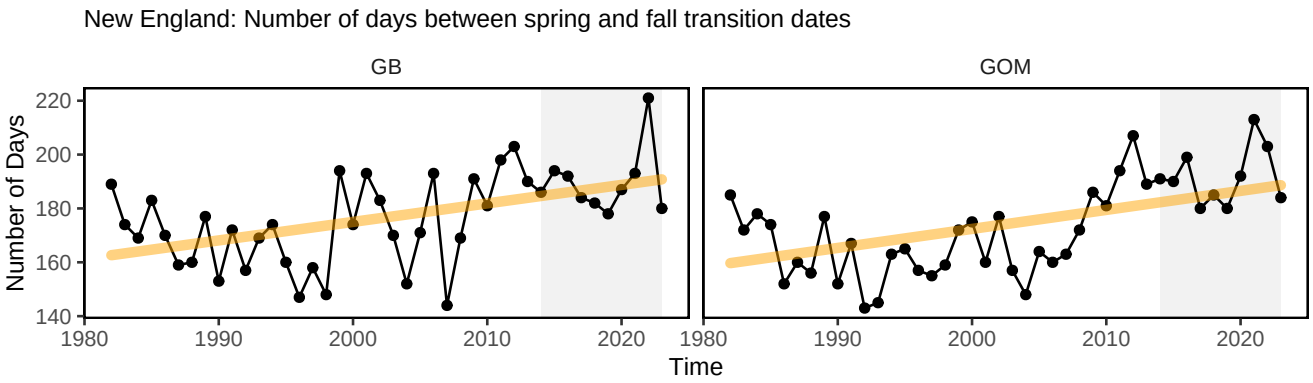


Figure 34: Ocean summer length: the annual total number of days between the spring thermal transition date and the fall thermal transition date.

The cold pool is a seasonal feature within the mid-Atlantic bight (MAB) that creates seasonally suitable habitat

for many species, including some managed by the NEFMC. Since the mid-2000s, the cold pool has persisted for a shorter portion of the year (Fig. 35). A change in the timing of the cold pool may impact the recruitment of species that realy on it for seasonal cues. Southern New England-Mid Atlantic yellowtail flounder recruitment and settlement are related to the strength of the cold pool (a factor of extent and persistence). The dependency of pre-recruit settlers within the cold pool represents a bottleneck in yellowtail life history, during which a local and temporary increase in bottom temperature negatively impacts the survival of the settlers. Including the effect of cold pool variations on yellowtail recruitment reproduced retrospective patterns and improved the skill of short-term forecasts in a stock assessment model.

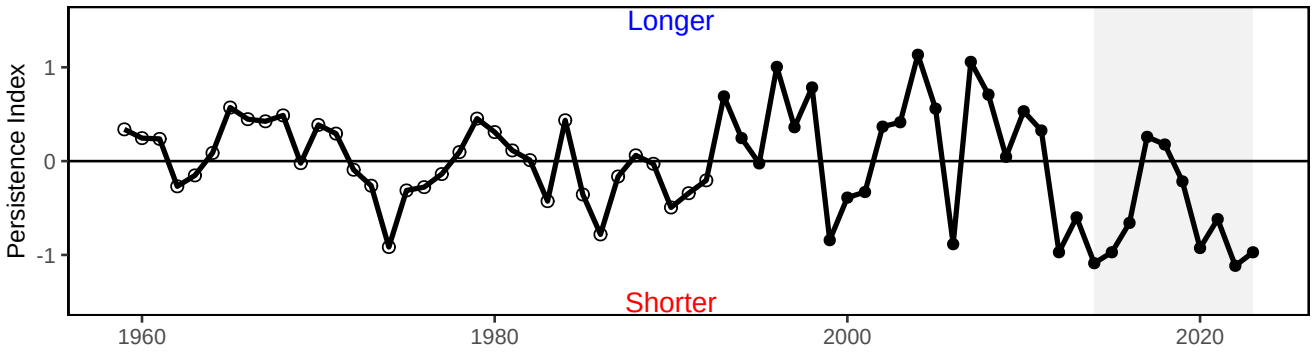


Figure 35: Cold pool persistence index based on bias-corrected ROMS-NWA (open circles) and GLORYS (closed circles).

Future Considerations For stocks reliant on environmental processes to dictate the timing of their behavior (e.g., phytoplankton bloom timing, thermal transition, or the duration of the cold pool), it is possible that some effects will be episodic and have interannual variability, while other effects on timing can change on scales of years to decades. However, other species rely on the general seasonal succession of environmental drivers (e.g., the timing of the fall turnover) to cue biological processes, which rely on long-term trends unlikely to reverse in coming years. Such timing shifts in migration or spawning for those species are expected to continue. Management actions that rely on effective alignment of fisheries availability and biological processes should continue to evaluate whether prior assumptions on seasonal timings still hold, and new indicators should be developed to monitor timing shifts for stocks.

Risks to Quota Setting/Rebuilding

The efficacy of short-term stock projections and rebuilding plans relies on an accurate understanding of processes affecting stock growth, reproduction, and natural mortality. These biological processes are often driven by underlying environmental change. When observed environmental change occurs, there is a risk that established stock-level biological reference points may no longer reflect the current population.

Indicators: Fish productivity and condition shifts Indicators of fish productivity are derived from observations (surveys) or models (stock assessments). With the exception of two years (2006 and 2013), fish productivity has been below the long-term average in the Gulf of Maine since the early 2000s, as described by the small-fish-per-large-fish anomaly indicator (derived from NEFSC bottom trawl survey)(Fig. 36). This decline in fish productivity is also shown by a similar analysis based on stock assessment model outputs (recruitment per spawning stock biomass anomaly). Other signs of changing productivity in New England are the declines in common tern chicks per nest (Fig. 37) and declining return rates for Atlantic salmon(Fig. 38).

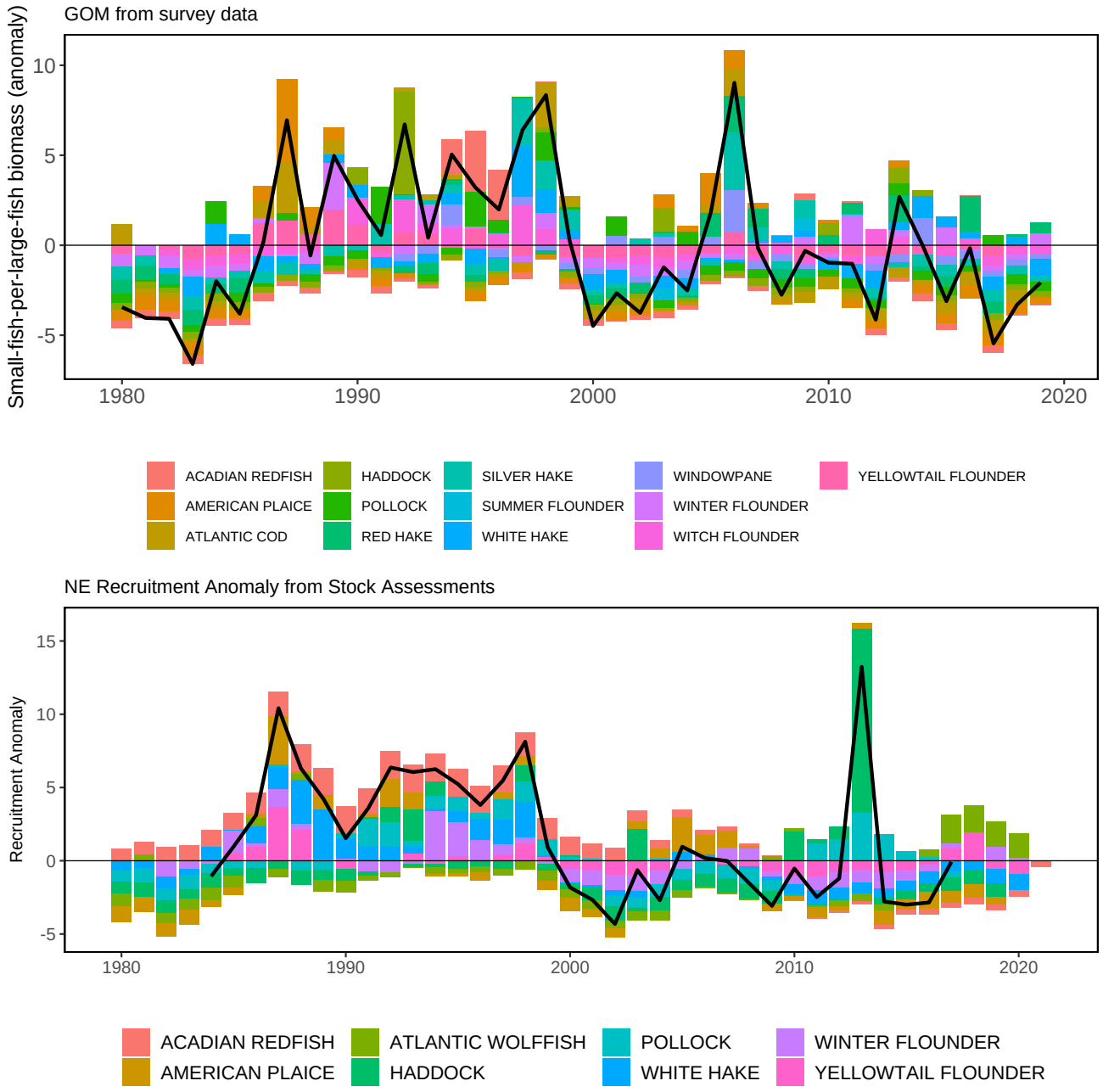


Figure 36: Fish productivity measures. Top: Small-fish-per-large-fish survey biomass anomaly in the Gulf of Maine. Bottom: assessment recruitment per spawning stock biomass anomaly for stocks managed by the New England Fishery Management Council region. The summed anomaly across species is shown by the black line, drawn across all years with the same number of stocks analyzed.

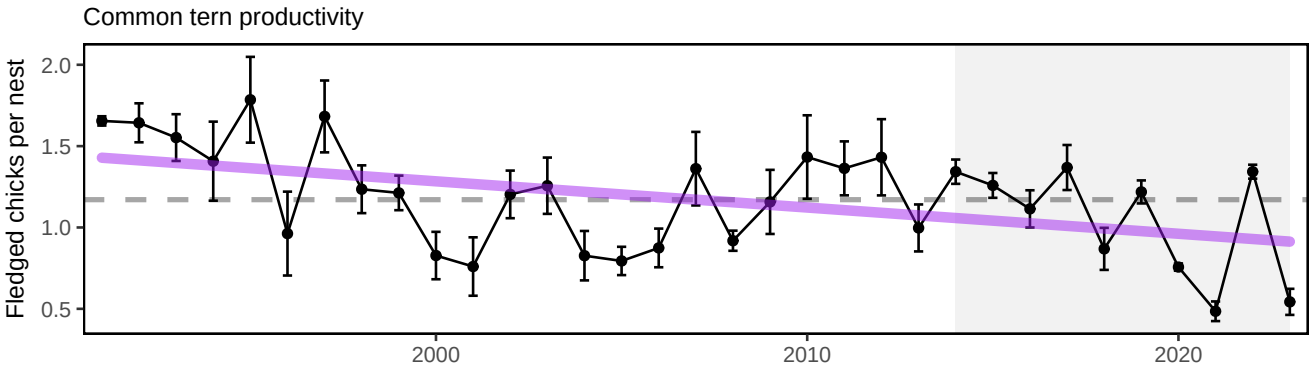


Figure 37: Productivity of Common terns in the Gulf of Maine.

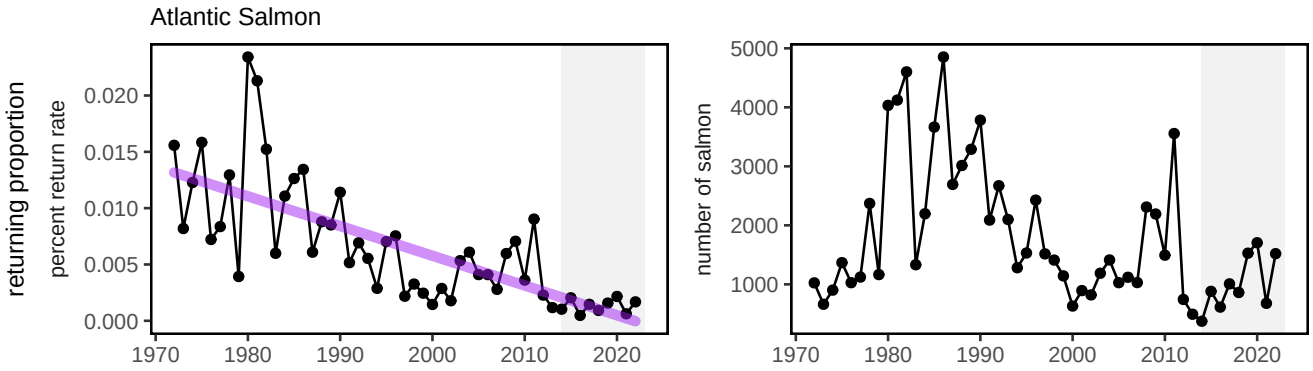


Figure 38: Return rate proportions and abundance of Atlantic salmon.

The health of individual fish (i.e., fish condition) can contribute to population productivity through improved growth, reproduction, and survival. Fish condition in the Gulf of Maine and Georges Bank regions were generally good prior to 2000, poor from 2001-2010 (concurrent with declines in fish productivity, Fig. 36), and a mix of good and poor since 2011. In 2023, fish condition was mixed, with generally improving condition on Georges Bank, but the highest number of species in poor condition in the Gulf of Maine since 2010 (Fig. 39).

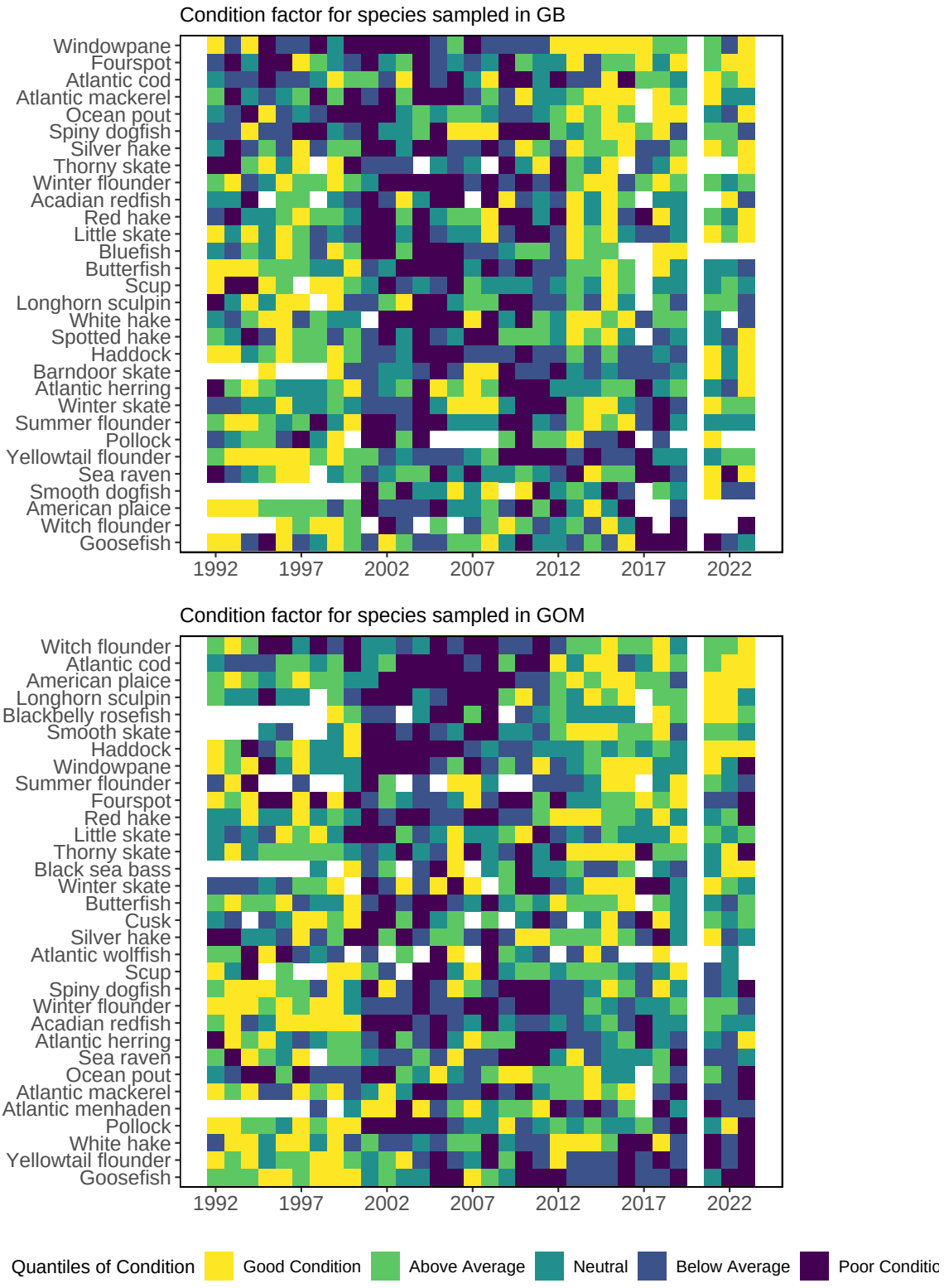


Figure 39: Condition factor for fish species in New England based on fall NEFSC bottom trawl survey data. No survey was conducted in 2020.

Drivers Fish productivity and condition are affected by increasing metabolic demands from increasing temperature, combined with changes in the availability and quality of prey. Long-term environmental trends and episodic extreme temperatures, ocean acidification, and low oxygen events represent multiple stressors that can affect growth rates, reproductive success and recruitment, and cause mortality.

Biological Drivers: Forage quality and abundance Fish productivity is dependent on the energy potentially available to them based on the nutritional value (energy content) and abundance of prey. Changes in the forage fish base can drive managed and protected species production and condition.

The energy content of juvenile and adult forage fish as prey is related to forage fish growth and reproductive cycles, as well as environmental conditions. The energy content of Atlantic herring from the NEFSC trawl surveys has increased but is still well below observations in the 1980s and 1990s (Fig. 40). Silver hake, longfin squid (Loligo in figure), and shortfin squid (Illex in figure) remain lower than previous estimates.

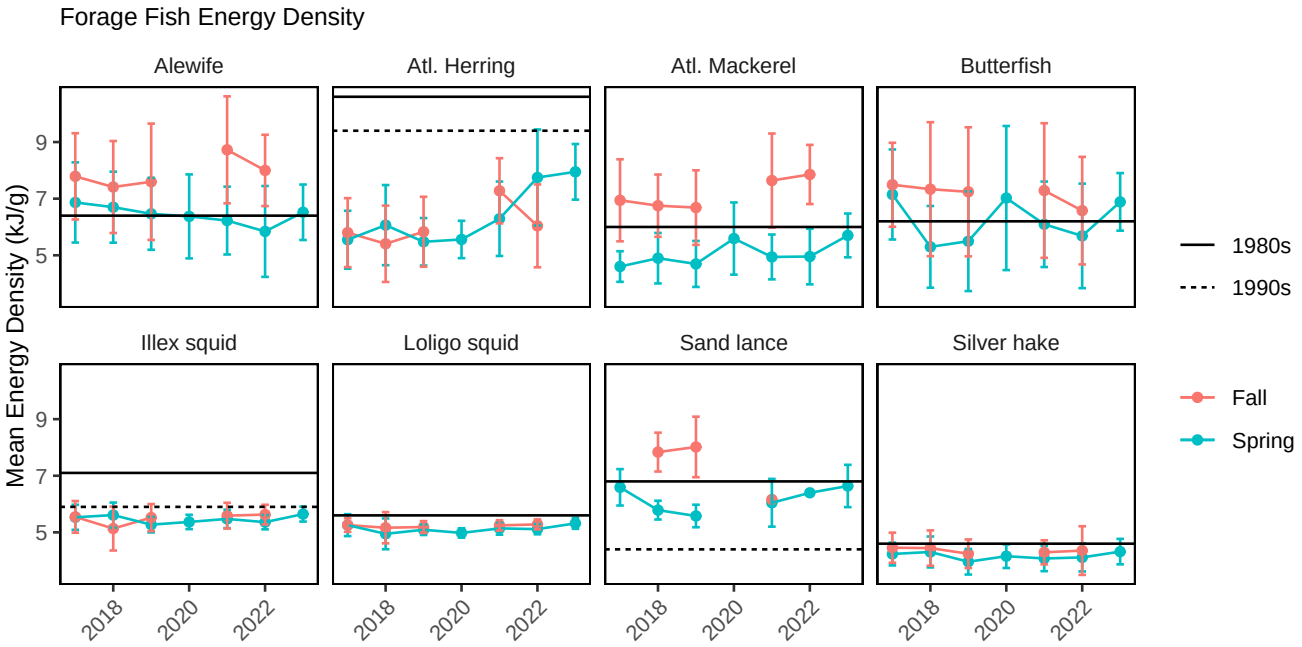


Figure 40: Forage fish energy density mean and standard deviation by season and year, compared with 1980s (solid line; Steimle and Terranove 1985) and 1990s (dashed line; Lawson et al. 1998) values.

Changes in the overall abundance of forage fish can influence managed species productivity as it relates to changes in food availability. New England fall forage biomass is stable with long-term increases in the spring GOM(Fig. 41). Forage biomass was highest during fall in the 1980s.

Biological Drivers: Lower trophic levels Phytoplankton are the foundation of the food web and are the primary food source for zooplankton and filter feeders such as shellfish. Numerous environmental and oceanographic factors interact to drive the abundance, composition, spatial distribution, and productivity of phytoplankton. While changes in fish productivity (including forage) could result from changing primary productivity, total primary production in New England has no long-term trend, despite anomalous conditions in the GOM in 2023 (Fig. 16).

Zooplankton communities in the Mid-Atlantic have increasing trends for smaller bodied copepods and gelatinous species (Cnidaria; Fig. Fig 42). Smaller bodied copepods and gelatinous species are less energy-rich than Eupausiids (krill) or the larger-bodied copepod *Calanus finmarchicus*. A changing mix of zooplankton prey can impact forage fish energy content and abundance, as well as the prey field of filter feeding whales.

Since 2010, the abundance of the lipid-rich older stages of *Calanus finmarchicus* in the GOM has declined. Observations from a fixed time series station in Wilkinson Basin indicate that *Calanus* seasonal abundance in late summer-winter between 2020-2022 has declined to 30-40% of its population level in 2005-2008 (Fig. 43), although spring abundances are still the same as 15-20 years ago. The seasonal differences in abundance change reflect differences in influence of primary seasonal drivers:

1. *Calanus* reproductive output is tied to phytoplankton availability in late winter/early spring.
2. Gulf of Maine source waters drive *Calanus* supply (high *Calanus* in Scotian Shelf/Labrodor shelf water (LSW) and less in warm slope water (WSW))
3. Predation is likely higher with warmer temperatures

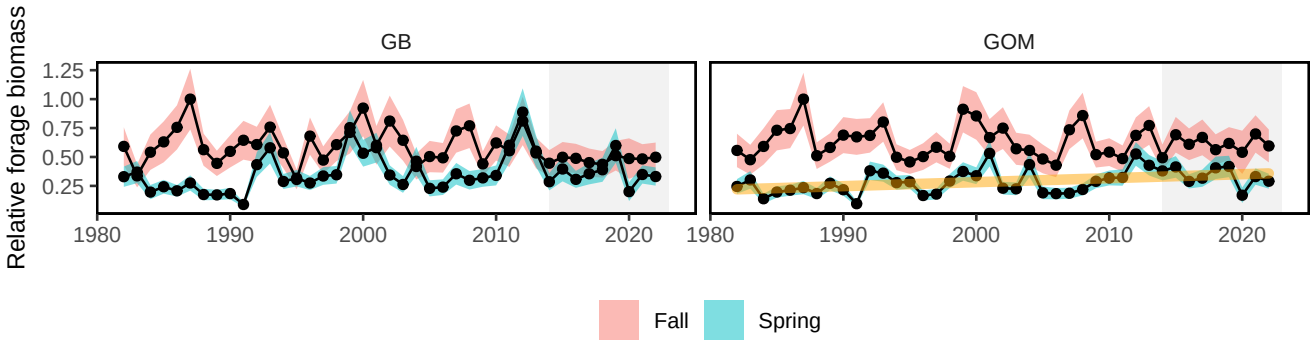


Figure 41: Forage fish index in GB (left) and GOM (right) for spring (blue) and fall (red) surveys. Index values are relative to the maximum observation within a region across surveys.

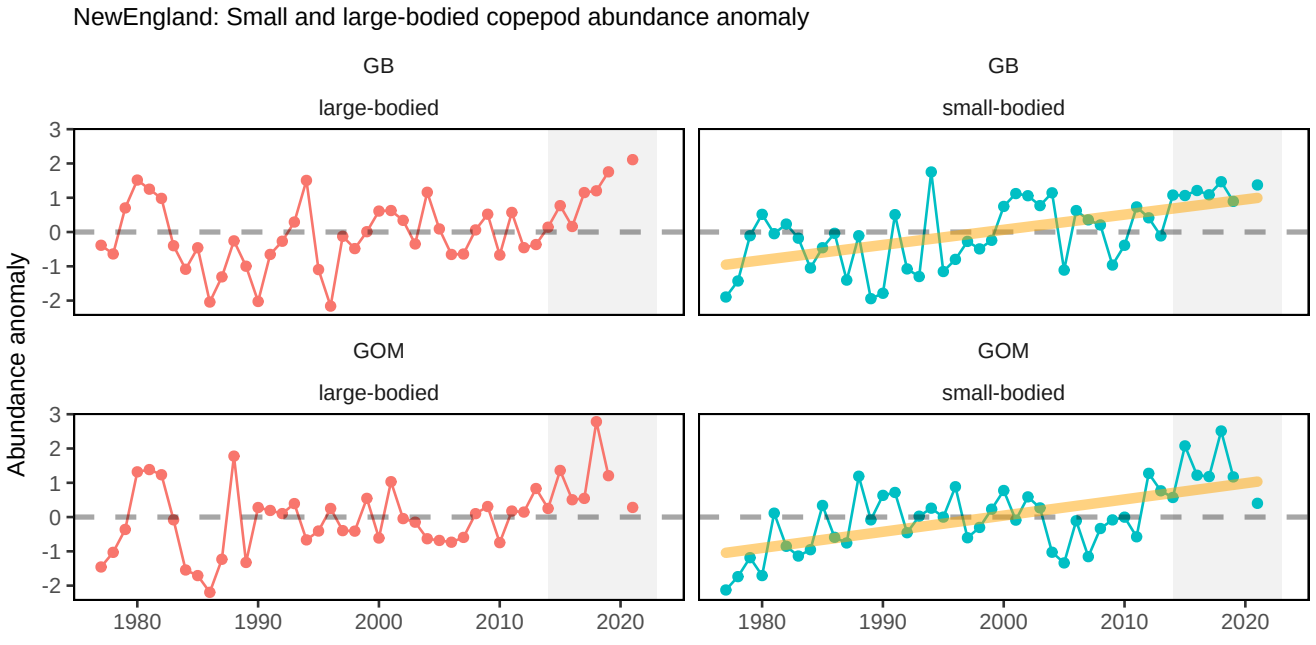


Figure 42: Georges Bank (GB) and Gulf of Maine (GOM) abundance anomalies three dominant zooplankton (*Calanus finmarchicus*, *Calanus typicus*, and *Pseudocalanus spp.*).

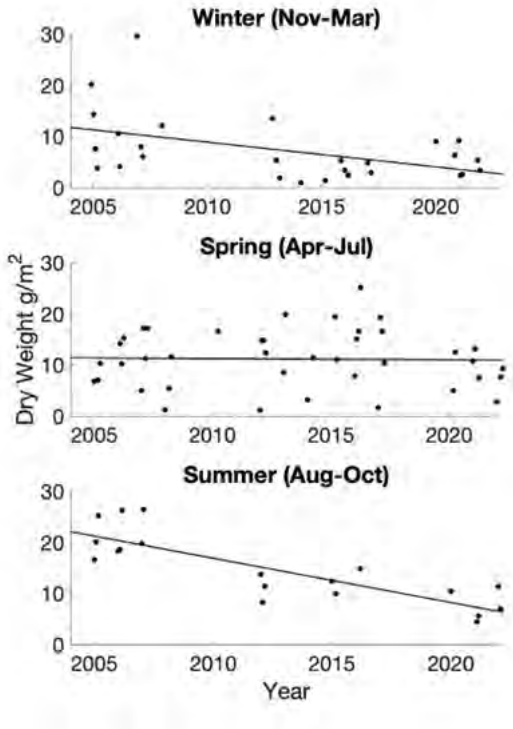


Figure 43: Dry mass of mesozooplankton captured with a 200µm ring net towed from the bottom to surface at a deep time series station in Wilkinson Basin between 2005-2022 (Runge et al. 2023).

Environmental Drivers Fish production can also be directly related to the prevailing environmental conditions by altering metabolic (growth) and reproductive processes. Many species possess thermal tolerances and can experience stressful or lethal conditions if temperatures exceed certain levels. Extreme temperature at both the surface (Fig. 31) and bottom can exceed thermal tolerance limits for some fish. For example, 2012 had among the warmest surface and bottom temperatures in New England. A large proportion of the Georges Bank and Mid-Atlantic regions had bottom temperatures above the 15℃ thermal tolerance for most groundfish, with some days exceeding the 24℃ potential mortality limit (Fig. 44).

In 2023, the second strongest bottom marine heatwave since 1982 was observed in the GOM, although it did not exceed this 15℃ threshold. Although parts of GB and the inshore GOM exceed this 15℃ threshold, heatwaves are an EPU-wide metric and include areas where bottom temperature is typically far below this threshold.

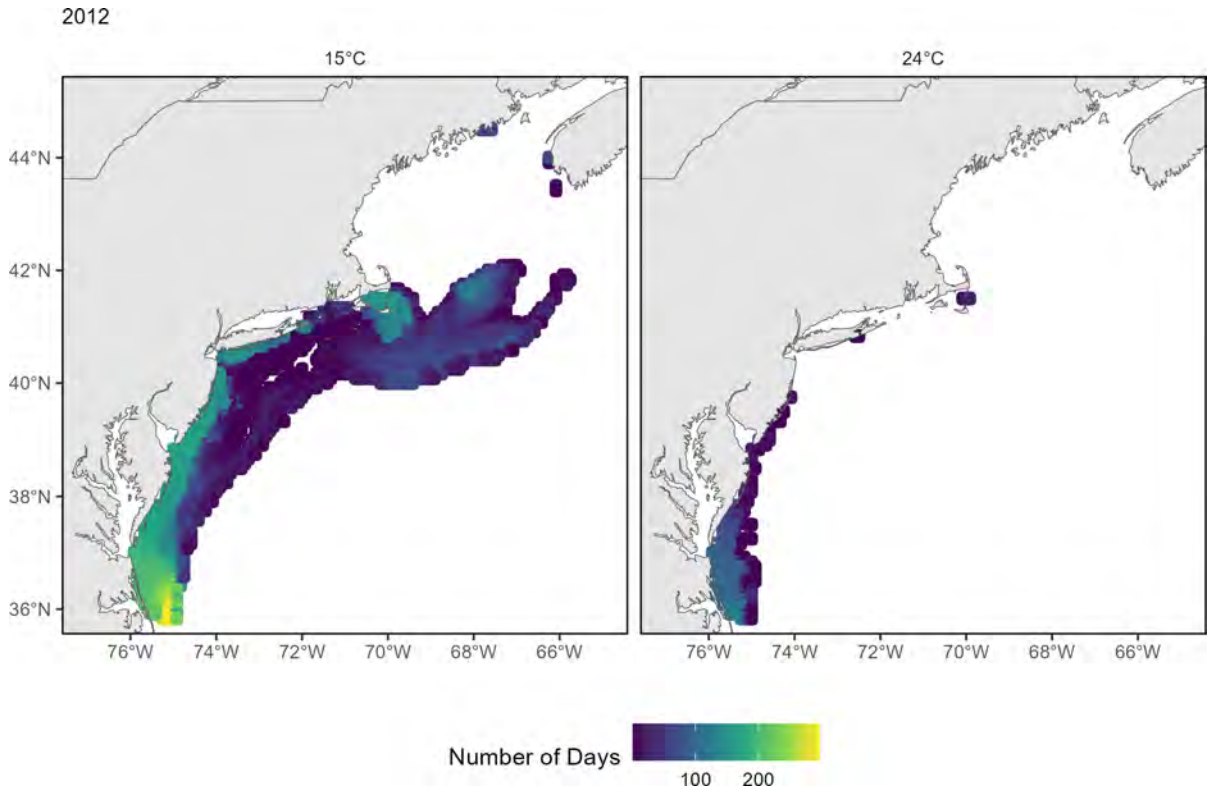


Figure 44: The number of days in 2012 where bottom temperature exceeds 15℃ (left) and 24℃ (right) based on the GLORYS 1/12 degree grid.

Ocean acidification (OA) risks vary among species and include reduced survival, growth, reproduction, and productivity, where high OA risk indicates potential negative effects to species. High OA risk was observed for Atlantic sea scallop and longfin squid in Long Island Sound and the nearshore and mid-shelf regions of the New Jersey shelf (Fig. 45, right panel) during summer 2016, 2018, 2019, and 2023.

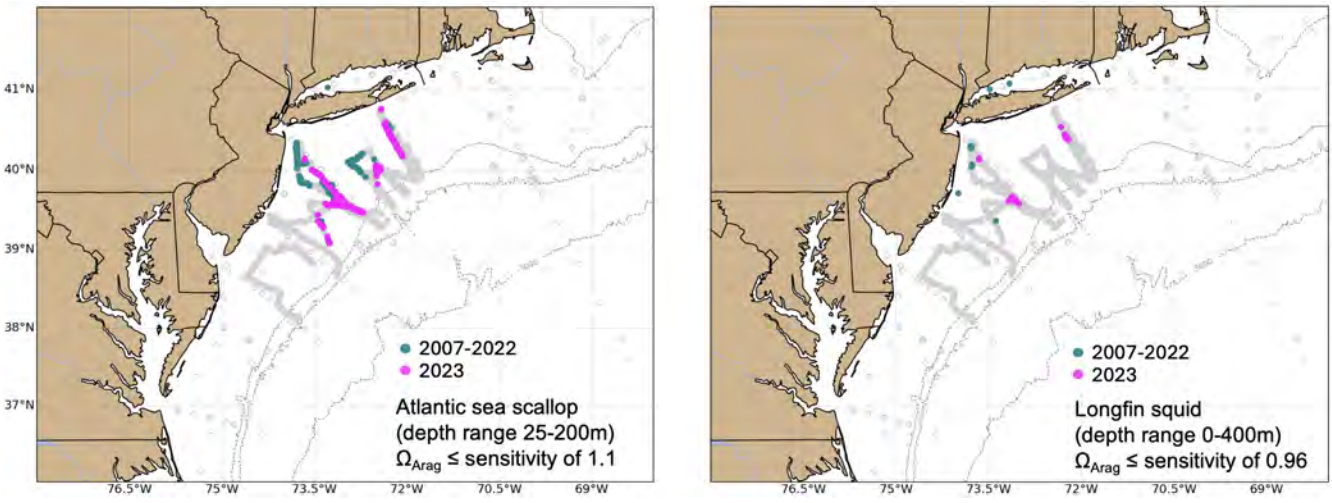


Figure 45: Locations where bottom aragonite saturation state (Ω_{Arag}; summer only: June-August) were at or below the laboratory-derived sensitivity level for Atlantic sea scallop (left panel) and longfin squid (right panel) for the time periods 2007-2022 (dark cyan) and 2023 only (magenta). Gray circles indicate locations where bottom Ω_{Arag} values were above the species specific sensitivity values.

Biological and oceanographic processes can affect the amount of oxygen present in the water column. During low oxygen (hypoxic) events, species' growth is negatively affected and very low oxygen can result in mortality. The duration and extent of hypoxic events is being monitored, but long-term shelf-wide observations are not yet available. However, hypoxic events were detected off the coast of New Jersey in 2023 and were potentially responsible for fish, lobster, and crab mortalities.

Drivers: Predation The abundance and distribution of predators can affect both the productivity and mortality rates on managed stocks. Predators can consume managed species or compete for the same resources resulting in increased natural mortality or declining productivity, respectively. The northeast shift in some highly migratory species (Fig. 28) indicates a change in the overlap between predators and prey. Since we also observe distribution shifts in both managed and forage species, the effect of changing predator distributions alone is difficult to quantify.

The increase in the gray seal population suggests predator populations are increasing in the GOM and GB regions. Stock status is mixed for Atlantic Highly Migratory Species (HMS) stocks (including sharks, swordfish, billfish, and tunas) occurring throughout the Northeast U.S shelf. While there are several HMS species considered to be overfished or that have unknown stock status, the population status for some managed Atlantic sharks and tunas is at or above the biomass target, suggesting the potential for robust predator populations among these managed species. Stable predator populations suggest stable predation pressure on managed species, but increasing predator populations may reflect increasing predation pressure.

Future Considerations The processes that control fish productivity and mortality are dynamic, complex, and the result of the interactions between multiple system drivers. There is a real risk that short-term predictions in assessments and rebuilding plans that assume unchanging underlying conditions will not be as effective, given the observed ecological and environmental process changes documented throughout the report. Assumptions for species' growth, reproduction, and natural mortality should continue to be evaluated for individual species. With observations of system-wide productivity shifts of multiple managed stocks, more research is needed to determine whether regime shifts or ecosystem reorganization are occurring, and how this should be incorporated into management

Other Ocean Uses: Offshore Wind

Indicators: development timeline, revenue in lease areas, coastal community vulnerability

As of January 2024, 30 offshore wind development projects are proposed for construction over the next decade in the Northeast (timelines and project data for 2024 are based on the Ocean Wind 1 Offshore Wind Farm Final Environmental Impact Statement. Volume II: Appendix F). Offshore wind areas are anticipated to cover more than 2.3 million acres by 2030 in the Greater Atlantic region (Fig. 46). It is anticipated that all states will be able to reach their 2030 offshore wind goals with existing lease areas.

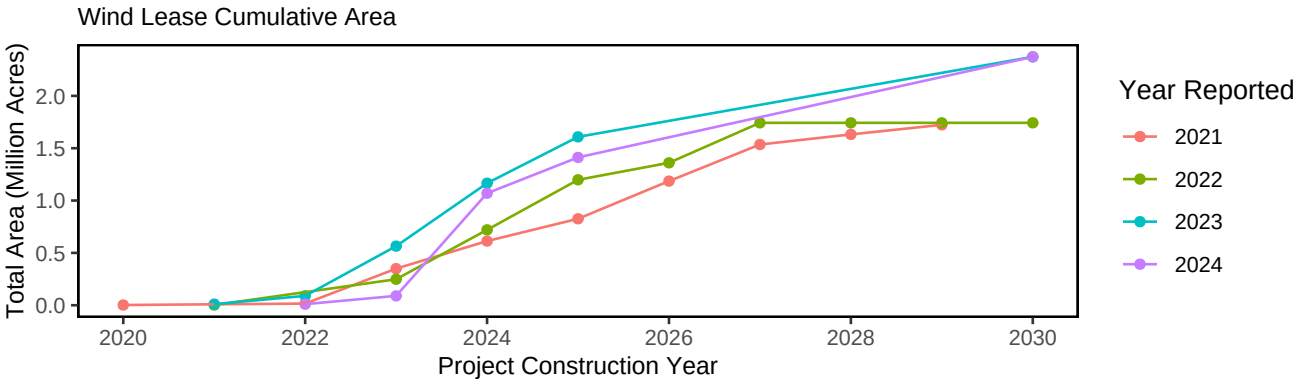


Figure 46: Proposed wind development on the northeast shelf.

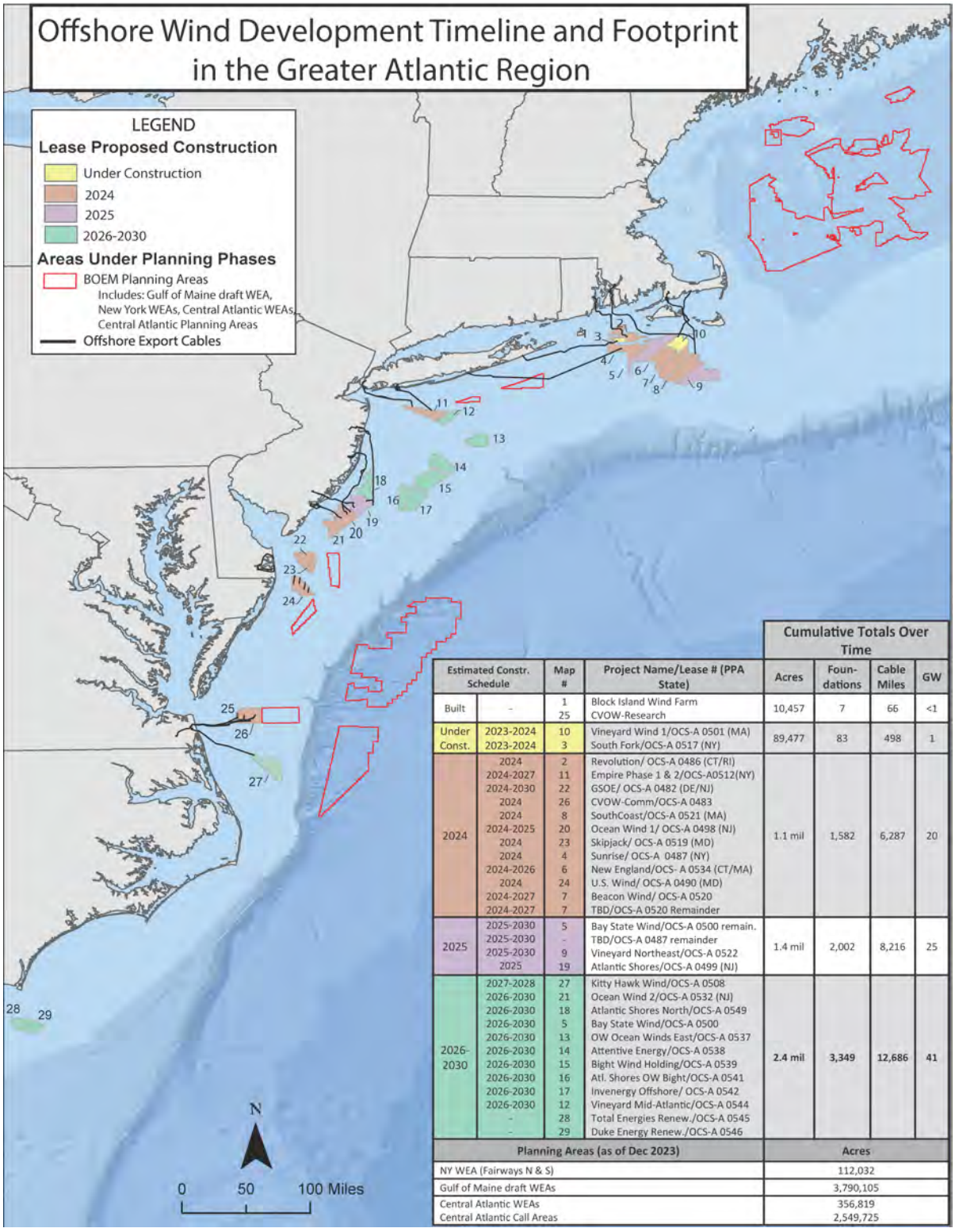
Just over 3,300 foundations and more than 12,000 miles of inter-array and offshore export cables are proposed to

date. Since first reporting timeline indicators in 2021, construction years by 2030 have become increasingly uncertain with a wide range of estimated construction years being reported for some projects as reflected in the "Estimated Construction Schedule" column of Fig. 47 below. The areas affected would be spread out such that it is unlikely that any one particular area would experience full development at one time. Construction of two projects in Southern New England (South Fork Wind and Vineyard Wind 1) during 2023 has affected fisheries managed by the New England Fishery Management Council, while construction activities began for Revolution Wind in early 2024. It is likely that construction will begin on other projects in Southern New England and possibly the New York Bight during 2024 that will further affect regional fisheries.

Offshore floating wind is expected to be developed in the GOM. Although no commercial wind lease areas have been proposed, the Bureau of Ocean Energy Management (BOEM) released a draft Wind Energy Area (Fig. 47) on October 19, 2023, which could be refined into future lease areas. BOEM announced that the final wind energy area and proposed commercial lease area designations for the GOM are expected in quarter one of 2024, with lease sales before 2025. BOEM is also reviewing the state of Maine's application to lease 9,700 acres (15 square miles) for the first floating offshore wind research site in federal waters of the GOM, which could have up to 12 turbines. Leasing for offshore floating wind in the Gulf of Maine will seek to meet the Biden Administration's proposed goal of 15GW of floating offshore wind by 2035 in the U.S.

NEFSC has partnered with the Responsible Ocean Development Alliance (RODA) and the University of Rhode Island to conduct an Integrated Ecosystem Assessment (IEA) of the interactions between offshore wind, fisheries, and the environment in the Gulf of Maine. The IEA report will be similar to the State of the Ecosystem, but fully dedicated to impacts of offshore wind. Data from the IEA will be suitable for inclusion in the environmental impact statements for any projects in the GOM.

Based on federal vessel logbook data, commercial fishery revenue from trips in the current offshore wind lease areas, the Central Atlantic Final Lease Areas, and the GOM Draft Wind Energy Area (excluding potential secondary areas), represent 3-54% of the total annual revenue for fisheries managed by the NEFMC from 2008-2022 (Table 3). Fishing revenue affected by offshore wind lease areas varies over time, but has largely declined over time. Maximum annual revenue for the fisheries with the most overlap with wind lease areas peaked at over $51 million for the sea scallop fishery, $4.2 million for monkfish, $2.2 million for skates, $724,000 for silver hake, and just over $1 million for Atlantic herring (Fig. 48). The scallop fishery is mainly affected by lease areas in the Mid-Atlantic, as most of the Northern Area scallop fishery is outside of the GOM Draft Wind Energy Area. However, substantially more groundfish landings overlap with the GOM Draft Wind Energy Area, with up to $15.1 million in annual groundfish revenue caught within potential lease areas. Individual groundfish species are more affected than others, with over 28-53% of annual revenues for redfish (53%), pollock (40%), white hake (34%) and American plaice (28%) overlapping with the GOM Draft Wind Energy Area (Table 3). This potential overlap will decrease once BOEM designates final lease areas for the GOM, which will be substantially smaller than the Draft Wind Energy Area. Future fishery resource overlap with wind leases, especially scallops, may change due to species distribution shifts attributable to climate change and recruitment and larval dispersion pattern changes caused by hydrodynamic flow disruptions from turbine foundations, which could also affect fishery landings/revenue.



Estimated Constr. Schedule		Map #	Project Name/Lease # (PPA State)	Cumulative Totals Over Time: Acres	Foundations	Cable Miles	GW
Built	-	1	Block Island Wind Farm	10,457	7	66	<1
		25	CVOW-Research				
Under Const.	2023-2024	10	Vineyard Wind 1/OCS-A 0501 (MA)	89,477	83	498	1
	2023-2024	3	South Fork/OCS-A 0517 (NY)				
2024	2024	2	Revolution/ OCS-A 0486 (CT/RI)	1.1 mil	1,582	6,287	20
	2024-2027	11	Empire Phase 1 & 2/OCS-A0512(NY)				
	2024-2030	22	GSOE/ OCS-A 0482 (DE/NJ)				
	2024	26	CVOW-Comm/OCS-A 0483				
	2024	8	SouthCoast/OCS-A 0521 (MA)				
	2024-2025	20	Ocean Wind 1/ OCS-A 0498 (NJ)				
	2024	23	Skipjack/ OCS-A 0519 (MD)				
	2024	4	Sunrise/ OCS-A 0487 (NY)				
	2024-2026	6	New England/OCS- A 0534 (CT/MA)				
	2024	24	U.S. Wind/ OCS-A 0490 (MD)				
	2024-2027	7	Beacon Wind/ OCS-A 0520				
	2024-2027	7	TBD/OCS-A 0520 Remainder				
2025	2025-2030	5	Bay State Wind/OCS-A 0500 remain.	1.4 mil	2,002	8,216	25
	2025-2030	-	TBD/OCS-A 0487 remainder				
	2025-2030	9	Vineyard Northeast/OCS-A 0522				
	2025	19	Atlantic Shores/OCS-A 0499 (NJ)				
2026-2030	2027-2028	27	Kitty Hawk Wind/OCS-A 0508	**2.4 mil**	**3,349**	**12,686**	**41**
	2026-2030	21	Ocean Wind 2/OCS-A 0532 (NJ)				
	2026-2030	18	Atlantic Shores North/OCS-A 0549				
	2026-2030	5	Bay State Wind/OCS-A 0500				
	2026-2030	13	OW Ocean Winds East/OCS-A 0537				
	2026-2030	14	Attentive Energy/OCS-A 0538				
	2026-2030	15	Bight Wind Holding/OCS-A 0539				
	2026-2030	16	Atl. Shores OW Bight/OCS-A 0541				
	2026-2030	17	Invenergy Offshore/ OCS-A 0542				
	2026-2030	12	Vineyard Mid-Atlantic/OCS-A 0544				
	-	28	Total Energies Renew./OCS-A 0545				
	-	29	Duke Energy Renew./OCS-A 0546				

Planning Areas (as of Dec 2023)	Acres
NY WEA (Fairways N & S)	112,032
Gulf of Maine draft WEAs	3,790,105
Central Atlantic WEAs	356,819
Central Atlantic Call Areas	2,549,725

Figure 47: All Northeast Project areas by year construction ends (each project has 2 year construction period).

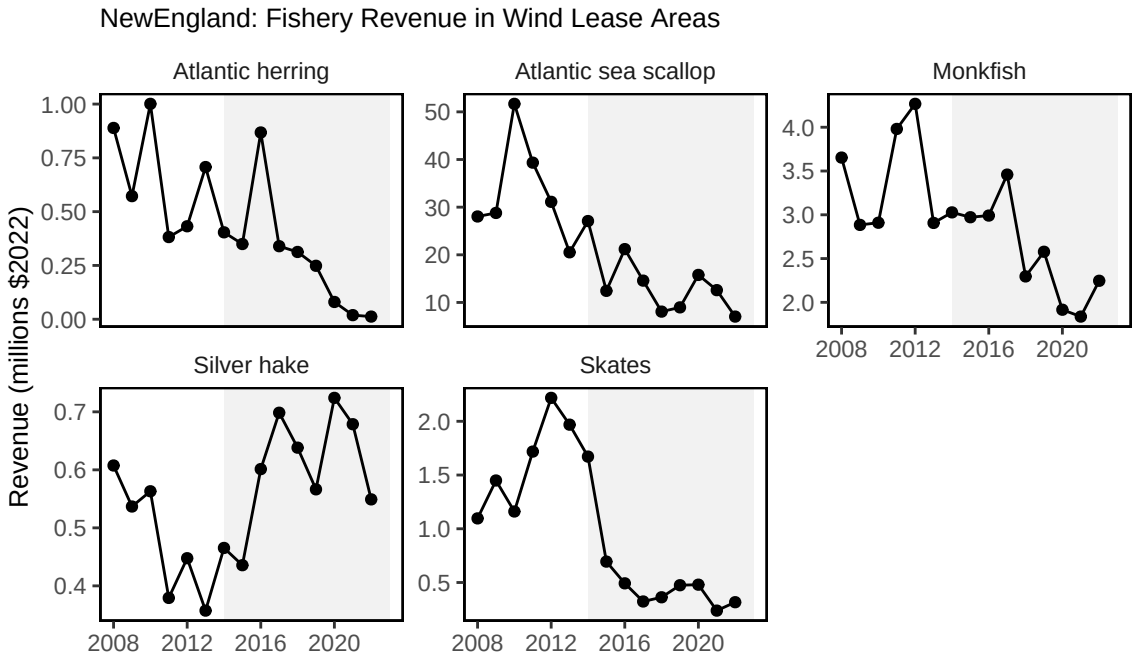


Figure 48: Fishery revenues from NEFMC managed species in the Wind energy lease areas.

Table 3: New England managed species Landings and Revenue from Wind Energy Areas. *Skates includes barndoor, winter, clearnose, smooth, little, and general skates reported in logbooks.

NEFMC, MAFMC, and ASMFC Managed Species	Maximum Percent Total Annual Regional Species Landings	Maximum Percent Total Annual Regional Species Revenue
Redfish	53	54
Skates*	40	51
Pollock	43	40
White hake	34	34
American plaice	26	28
Atlantic halibut	23	24
Haddock	24	23
Witch flounder	25	23
Monkfish	20	20
Yellowtail flounder	15	15
Atlantic cod	15	15
Atlantic sea scallop	10	9
Red hake	11	8
Silver hake	9	7
Winter flounder	5	5
Offshore hake	15	5
Atlantic herring	5	4
Spiny dogfish	4	4
Windowpane flounder	4	3

Equity and environmental justice (EJ) are priority concerns with offshore wind development and fisheries impacts in the Northeast, and the impacts of offshore wind development are expected to differentially impact specific coastal communities. Additionally, impacts of offshore wind development may unevenly affect individual operators, with some permit holders deriving a much higher proportion of revenue from wind areas than the port-based mean.

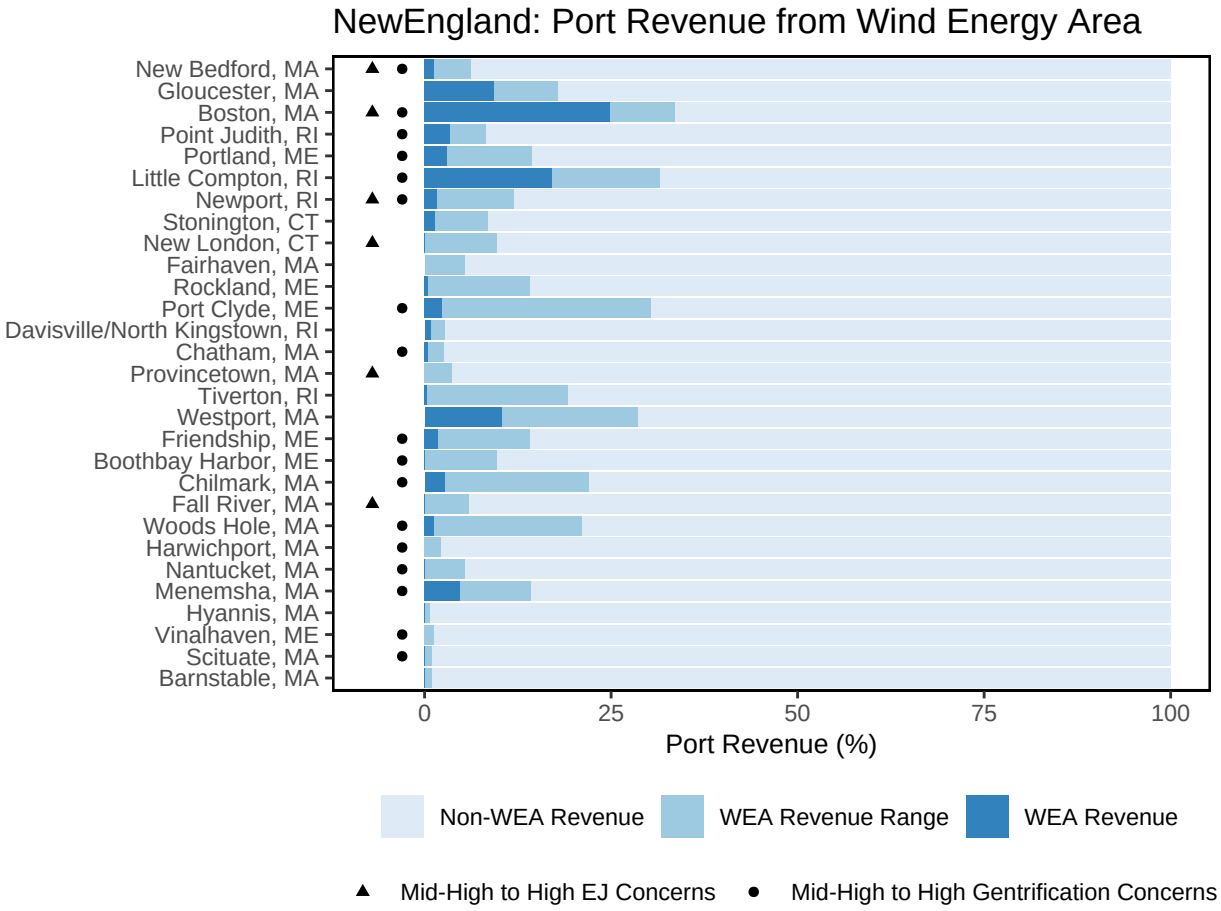


Figure 49: Percent of port fisheries revenue from Wind Energy Areas (WEA) in descending order from most to least port fisheries revenue from WEA. EJ = Environmental Justice.

For example, Little Compton, RI had a minimum of 17% and maximum of 32% overlap of wind energy revenue to the total port revenue between 2008-2022 (Fig. 49). BOEM reports that cumulative offshore wind development (if all proposed projects are developed) could have moderate impacts on low-income members of vulnerable communities who work in the commercial fishing and for-hire fishing industry due to disruptions to fish populations, restrictions on navigation, and increased vessel traffic as well as existing vulnerabilities of low-income workers to economic impacts.

Top fishing communities with high environmental justice concerns such as New Bedford, MA and New London, CT should be considered in decision making to reduce the social and economic impacts and aid in the resilience and adaptive capacity of underserved communities. These two ports are also undergoing significant changes to support offshore wind development port infrastructure needs. Environmental justice concerns also highlight communities where further resources are needed to reach underserved and underrepresented groups and create opportunities for, and directly involve, these groups in the decision-making process.

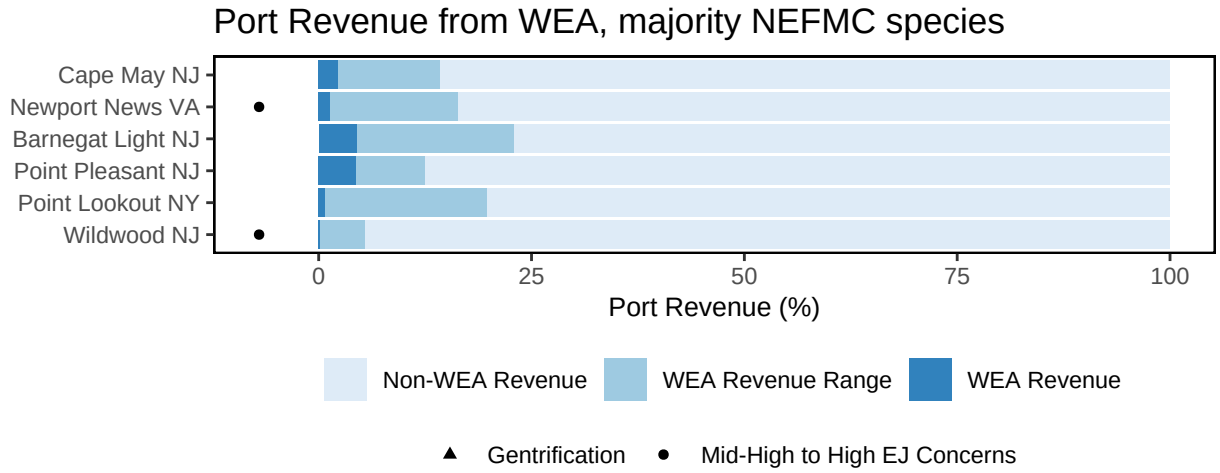


Figure 50: Percent of Mid-Atlantic port revenue with majority NEFMC landings from Wind Energy Areas (WEA) in descending order from most to least port fisheries revenue from WEA. EJ = Environmental Justice.

Implications

Current plans for rapid buildout of offshore wind in a patchwork of areas spreads the impacts differentially throughout the region (Fig. 47).

Up to 12% of total average revenue for major New England commercial species in lease areas could be forgone, or reduced, and associated effort displaced if all sites are developed. Displaced fishing effort can alter historic fishing areas, timing, and methods, which can in turn change habitat, species (managed and protected), and fleet interactions. Several factors, including fishery regulations, fishery availability, and user conflicts affect where, when, and how fishing effort may be displaced, along with impacts to and responses of affected fish species.

Planned development overlaps NARW mother and calf migration corridors and a significant foraging habitat that is used throughout the year in addition to one of the only known winter foraging areas (Fig. 51). Turbine presence and extraction of energy from the system could alter local oceanography and may affect right whale prey availability. For example, persistent foraging hotspots of right whales and seabirds overlap on Nantucket Shoals, where unique hydrography aggregates enhanced prey densities. Wind leases (OCS-A 0521 and OCS-A 0522) currently intersect these hotspots on the southwestern corner of Nantucket Shoals and a prominent tidal front associated with invertebrate prey swarms important to seabirds and possibly right whales. Proposed wind development areas also bring increased vessel strike risk from construction and operation vessels. In addition, there are a number of potential impacts to whales from pile driving and operational noise such as displacement, increased levels of communication masking, and elevated stress hormones.

Proposed wind development areas interact with the region's federal scientific surveys. Scientific surveys are impacted by offshore wind in four ways:

1. Exclusion of NOAA Fisheries' sampling platforms from the wind development area due to operational and safety limitations
2. Impacts on the random-stratified statistical design that is the basis for scientific assessments, advice, and analyses;
3. Alteration of benthic and pelagic habitats, and airspace in and around the wind energy development, requiring new designs and methods to sample new habitats
4. Reduced sampling productivity through navigation impacts of wind energy infrastructure on aerial and vessel survey operations

Increased vessel transit between stations may decrease data collections that are already limited by annual days-at-sea day allocations. The total survey area overlap ranges from 1-70% for all Greater Atlantic federal surveys. The Gulf of Maine Cooperative Research Bottom Longline Survey (41%) and the Shrimp Survey (70%) have the largest

percent overlap with the draft Gulf of Maine Wind Energy Areas. The remaining surveys range from 1-16% overlap. Individual survey strata have significant interaction with wind energy development, including the sea scallop survey (up to 96% of individual strata) and the bottom trawl survey (BTS, up to 60% strata overlap). Additionally, up to 50% of the southern New England North Atlantic right whale survey's area overlaps with proposed project areas and a region-wide survey mitigation program is underway

The increase of offshore wind development can have both positive (e.g., employment opportunities) and negative (e.g., space-use conflicts) sociocultural effects. Continued increase in coastal development and gentrification pressure has resulted in loss of fishing infrastructure space within ports. Understanding these existing pressures can help avoid and mitigate negative impacts to our shore support industry and communities dependent on fishing. Some of the communities with the highest fisheries revenue overlap with offshore wind development areas that are also vulnerable to gentrification pressure are Point Judith and Newport, RI; New Bedford, MA; and Port Clyde and Portland, ME.

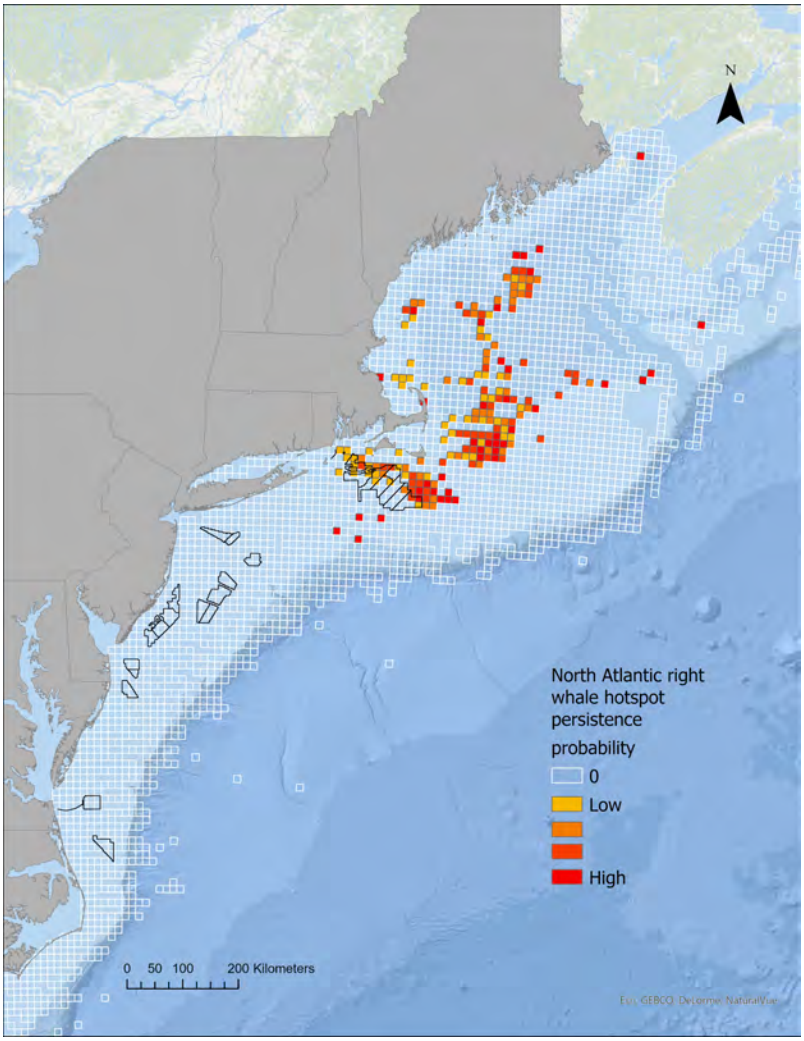


Figure 51: Northern Right Whale persistent hotspots and Wind Energy Areas. Areas outlined in black show active or proposed wind energy leases.

2023 Highlights

Multiple anomalous conditions and extreme events were observed in 2023 that could have brief local effects and/or widespread long-term ecosystem, fishery, and management implications. This section intends to provide a record of these observations, the implications they may have for other ecosystem processes, and a reflection on how they fit into our understanding of the ecosystem. Many of these observations are being actively studied but should be noted and considered in future analyses and management decisions.

Globally, 2023 was the warmest year on record with record high sea surface temperatures in the North Atlantic. In contrast, Northeast U.S. shelf surface temperatures were more variable, with near record highs in winter and near average conditions in other seasons.

Regional/Coastal Phenomena

There was a documented die-off of scallops in the Mid-Atlantic Elephant Trunk regions between the 2022 and 2023 surveys. In 2022, Elephant Trunk experienced stressful temperatures for scallops (17 - 19 ℃) for an average of 30 days, (Fig. 52) but ongoing research is being conducted to identify contributing factors. A fish and shellfish mortality event was observed in coastal New Jersey linked to hypoxia and ocean acidification (Fig. 53).

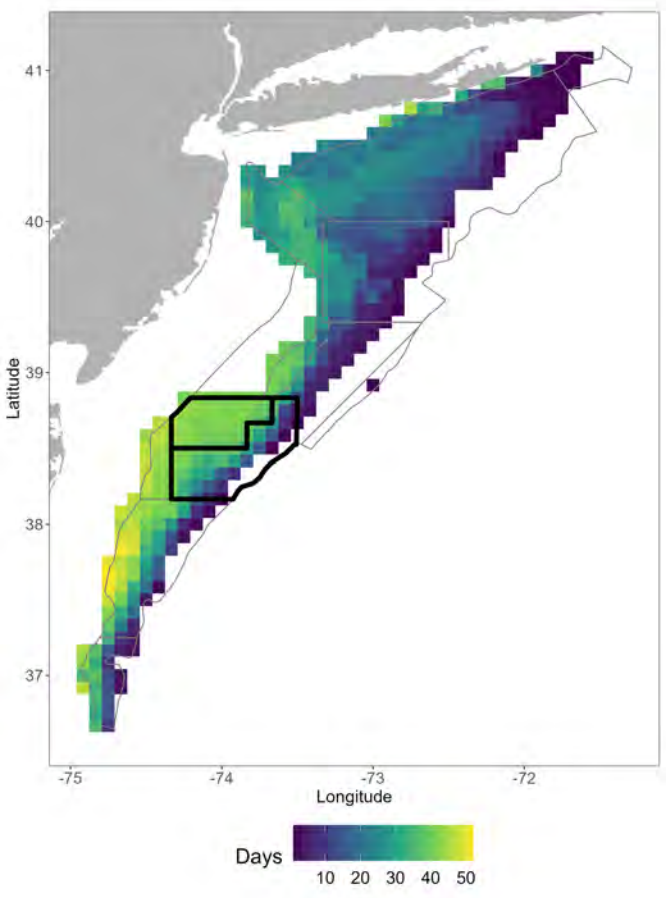


Figure 52: The number of days in 2022 where bottom temperature was between 17 and 19 ℃ (sressful thermal temperatures for sea scallops)in each GLORYS grid cell. The gray lines show the sea scallop estimation areas, with the Elephant Trunk region highlighted in black lines.

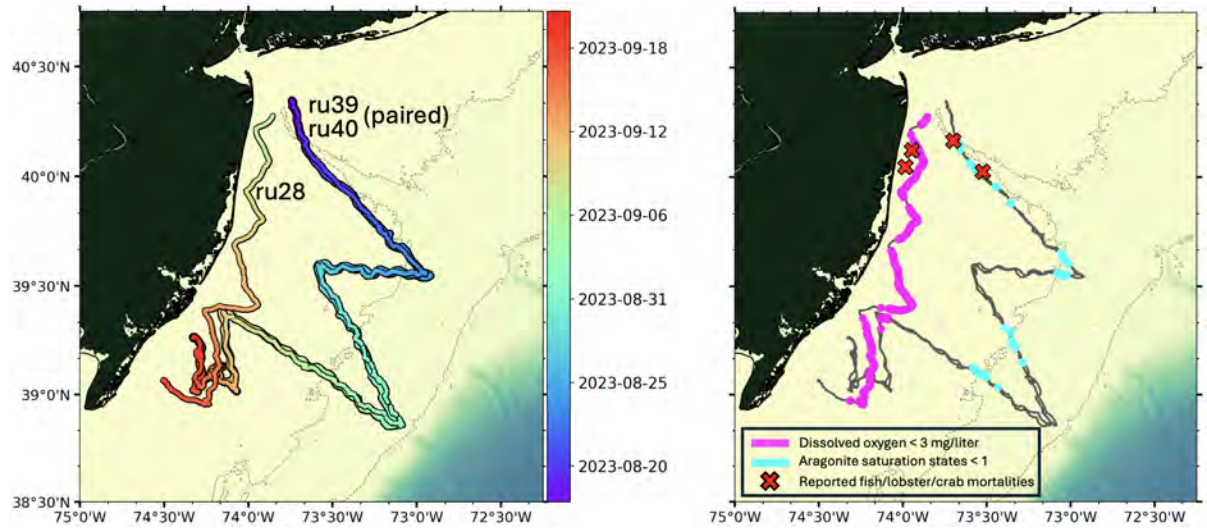


Figure 53: Left: Mission tracks of three gliders deployed off the coast of New Jersey in August and September of 2023. Right: Locations of hypoxic levels of dissolved oxygen (magenta; < 3 mg/liter) and low aragonite saturation state (cyan; < 1) measured along the glider mission tracks and locations of reported fish, lobster, and/or crab mortalities (red X).

Summer bottom temperatures in the Gulf of Maine were the warmest on record (since 1959) resulting in the second largest bottom marine heatwave. The heatwave started in February, peaked in May and likely continued beyond August (pending data update). 2023 bottom temperature exceeded the 15℃ hreshold for up to 59 days along the shelf break.

A wide-spread, long-duration phytoplankton bloom of the dinoflagellate *Tripos muelleri* was observed in the GOM and generated chlorophyll concentrations up to ten times greater than average (a record high since 1998) from March to August (Fig. 54). The bloom severely reduced water clarity, impacting harpoon fishing and likely affecting visual predators. Despite *Tripos* being a similar size to typical large phytoplankton (diatoms), this extra production was not grazed nor did it sink to the bottom. The specific drivers of the bloom and implications to the food web are still under investigation.

The Chesapeake Bay experienced the least amount of hypoxia conditions on record (since 1995), creating more suitable habitat for multiple fin fish and benthic species. Cooler Chesapeake Bay water temperatures paired with less hypoxia in the summer suggest conditions that season were favorable for striped bass. Cooler summer temperatures also support juvenile summer flounder growth. However, warmer winter and spring water temperatures in the Chesapeake Bay, along with other environmental factors (such as low flow), may have played a role in low production of juvenile striped bass in 2023.

Higher-than-average salinity across the Bay was likely driven by low precipitation and increased the area of available habitat for species such as croaker, spot, menhaden, and red drum, while restricting habitat area for invasive blue catfish.

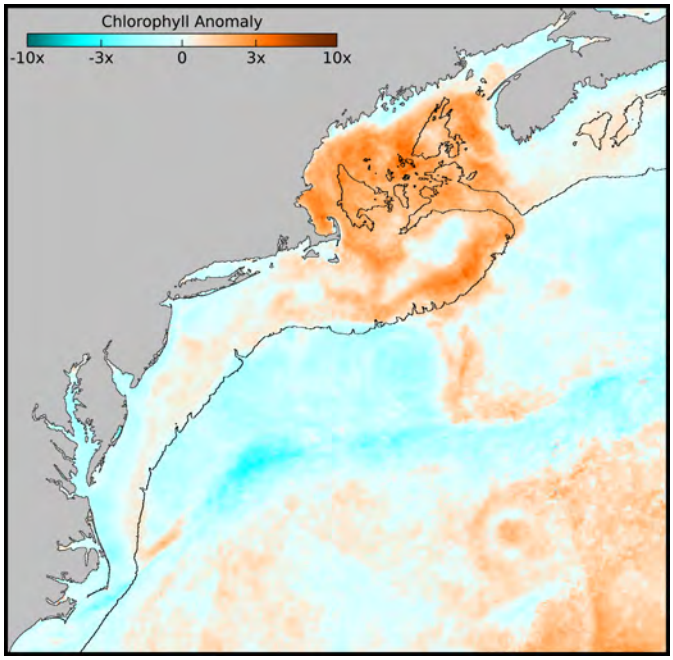


Figure 54: The chlorophyll anomaly for June 2023. Chlorophyll concentrations in the Gulf of Maine were 5-10 times greater than the long-term June average.

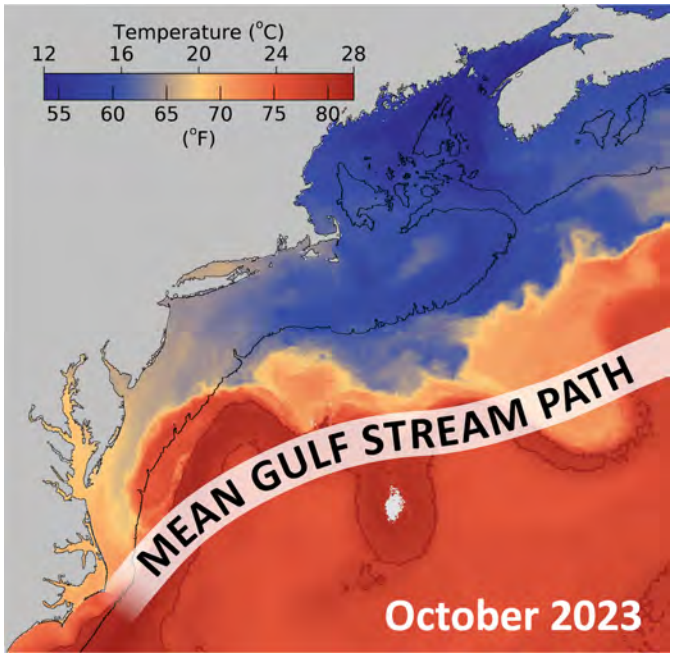


Figure 55: Weekly mean sea surface temperature (October 8-10, 2023) with the long-term mean Gulf Stream position. Red lines represent the 26℃) (78.8°F) temperature contour.

Shelf-wide Phenomena

The Gulf Stream was highly variable in 2023, with northward shifts intermittently throughout the year and a more notable prolonged shift north along the continental shelf break in the southern Mid-Atlantic in the fall (Fig .55). This shift severely constricted the Slope Sea (the waters between the Gulf Stream and continental shelf), inhibited warm

core ring formation and interactions, resulted in unusually warm and salty surface waters, and strong northeastward currents in the southern Mid-Atlantic. Intermittent warm waters like this can be threats to temperature-sensitive species, especially species at the southern end of their range or that are not mobile (e.g. scallops), while also providing suitable habitat for more southern species.

While the total number of warm core rings in 2023 (18) was below the decadal average (31), there were a few notable events. A large early season ring pulled continental shelf water into the Slope Sea. Events like these can create biological hotspots, aggregating multiple species in small areas, increasing bycatch risks, and marine mammal shipstrike risks. In spring 2023, concentrations of North Atlantic right whales, humpback whales, basking sharks, and other large baleen whales were observed feeding near the edge of warm core rings near the shelf break.

Multiple fall 2023 tropical and coastal storms caused several flash flood events, above-average coastal water levels, strong winds, and high rainfall totals throughout the Northeast. These storms may be related to the shift from 2020-2022 La Niña conditions to strong El Niño conditions in late spring 2023. El Niño winters are associated with more frequent East Coast storms, which can result in increased risk of coastal flooding, increased freshwater runoff into the coastal ocean, and delayed spring transition from a well mixed water column to stratified. In estuaries, increased freshwater flow decreases salinity, reduces the amount of suitable habitat for juvenile marine fish, and is related to increased hypoxia (low oxygen). However, precipitation is not uniform throughout the Northeast U.S., and Chesapeake Bay 2023 conditions did not align with El Niño expectations. The current El Niño is expected to weaken by spring 2024.

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Document Orientation

The figure format is illustrated in Fig 56a. Trend lines are shown when the slope is significantly different from 0 at the $p < 0.05$ level. An orange line signifies an overall positive trend, and purple signifies a negative trend. To minimize bias introduced by small sample size, no trend is fit for < 30 year time series. Dashed lines represent mean values of time series unless the indicator is an anomaly, in which case the dashed line is equal to 0. Shaded regions indicate the past ten years. If there are no new data for 2020, the shaded region will still cover this time period. The spatial scale of indicators is either coastwide, New England states (Connecticut, Rhode Island, Massachusetts, New Hampshire, and Maine), or at one of the two Ecosystem Production Units (EPUs, Fig. 56b) levels in the region, Georges Bank (GB) or Gulf of Maine (GOM).

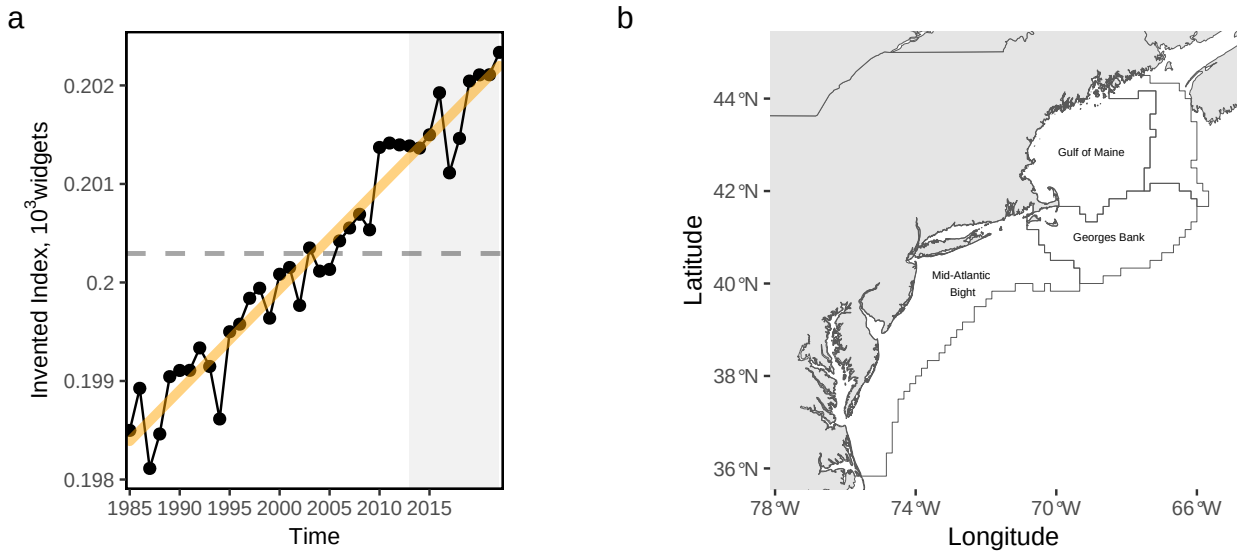


Figure 56: Document orientation. a. Key to figures. b.The Northeast Large Marine Ecosystem.

Fish and invertebrates are aggregated into similar feeding guild categories (Table 4) to evaluate ecosystem level trends in predators and prey.

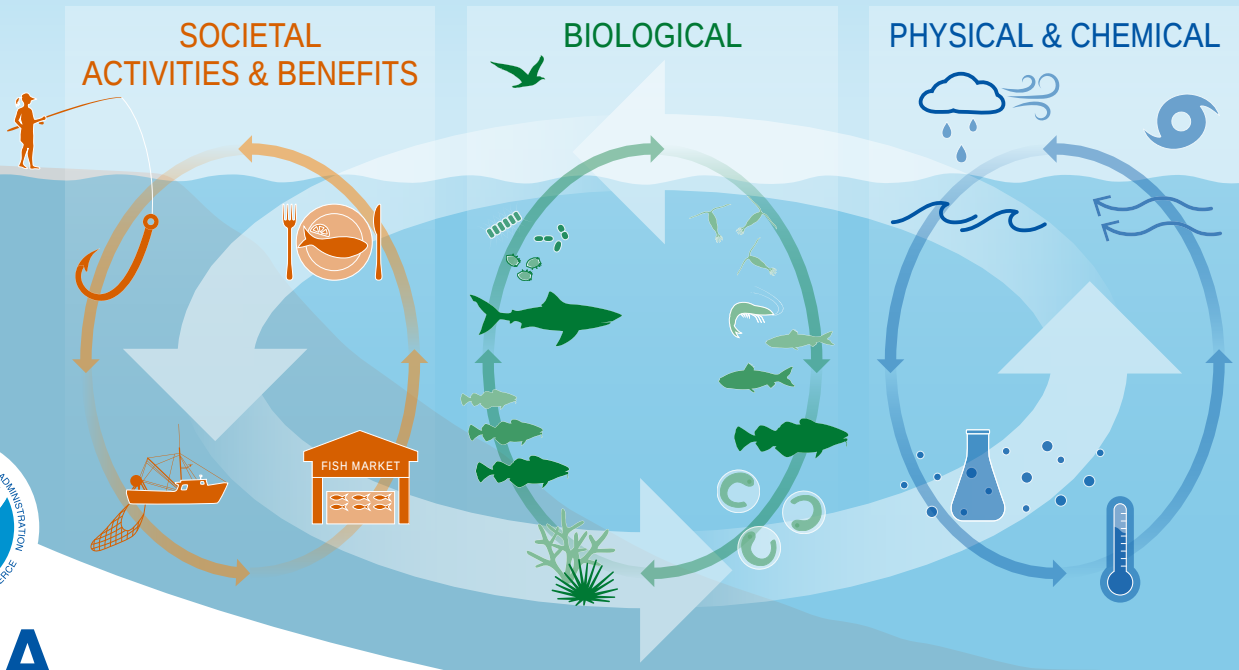
Table 4: Feeding guilds and management bodies.

Guild	MAFMC	Joint	NEFMC	State or Other
Apex Predator				shark uncl, swordfish, yellowfin tuna, bluefin tuna
Piscivore	summer flounder, bluefish, northern shortfin squid, longfin squid	spiny dogfish, goosefish	winter skate, clearnose skate, thorny skate, offshore hake, silver hake, atlantic cod, pollock, white hake, red hake, atlantic halibut, acadian redfish	sea lamprey, sandbar shark, atlantic angel shark, atlantic torpedo, conger eel, spotted hake, cusk, fourspot flounder, windowpane, john dory, atlantic cutlassfish, blue runner, striped bass, weakfish, sea raven, northern stargazer, banded rudderfish, atlantic sharpnose shark, inshore lizardfish, atlantic brief squid, northern sennet, king mackerel, spanish mackerel

Guild	MAFMC	Joint	NEFMC	State or Other
Planktivore	atlantic mackerel, butterfish		atlantic herring	harvestfishes, smelts, round herring, alewife, blueback herring, american shad, menhaden, bay anchovy, striped anchovy, rainbow smelt, atlantic argentine, slender snipe eel, atlantic silverside, northern pipefish, chub mackerel, atlantic moonfish, lookdown, blackbelly rosefish, lumpfish, northern sand lance, atlantic saury, mackerel scad, bigeye scad, round scad, rough scad, silver rag, weitzmans pearlsides, atlantic soft pout, sevenspine bay shrimp, pink glass shrimp, polar lebbeid, friendly blade shrimp, bristled longbeak, aesop shrimp, norwegian shrimp, northern shrimp, brown rock shrimp, atlantic thread herring, spanish sardine, atlantic bumper, harvestfish, striated argentine, silver anchovy
Benthivore	black sea bass, scup, tilefish		barndoor skate, rosette skate, little skate, smooth skate, haddock, american plaice, yellowtail flounder, winter flounder, witch flounder, ocean pout, crab,red deepsea	crab,unc, hagfish, porgy,red, sea bass,nk, atlantic hagfish, roughtail stingray, smooth dogfish, chain dogfish, bluntnose stingray, bullnose ray, southern stingray, longfin hake, fourbeard rockling, marlin-spike, gulf stream flounder, longspine snipefish, blackmouth bass, threespine stickleback, smallmouth flounder, hogchoker, bigeye, atlantic croaker, pigfish, northern kingfish, silver perch, spot, deepbody boarfish, sculpin uncl, moustache sculpin, longhorn sculpin, alligatorfish, grubby, atlantic seasnail, northern searobin, striped searobin, armored searobin, cunner, tautog, snakeblenny, daubed shanny, radiated shanny, red goatfish, striped cusk-eel, wolf eelpout, wrymouth, atlantic wolffish, fawn cusk-eel, northern puffer, striped burrfish, planehead filefish, gray triggerfish, shortnose greeneye, beardfish, cownose ray, american lobster, cancer crab uncl, jonah crab, atlantic rock crab, blue crab, spider crab uncl, horseshoe crab, coarsehand lady crab, lady crab, northern stone crab, snow crab, spiny butterfly ray, smooth butterfly ray, snakefish, atlantic midshipman, bank cusk-eel, red cornetfish, squid cuttlefish and octopod uncl, spoonarm octopus, bank sea bass, rock sea bass, sand perch, cobia, crevalle jack, vermilion snapper, tomtate, jolthead porgy, saucereye porgy, whitebone porgy, knobbed porgy, sheepshead porgy, littlehead porgy, silver porgy, pinfish, red porgy, porgy and pinfish uncl, banded drum, southern kingfish, atlantic spadefish, leopard searobin, dusky flounder, triggerfish filefish uncl, blackcheek tonguefish, orange filefish, queen triggerfish, ocean triggerfish
Benthos	atlantic surfclam, ocean quahog		sea scallop	sea cucumber, sea urchins, snails(conchs), sea urchin and sand dollar uncl, channeled whelk, blue mussel

2024 State of the Ecosystem

Mid-Atlantic



NOAA FISHERIES

Performance Relative to Fishery Management Objectives

Trends and status of indicators related to broad ecosystem-level fishery management objectives, with implications for the Mid-Atlantic Fishery Management Council (MAFMC)

OBJECTIVE (Indicator)	TREND	CURRENT STATUS	IMPLICATIONS
Seafood production (Total and MAFMC managed landings)	Decline	Below long-term average	Commercial seafood landings were near historic lows in 2022, driven by declining surfclam and ocean quahog landings as well as landings of species not managed by the MAFMC (scallops). Recreational harvest is declining due to multiple drivers. Biomass trends within the ecosystem continue to be stable.
Commercial profits (Total and managed revenue)	Decline	Below long-term average	Total revenue has generally been higher than 1982 levels in the region up until 2022, when commercial revenue reached a historic low driven by both declining price and volume. Recent declining revenue trends are driven in part by managed clam species volume. Even when adjusting for inflation, falling prices are almost universal and due to market dynamics. Monitor climate risks to surfclams and ocean quahogs.
Recreational opportunities (Effort and fleet diversity)	EFFORT: Increase FLEET DIVERSITY: Decline	EFFORT: Above long-term objective FLEET DIVERSITY: Below long-term average	Recreational effort shows an increasing long-term trend and is above average, but fleet diversity is decreasing because of a shift away from party/charter to shore-based fishing. This shift results in a decreased range of recreational fishing opportunities. Shore-based anglers have access to different species/sizes of fish than vessel-based anglers. Recreational effort shows increasing variability since 2018.
Stability (Fishery and ecosystem diversity maintained over time)	FISHERY: No trend ECOSYSTEM: Mixed trends	FISHERY: Near long-term average ECOSYSTEM: Near long-term average	**Commercial:** Commercial fleet revenue diversity and fleet count metrics suggest stable capacity to respond to the current range of fishing opportunities. Commercial fleet revenue in recent years is being generated by fewer species than historically. **Recreational:** Species catch diversity has been maintained by a different set of species over time and continues to be above the long-term mean. **Ecosystem:** Adult fish diversity indices are stable while zooplankton diversity is increasing, indicating potential instability. Several climate and oceanography metrics are changing and should be monitored as warning signs for potential regime shift or ecosystem restructuring.
Social and cultural (Community fishery engagement, reliance, and environmental justice vulnerability)	Status only indicator	Environmental justice status for top commercial and recreational communities	Many communities throughout the Mid-Atlantic region ranked medium-high or above for one or more of the environmental justice indicators. Among commercial fishing communities, Atlantic City, NJ scored high for all three environmental justice indicators. Swan Quarter and Columbia, NC, and Little Creek, DE scored high in personal disruption and poverty. Hampton Bays/Shinnecock, NY and Newport News, VA scored medium-high for the population composition. Among recreational fishing communities, Ocean City, MD and Avon, NC, scored medium-high in personal disruption. Five other recreational fishing communities scored medium for one or more environmental justice indices.
Protected species (Coastwide bycatch, population numbers, mortalities)	BYCATCH: Mixed trends POPULATION NARW: Decline	BYCATCH: Meeting objectives POPULATION NARW: Below long-term average	Bycatch objectives are being met for harbor porpoise and gray seals. Mixed bycatch trends through 2021 are related to fishery management, shifts in population distribution combined with fishery shifts, and population increase for seals. Population drivers for North Atlantic Right Whales (NARW) include combined fishery interactions/vessel strikes and distribution shifts related to prey abundance and quality. Management measures to reduce adult mortality are reflected in more stable population numbers. Unusual mortality events continue for 3 large whale species.

Risks to Meeting Fishery Management Objectives

Climate and Ecosystem Risks

Climate and ecosystem change can directly and indirectly create risks to meeting fisheries management objectives by affecting the distribution, seasonal timing, productivity, and physiology of marine species.

Risks to Spatial Management: Species distribution shifts can complicate quota allocation because historical distributions may not reflect current availability and catch. Changing spatial overlap of species and fisheries can alter bycatch patterns. Species availability to surveys can change.

- **Observations:** Species distributions are trending to the northeast along the continental shelf and into deeper water for many fish and marine mammals.
- **Drivers:** Increasing temperature, changing oceanography, and the decreasing size of the seasonal cold pool can alter the spatial distribution of suitable habitat for managed species, as well as availability and distribution of their prey.

Risks to Seasonal Management: Changes in seasonal life-cycle events may not align with fishing seasons or area openings/closings, potentially reducing effectiveness of management measures. Changes in species and fisheries temporal overlap can alter bycatch and availability to surveys.

- **Observations:** Seasonal timing of spawning has changed for several managed fish species. Migration timing of some tunas and large whales has changed.
- **Drivers:** Later transition to fall conditions, shorter duration of seasonal cold pool, changing timing of fall phytoplankton blooms, seasonal community shifts in zooplankton, and changes in timing of food availability contribute to changes in timing of life-cycle events.

Risks to Quota Setting/Rebuilding: Environmentally driven changes in growth, reproduction, and natural mortality can complicate short-term stock projections. Stock reference points may not reflect prevailing environmental conditions.

- **Observations:** Changes in fish productivity and condition have been observed for multiple species.
- **Drivers:** Warmer temperatures increase metabolic demands and alters the availability and quality of prey. Episodic extreme temperatures, ocean acidification, and low oxygen events represent multiple stressors that can affect growth rates and cause mortality.

Other Ocean Uses: Offshore Wind Risks

There are 30 offshore wind energy projects proposed for construction on the Northeast shelf, covering more than 2.3 million acres by 2030, with additional large areas under consideration. Impacts at the wind project, local ocean, and regional scales are likely. Negative effects are possible for species that prefer soft bottom habitat, while species that prefer hard structured habitat may benefit. Wind energy updates include:

- Two projects are under construction in southern New England (South Fork Wind and Vineyard Wind 1).
- 1–23% of Mid-Atlantic port revenue (2008–2022) came from existing lease and proposed offshore wind areas. Some of these communities score medium-high to high in environmental justice concerns and gentrification vulnerability.
- 2–20% of annual commercial landings and revenue for MAFMC managed species between 2008–2022 occurred within lease areas and may be displaced. Individual operators may depend on lease areas for even larger proportions of their annual landings or revenue.
- Ongoing construction areas and planned future wind areas overlap with one of the only known winter right whale foraging habitats, and altered local oceanography could affect right whale prey availability. Development also increases vessel strike risk and the potential impacts of pile driving noise.

2023 Highlights

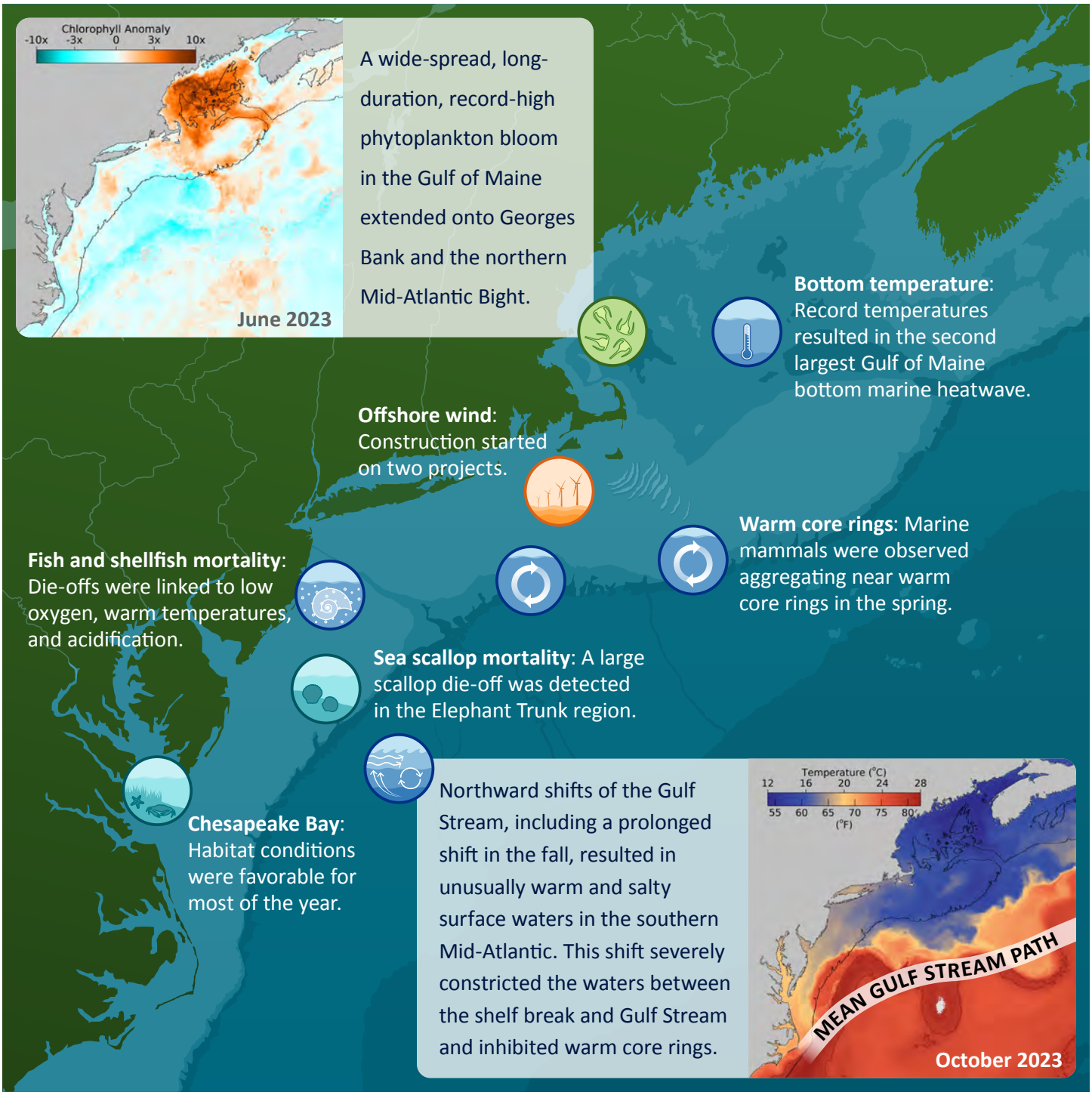
Multiple anomalous conditions and extreme events were observed in 2023 that could have brief local effects and/or widespread long-term ecosystem, fishery, and management implications. Anomalous events describe unusual or remarkable observations and can lead to increased uncertainty and unpredictable management outcomes.

Sea Surface Temperature

2023 global and North Atlantic sea surface temperatures were the warmest on record. However, Northeast U.S. shelf temperatures were more variable, with near record highs in winter and near average in other seasons.

El Niño Conditions

The 2020–2022 La Niña conditions ended in late winter and shifted to strong El Niño conditions in late spring 2023. The current El Niño is expected to gradually weaken and transition to neutral conditions in spring 2024.



Introduction

About This Report

This report is for the Mid-Atlantic Fishery Management Council (MAFMC). The purpose of this report is to synthesize ecosystem information to allow the MAFMC to better meet fishery management objectives, and to update the MAFMC's Ecosystem Approach to Fishery Management (EAFM) risk assessment. The major messages of the report are synthesized on pages 1 and 2, with highlights of 2023 ecosystem events on page 3. The information in this report is organized into two main sections; performance measured against ecosystem-level management objectives (Table 1), and potential risks to meeting fishery management objectives (climate change and other ocean uses). A final new section introduced this year highlights notable 2023 ecosystem observations.

Report structure

The two main sections contain subsections for each management objective or potential risk. Within each subsection, we first review observed trends for indicators representing each objective or risk, including the status of the most recent data year relative to a threshold (if available) or relative to the long-term average. Second, we identify potential drivers of observed trends, and synthesize results of indicators related to those drivers to outline potential implications for management. For example, if there are multiple drivers related to an indicator trend, do indicators associated with the drivers have similar trends, and can any drivers be affected by management action(s)? We emphasize that these implications are intended to represent testable hypotheses at present, rather than "answers," because the science behind these indicators and syntheses continues to develop.

A glossary of terms[1], detailed technical methods documentation[2], indicator data[3], and detailed indicator descriptions[4] are available online. We recommend new readers first review the details of standard figure formatting (Fig. 54a), categorization of fish and invertebrate species into feeding guilds (Table 4), and definitions of ecological production units (EPUs, including the Mid-Atlantic Bight, MAB; Fig. 54b) provided at the end of the document.

Table 1: Ecosystem-scale fishery management objectives in the Mid-Atlantic Bight

Objective categories	Indicators reported
Provisioning and Cultural Services	
Seafood Production	Landings; commercial total and by feeding guild; recreational harvest
Profits	Revenue decomposed to price and volume
Recreation	Angler trips; recreational fleet diversity
Stability	Diversity indices (fishery and ecosystem)
Social & Cultural	Community engagement/reliance and environmental justice status
Protected Species	Bycatch; population (adult and juvenile) numbers; mortalities
Supporting and Regulating Services	
Biomass	Biomass or abundance by feeding guild from surveys
Productivity	Condition and recruitment of managed species, primary productivity
Trophic structure	Relative biomass of feeding guilds, zooplankton
Habitat	Estuarine and offshore habitat conditions

Performance Relative to Fishery Management Objectives

In this section, we examine indicators related to broad, ecosystem-level fishery management objectives. We also provide hypotheses on the implications of these trends—why we are seeing them, what's driving them, and potential or observed regime shifts or changes in ecosystem structure. Identifying multiple drivers, regime shifts, and potential

[1] https://noaa-edab.github.io/tech-doc/glossary.html
[2] https://NOAA-EDAB.github.io/tech-doc
[3] https://noaa-edab.github.io/ecodata/
[4] https://noaa-edab.github.io/catalog/index.html

changes to ecosystem structure, as well as identifying the most vulnerable resources, can help managers determine whether anything needs to be done differently to meet objectives and how to prioritize upcoming issues/risks.

Seafood Production

Indicators: Landings; commercial and recreational

This year, we present updated indicators for total commercial landings, U.S. seafood landings, and Council-managed U.S. seafood landings. Total commercial landings within the Mid-Atlantic have declined over the long term, and total U.S. Mid-Atlantic seafood landings are near their all time low. Because there is no long term trend in MAFMC-managed U.S. seafood landings, the decline in U.S. seafood landings in the Mid-Atlantic region is likely driven by recent declines in species not managed by the Mid-Atlantic Council (Fig. 1).

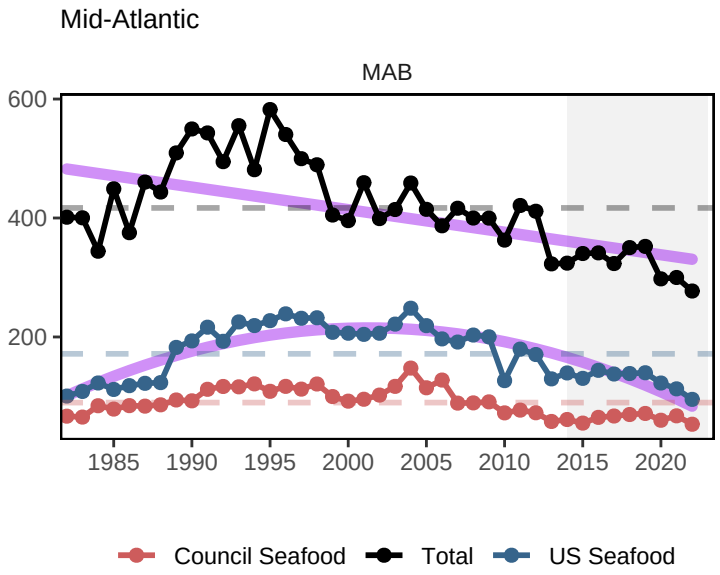


Figure 1: Total commercial landings (black), total U.S. seafood landings (blue), and Mid-Atlantic managed U.S. seafood landings (red), with significant declines (purple) in total and U.S. seafood landings.

Commercial landings by guild include all species and all uses, and are reported as total for the guild and the MAFMC managed species within the guild. As reported in previous years, landings of benthos presented a significant downward trend, primarily driven by surf clam and ocean quahog, with scallops now contributing to the decline as well. However, total landings of planktivores is now also presenting a significant downward trend, primarily due to decreases in species not managed by the MAFMC (Atlantic herring and Atlantic menhaden; Fig. 2).

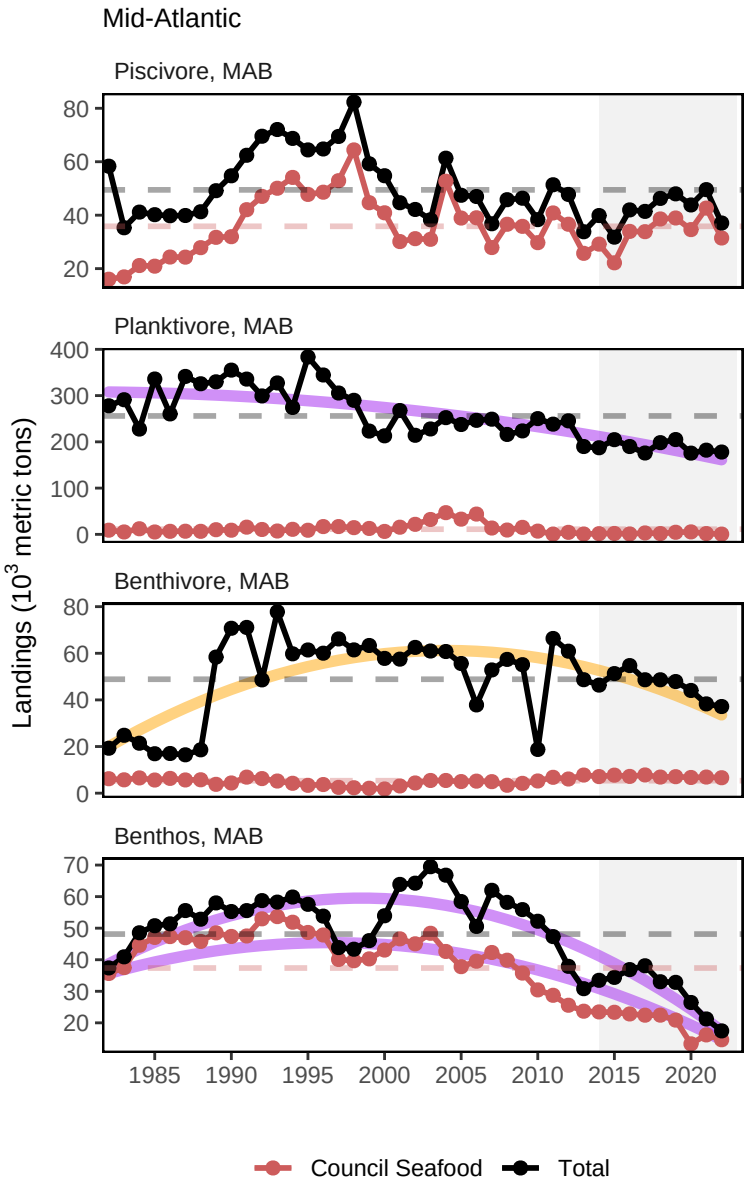


Figure 2: Total commercial landings in the Mid-Atlantic Bight (black) and MAFMC-managed U.S seafood landings (red) by feeding guild, with significant declines (purple) in total planktivore landings and both total and MAFMC managed benthos landings and a significant increase (orange) in total benthivore landings.

Although total recreational harvest (retained fish presumed to be eaten) has increased from a historic low in 2018, there is a long-term decline in the MAB (Fig. 3).

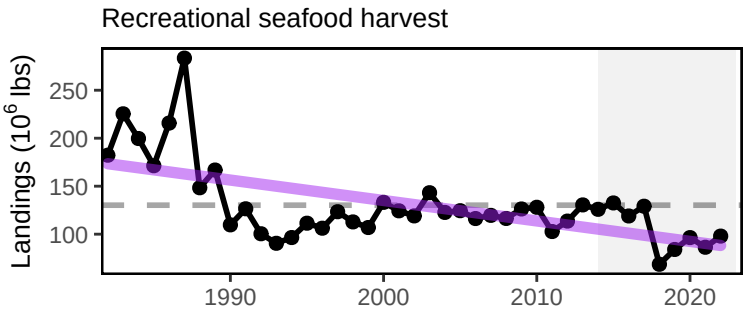


Figure 3: Total recreational seafood harvest (millions of pounds, black, significant decrease, purple) in the Mid-Atlantic region.

Recreational shark landings show an increase in pelagic sharks over the past decade, with a sharp decrease in 2018 - 2019 persisting through 2022 (Fig 4). This is likely influenced by regulatory changes implemented in 2018 intended to rebuild shortfin mako stocks.

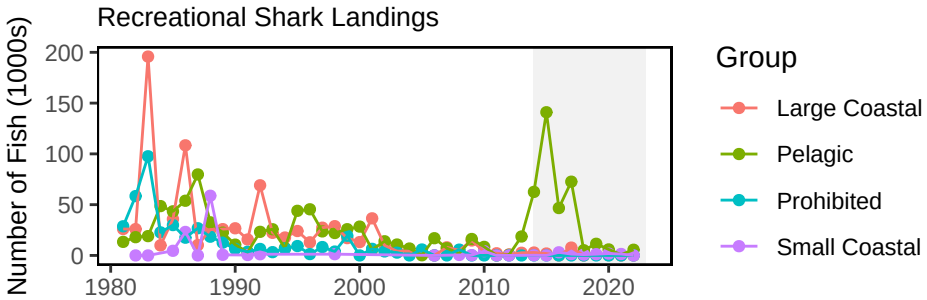


Figure 4: Recreational shark landings from Large Pelagics Survey.

Aquaculture production is not yet included in total seafood landings. Available aquaculture production of oysters for a subset of Mid-Atlantic states indicates a decline in recent years.

Implications

Declining commercial (total and seafood) and recreational landings can be driven by many interacting factors, including combinations of ecosystem and stock production, management actions, market conditions, and environmental change. While we cannot evaluate all possible drivers at present, here we evaluate the extent to which stock status and system biomass trends may play a role.

Stock Status and Catch Limits Single species management objectives (1. maintaining biomass above minimum thresholds and 2. maintaining fishing mortality below overfishing limits) are being met for all but two MAFMC-managed species (Fig. 5), though the status of six stocks is unknown (Table 2).

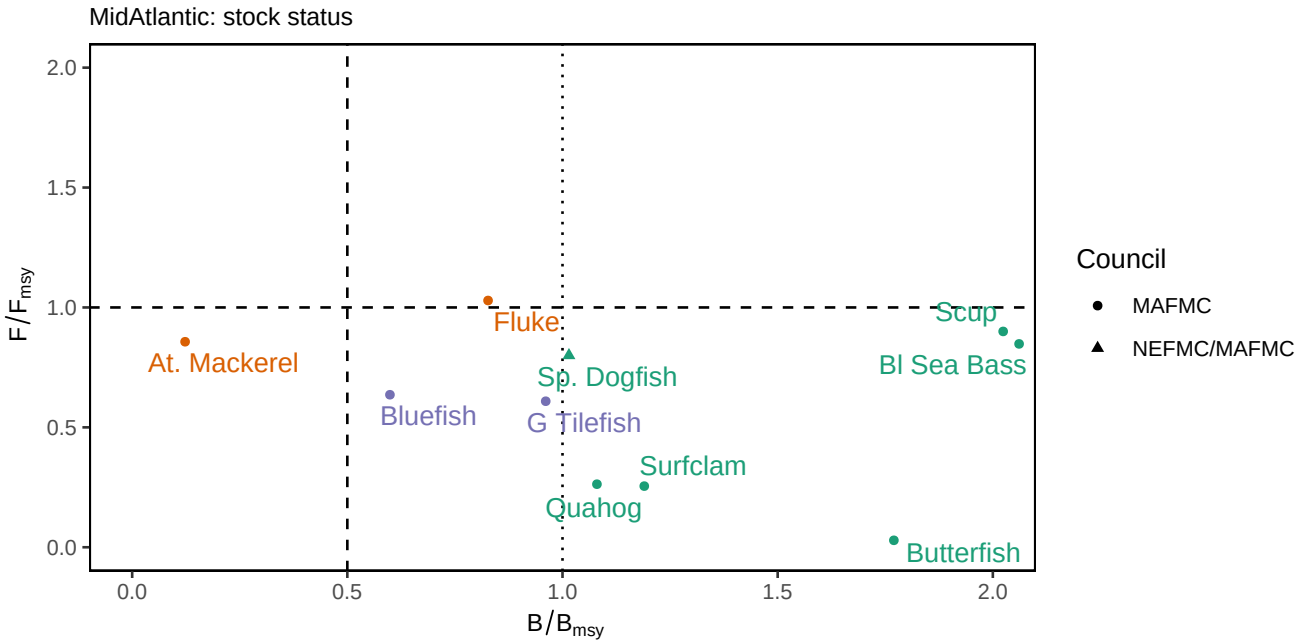


Figure 5: Summary of single species status for MAFMC and jointly federally managed stocks (Spiny dogfish and both Goosefish). The dotted vertical line is the target biomass reference point of B_{MSY}. The dashed lines are the management thresholds of one half B_{MSY} (vertical) or F_{MSY}. (horizontal). Stocks in orange are below the biomass threshold (overfished) or have fishing mortality above the limit (subject to overfishing), so are not meeting objectives. Stocks in purple are above the biomass threshold but below the biomass target with fishing mortality within the limit. Stocks in green are above the biomass target, with fishing mortality within the limit.

Table 2: Unknown or partially known stock status for MAFMC and jointly managed species.

Stock	F/Fmsy	B/Bmsy
Longfin inshore squid - Georges Bank / Cape Hatteras	-	2.873
Northern shortfin squid - Northwestern Atlantic Coast	-	-
Goosefish - Gulf of Maine / Northern Georges Bank	-	-
Goosefish - Southern Georges Bank / Mid-Atlantic	-	-

Stock status affects catch limits established by the Council, which in turn may affect landings trends. Summed across all MAFMC managed species, total Acceptable Biological Catch or Annual Catch Limits (ABC or ACL) have been relatively stable 2012-2022 (Fig. 6). The recent total ABC or ACL is lower relative to 2012-2013, with much of that decrease due to declining Atlantic mackerel ABC. This is true even with the addition of blueline tilefish management in 2017 contributing an additional ABC and ACL to the total 2017-2022, due to that fishery's small relative size.

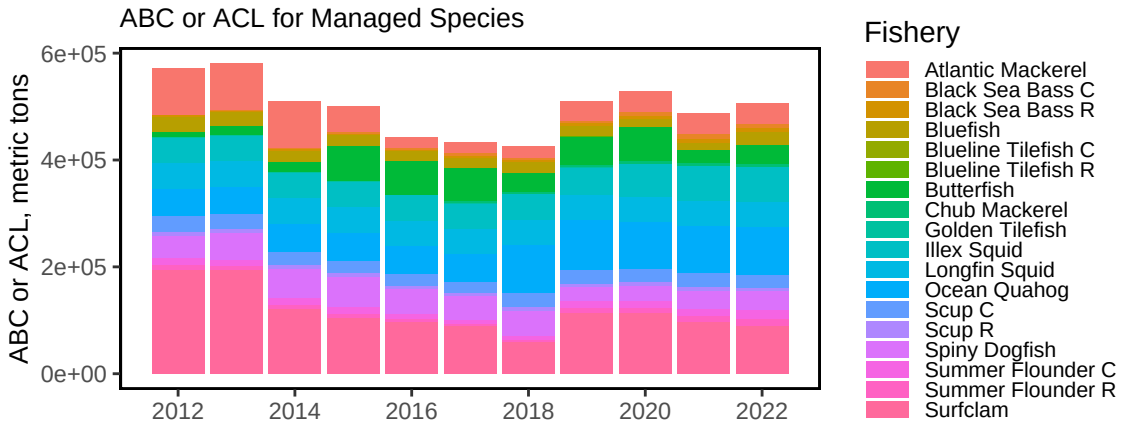


Figure 6: Sum of catch limits across all MAFMC managed commercial (C) and recreational (R) fisheries.

Nevertheless, the percentage caught (landings and discards) for each stock's ABC/ACL suggests that these catch limits are not generally constraining as most species are well below the 1/1 ratio (Fig. 7). Therefore, stock status and associated management constraints are unlikely to be driving decreased landings for the majority of species.

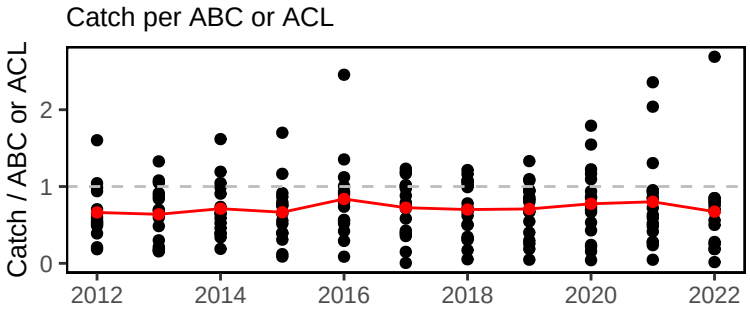


Figure 7: Catch divided by ABC/ACL for MAFMC managed fisheries. High points are recreational black sea bass (up to 2021) and scup (2022). Red line indicates the median ratio across all fisheries.

System Biomass Although aggregate biomass trends derived from scientific resource surveys are mostly stable in the MAB, spring piscivores and fall benthivores show long-term increases (Fig. 8). While managed species make up varying proportions of aggregate biomass, trends in landings are not mirroring shifts in the overall trophic structure of survey-sampled fish and invertebrates. Therefore, major shifts in feeding guilds or ecosystem trophic structure are unlikely to be driving the decline in landings.

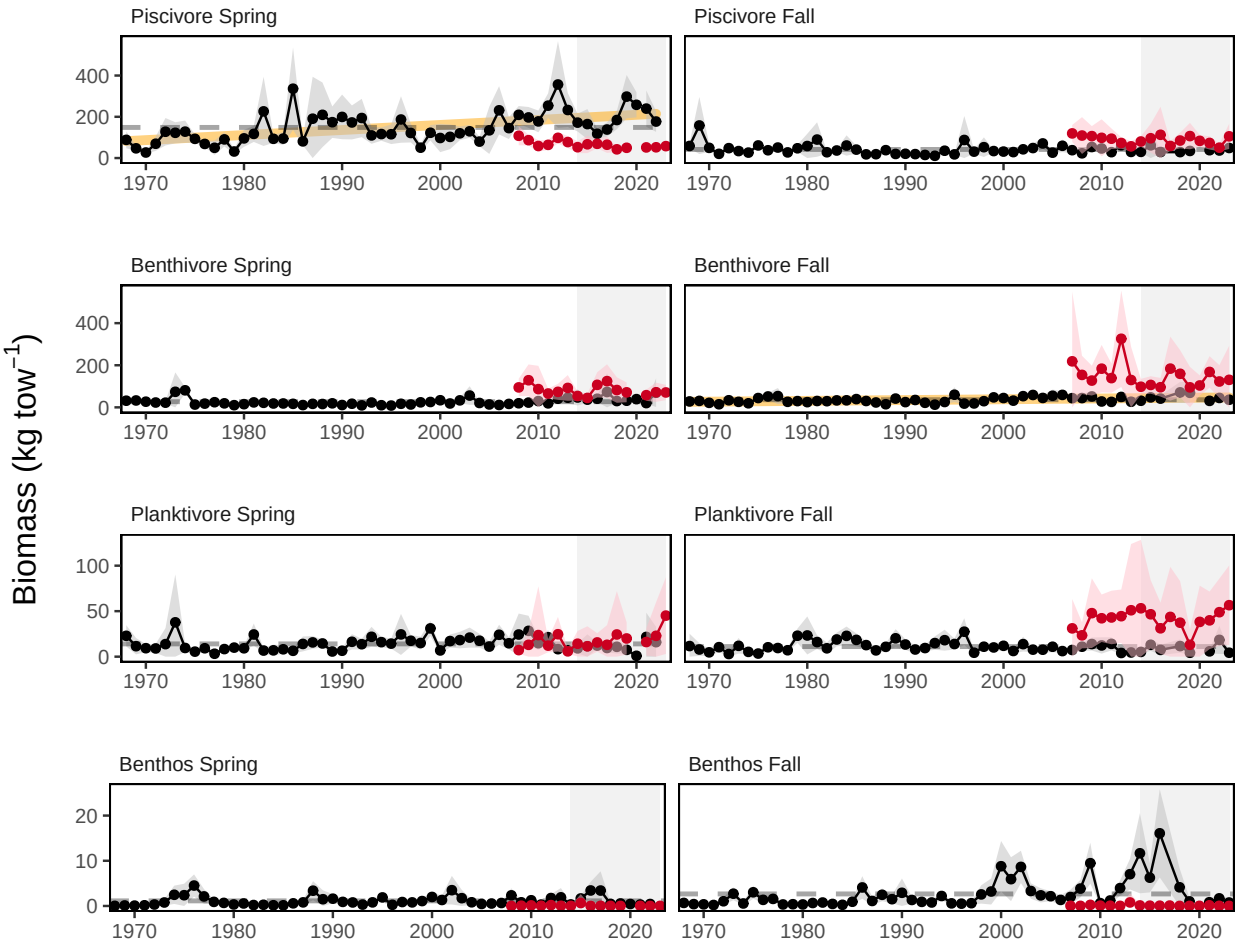


Figure 8: Spring (left) and fall (right) surveyed biomass in the Mid-Atlantic Bight. Data from the NEFSC Bottom Trawl Survey are shown in black, with the nearshore NEAMAP survey shown in red. Significant increases (orange lines) are present for spring piscivore and fall benthivore biomass. The shaded area around each annual mean represents 2 standard deviations from the mean.

Effect on Seafood Production Stock status is above the minimum threshold for all but two stocks, and aggregate biomass trends appear stable, so the decline in managed commercial seafood landings is most likely driven by market dynamics affecting the landings of surfclams and ocean quahogs, as landings have been below quotas for these species. In addition, regional availability of scallops has contributed to the decline of benthos landings not managed by the MAFMC, with some of the most productive grounds currently closed through rotational management. The long term decline in total planktivore landings is largely driven by Atlantic menhaden fishery dynamics, including a consolidation of processors leading to reduced fishing capacity between the 1990s and mid-2000s.

Climate change also seems to be shifting the distribution of surfclams and ocean quahogs, resulting in areas with overlapping distributions and increased mixed landings. Given the regulations governing mixed landings, this could become problematic in the future and is currently being evaluated by the Council.

The decline in recreational seafood harvest stems from other drivers. Some of the decline, such as that for recreational shark landings, is driven by management intended to reduce fishing mortality on mako sharks. However, NOAA Fisheries' Marine Recreational Information Program survey methodology was updated in 2018, so it is unclear whether the lower than average landings for species other than sharks since 2018 are driven by changes in fishing behavior or the change in the survey methodology. Nevertheless, the recreational harvest seems to be stabilizing at a lower level than historical estimates.

Other environmental changes require monitoring as they may become important drivers of landings in the future:

- Climate is trending into uncharted territory. Globally, 2023 was the warmest year on record (see 2023 Highlights section).
- Stocks are shifting their distributions, moving towards the northeast and into deeper waters throughout the Northeast US Large Marine Ecosystem (see Climate Risks section).
- Some ecosystem composition and production changes have been observed (see Stability section).
- Some fishing communities are affected by environmental justice vulnerabilities (see Environmental Justice and Social Vulnerability section).

Commercial Profits

Indicators: revenue (a proxy for profits)

Total commercial revenue and MAFMC managed species revenue within the Mid-Atlantic Bight have declined over the past 20-30 years. In 2022, total revenue was at an all-time low, and revenue from MAFMC managed species was near an all-time low (Fig. 9).

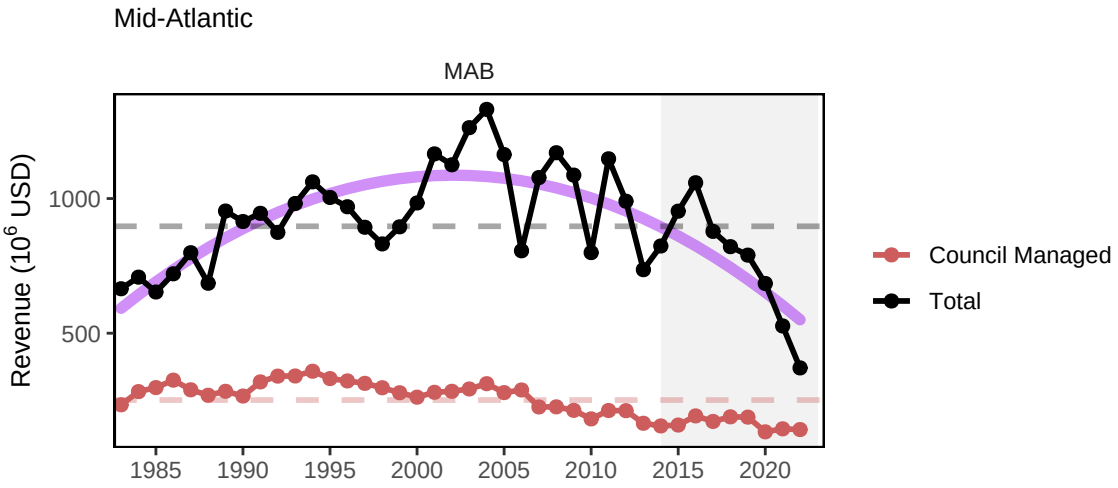


Figure 9: Revenue for the for the Mid-Atlantic region: total (black) and from MAFMC managed species (red), with a significant decrease (purple) for total revenue.

Revenue earned by harvesting resources is a function of both the quantity landed of each species and the prices paid for landings. Beyond monitoring yearly changes in revenue, it is even more valuable to determine what drives these changes: harvest levels, the mix of species landed, price changes, or a combination of these. The Bennet Indicator decomposes revenue change into two parts, one driven by changing quantities (volumes), and a second driven by changing prices. All changes are in relation to a base year (1982).

In the Mid-Atlantic region revenues were above the 1982 baseline for all years in the series until 2022 (Fig. 10). Both increasing prices and volumes contributed to the positive revenue change in most years. In terms of prices, since 2000 Benthos contributed the most to increasing prices (Fig. 11). Beginning in the 1990s, in most years benthivores contributed the most to increasing volumes (Fig. 11).

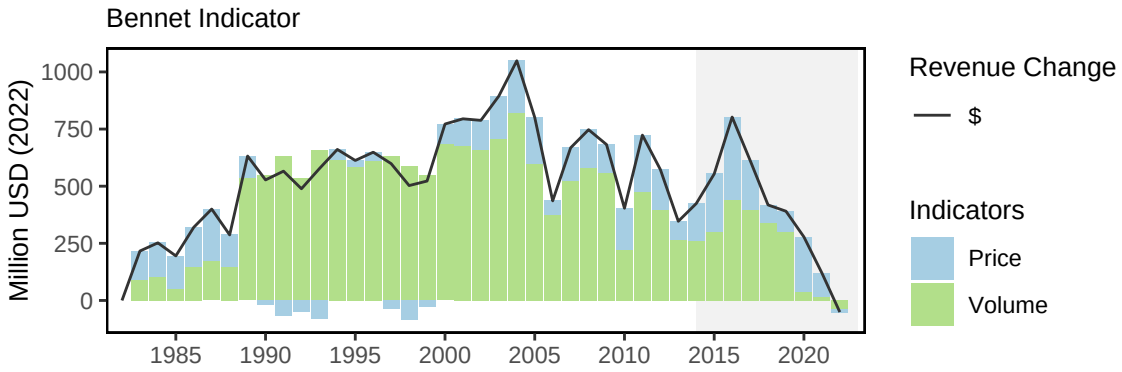


Figure 10: Revenue change from 1982 values in 2022 dollars (black); Price (PI), and Volume Indicators (VI) for total commercial landings in the Mid-Atlantic Bight.

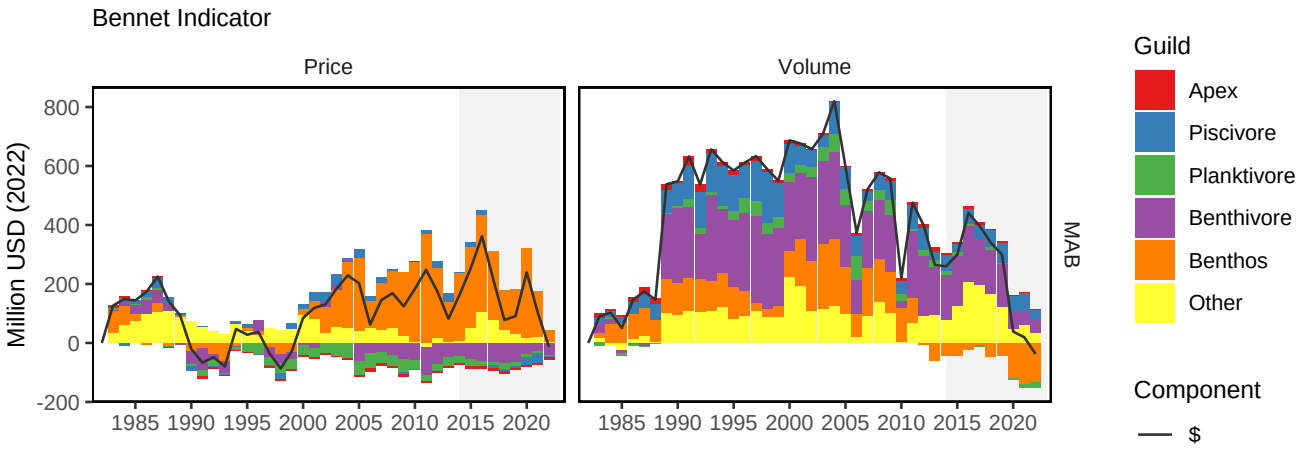


Figure 11: Total price and volume indicators in 2022 dollars (black) for commercial landings, and individual guild contributions to each indicator, in the Mid-Atlantic Bight.

Implications

Although the Mid-Atlantic region shows declining revenue trends since 2016, inflation-adjusted revenue from harvested species was still greater than 1982 levels until 2022. In a similar manner to seafood landings, the results here are driven in large part by market dynamics affecting the landings of surfclams and ocean quahogs, as landings have been below quotas for these species, as well as lower quotas for Atlantic scallops. The declining Benthos category since 2012 may be partially caused by decreases in surfclam and ocean quahogs in the southern part of their range as harvest have shifted northward. Changes in other indicators, particularly those driving landings and those related to climate change, require monitoring as they may become important drivers of revenue in the future; for example:

- Surfclams, ocean quahogs, and scallops are sensitive to warming ocean temperatures and ocean acidification.
- Multiple stressors are interacting in Mid-Atlantic shellfish habitats.

Recreational Opportunities

Indicators: Angler trips, fleet diversity

Recreational effort (angler trips) in 2022 has increased and is above the long-term average (Fig. 12). in the MAB. However, recreational fleet diversity (i.e., effort by shoreside, private boat, and for-hire anglers) has declined over

the long term (Fig. 13).

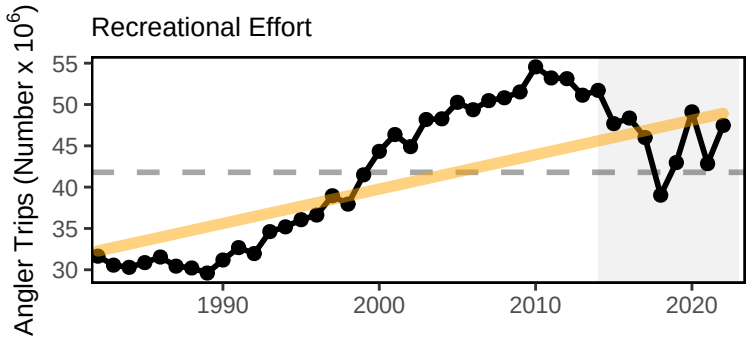


Figure 12: Recreational effort (number of trips, black) in the Mid-Atlantic, with significant increase (orange line).

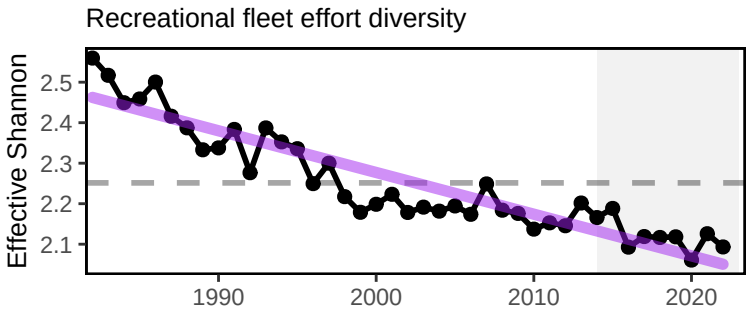


Figure 13: Recreational fleet effort diversity (black) in the Mid-Atlantic, with significant decrease (purple line).

Implications

While the overall number of recreational opportunities in the MAB is above the long-term average, the continuing decline in recreational fleet effort diversity suggests a potentially reduced range of recreational fishing options, despite the slight increase in this indicator's value between 2020 and 2022.

The downward effort diversity trend is driven by party/charter contraction (down from 2% in 2021 to 1.4% in 2023), and a shift toward shorebased angling, which currently makes up 59% of angler trips. Effort in private boats has increased slightly to 40% of trips from 37% in 2021.

Changes in recreational fleet diversity can be considered when managers seek options to maintain recreational opportunities. Shore anglers will have access to different species than vessel-based anglers, and when the same species is accessible both from shore and from a vessel, shore anglers typically have access to smaller individuals. Many states have developed shore-based regulations where the minimum size is lower than in other areas and sectors to maintain opportunities in the shore angling sector.

Stability

Indicators: fishery fleet and catch diversity, ecological component diversity

While there are many potential metrics of stability, we use diversity indices to evaluate overall stability in fisheries and ecosystems. In general, diversity that remains constant over time suggests a similar capacity to respond to change over time. A significant change in diversity over time does not necessarily indicate a problem or an improvement, but does indicate a need for further investigation. We examine diversity in commercial fleet and species catch, recreational species catch (with fleet effort diversity discussed above), zooplankton, and adult fishes.

Fishery Stability Diversity estimates have been developed for fleets landing managed species, and species landed by commercial vessels with Mid-Atlantic permits. Commercial fishery fleet count and fleet diversity have been stable over time in the MAB, with current values near the long-term average. This indicates similar commercial fleet composition and species targeting opportunities over time. Commercial fisheries are relying on fewer species relative to the mid-90s, although current species revenue diversity has recovered somewhat in the last year (Fig. 14).

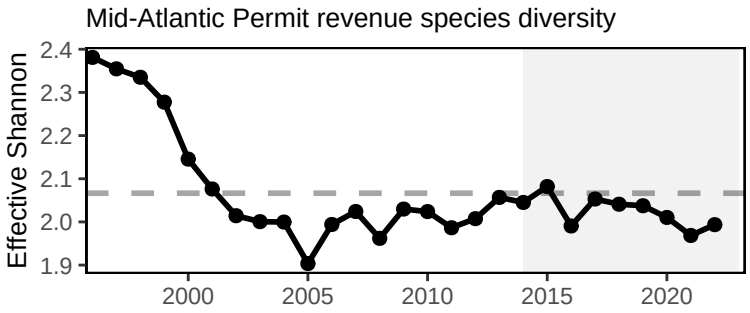


Figure 14: Species revenue diversity in the Mid Atlantic.

As noted above, recreational fleet effort diversity is declining (Fig. 13), suggesting a shift in recreational fishing opportunities. However, recreational species catch diversity has no long term trend so is considered stable, and has been at or above the long term average in 8 of the last 10 years (Fig. 15).

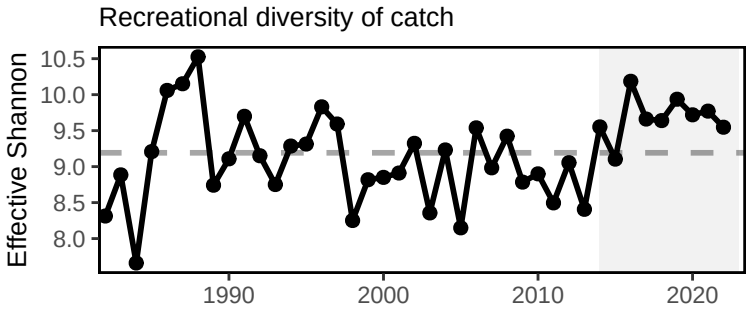


Figure 15: Diversity of recreational catch in the Mid Atlantic.

Ecological Stability Total primary production (PP) is a measure of the total energy input into a system per year. Total primary production in the Mid Atlantic has no clear trend (Fig. 16), suggesting stability in energy at the base of the food web.

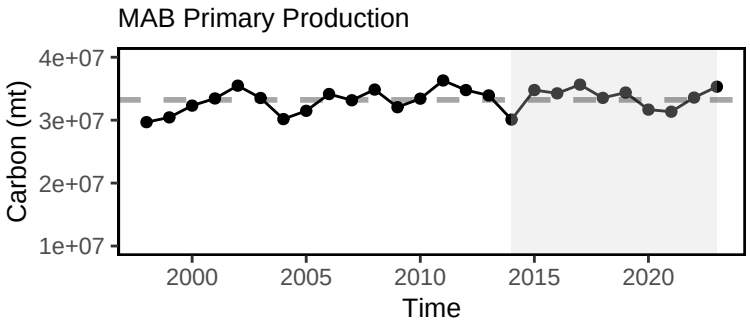


Figure 16: Total areal annual primary production for the MAB. The dashed line represents the long-term (1998-2023) annual mean.

Ecological diversity indices show mixed trends. Zooplankton diversity is increasing in the MAB (Fig. 17). Adult fish diversity is measured as the expected number of species in a standard number of individuals sampled from the NEFSC bottom trawl survey. Adult fish diversity indices appear stable over time, with current values within one standard deviation from most historic estimates (Fig. 18).

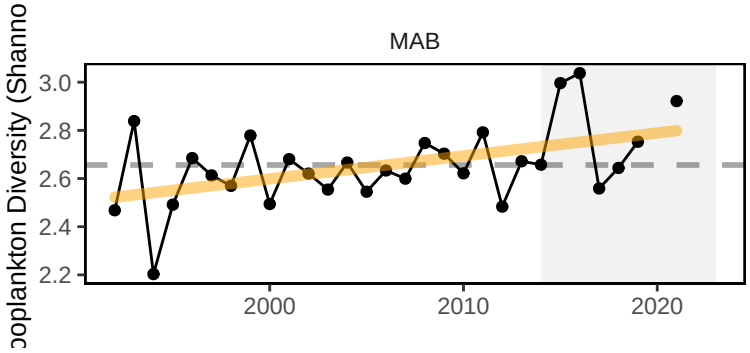


Figure 17: Zooplankton diversity in the Mid-Atlantic Bight, Shannon diversity index (black) with significant increase (orange line).

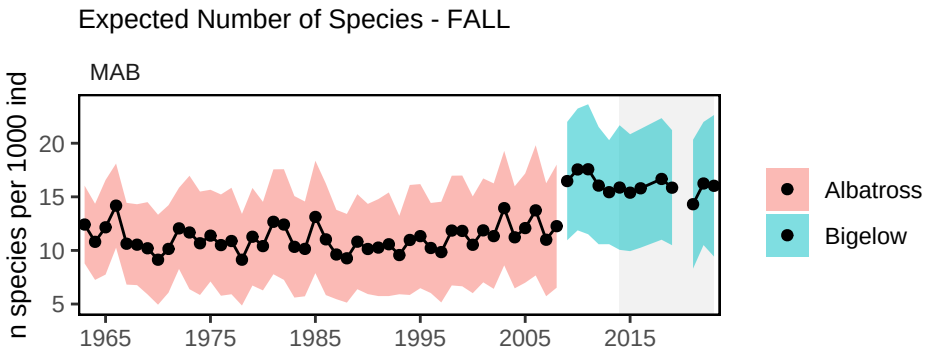


Figure 18: Adult fish diversity in the Mid-Atlantic Bight, based on expected number of species. Results from survey vessels Albatross and Bigelow are reported separately due to catchability differences.

Implications

Fleet diversity indices are used by the MAFMC to evaluate stability objectives as well as risks to fishery resilience and maintaining equity in access to fishery resources. Stability in commercial fleet diversity metrics suggests stable capacity to respond to the current range of fishing opportunities. However, commercial species diversity remains low when compared to historical levels.

Declining recreational fleet effort diversity, as noted above, indicates that the party/charter boat sector continues to contract, with shoreside angling becoming more important as a percentage of recreational angler trips. Stability in recreational species catch diversity has been maintained by a different set of species over time. A recent increase in Atlantic States Marine Fisheries Commission (ASMFC) and South Atlantic Fishery Management Council (SAFMC) managed species in recreational catch is helping to maintain diversity in the same range that MAFMC and New England Fishery Management Council (NEFMC) managed species supported in the 1990s.

Production at the base of the food web is variable, but stable over time. Ecological diversity indices can provide insight into ecosystem structure. Changes in ecological diversity over time may indicate altered ecosystem structure with implications for fishery productivity and management. Stable adult fish diversity indicates the same overall number and evenness over time, but doesn't rule out species substitutions (e.g., warm-water replacing cold-water). In addition, the change in survey vessels complicates interpretation of long-term fish diversity trends.

In the MAB, existing diversity indicators suggest overall stability in the fisheries and ecosystem components examined. However, declining recreational fleet diversity suggests a potential loss in the range of recreational fishing opportunities. Increasing zooplankton diversity (due to increases in abundance of several taxa and stable or declining dominance of an important copepod species) suggests a shift in the zooplankton community that warrants continued monitoring to determine if managed species are affected. In addition, the species diversity in commercial landings warrants continued attention given its relatively low index value indicating average reliance on a small number of species for revenue.

Environmental Justice and Social Vulnerability

Providing for sustained participation of fishing communities, and avoiding adverse economic impacts to fishing communities are objectives of fishery management. We report the top ten communities most engaged in, and/or reliant upon, commercial and recreational fisheries and the degree to which these communities may be vulnerable to environmental justice issues (i.e., Poverty, Population Composition, and Personal Disruption) using data for the most recent available year (2021). We also compare these results with those presented in previous SOE reports to highlight changes in community status.

Indicators: Environmental Justice and Social Vulnerability in commercial and recreational fishing communities

The engagement and reliance indices demonstrate the importance of commercial and recreational fishing to a given community relative to other coastal communities in a region. Social vulnerability indicators measure social factors that shape a community's ability to adapt to change. A subset of these factors can be used to assess potential environmental justice issues. Similarly to the engagement and reliance indicators, the environmental justice indices characterize different facets and levels of social vulnerability in a given community relative to other coastal communities in a region.

Changes in fishing activity between years changed community engagement and reliance rankings. The largest change from last year's report is that Hatteras and Hobucken, NC are no longer listed as top ten commercial fishing communities, replaced by Hampton, VA; Swan Quarter, NC; Bowers and Little Creek, DE (Fig.19). Manteo, Vandemere, and Hobuken, NC are no longer listed as top ten recreational communities, replaced by Cape May and Barnegat Light, NJ; Orient, NY; Topsail Beach, Avon and Rodanthe, NC (Fig.20).

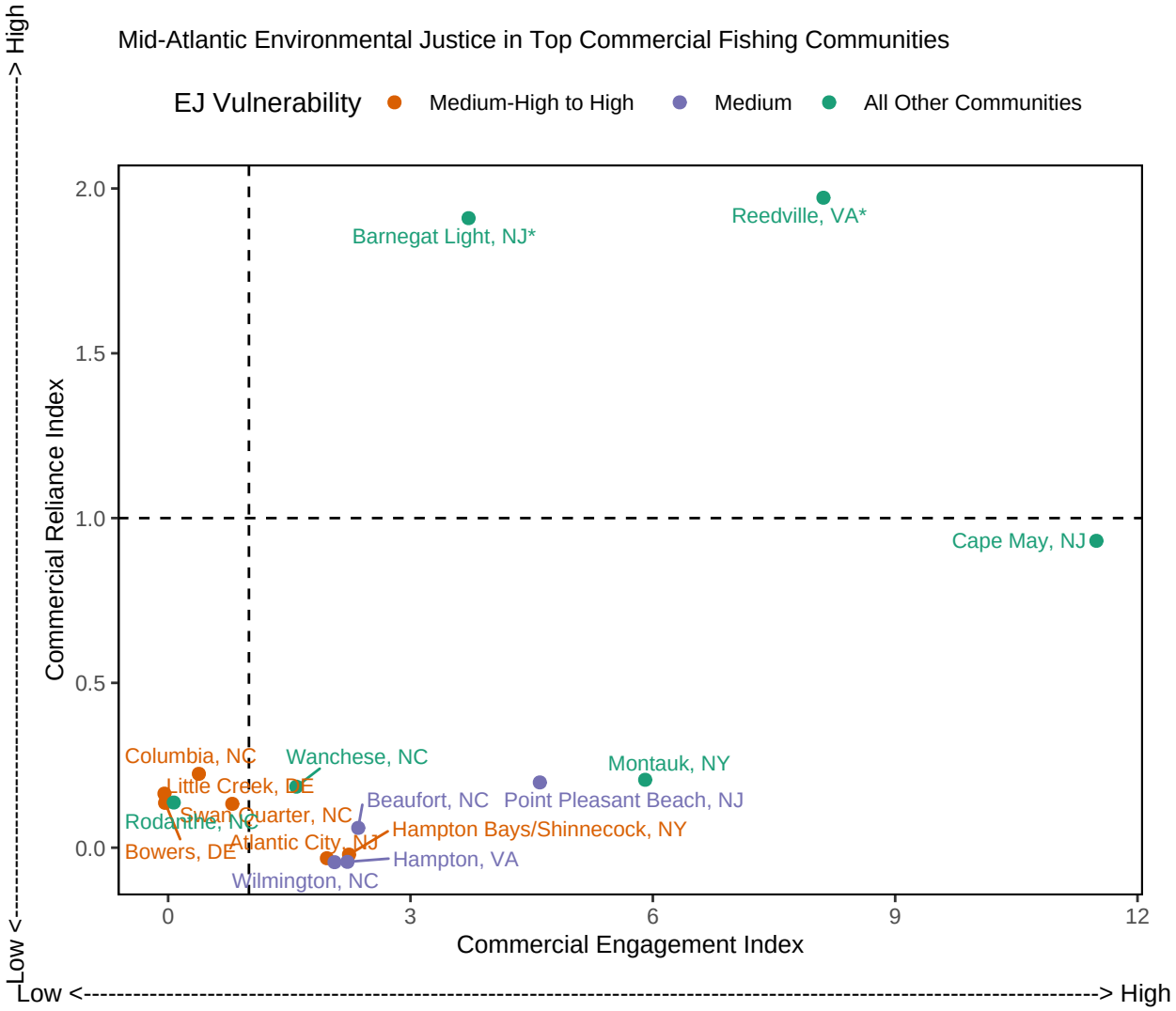


Figure 19: Commercial engagement, reliance, and environmental justice vulnerability for the top commercially engaged and reliant fishing communities in the Mid-Atlantic.

Scores for environmental justice concerns remain similar for communities based on 2020 and 2021 data, with top commercial ports (Fig. 21) showing more concerns than top recreational ports overall (Fig. 22). Atlantic City, NJ ranks highest for all three environmental justice concerns. There is variability in the specific issues facing communities with environmental justice concerns. Higher scores in population composition indicate community vulnerability related to the presence of non-white, non-English speaking, and younger populations.

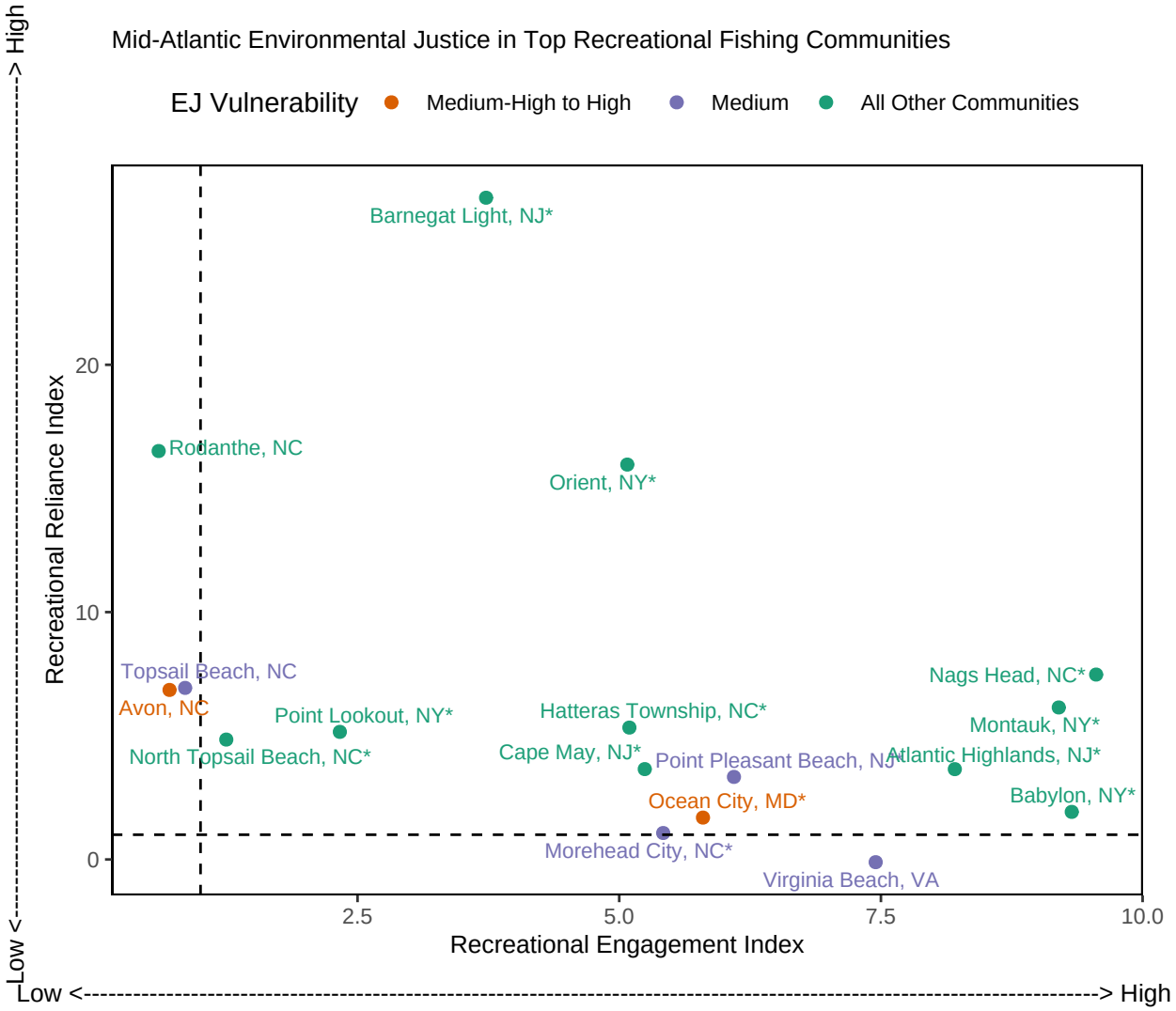


Figure 20: Recreational engagement and reliance, and environmental justice vulnerability, for the top recreationally engaged and reliant fishing communities in the Mid-Atlantic.

Both commercial and recreational fishing are important activities in Montauk, NY, Cape May, Barnegat Light and Point Pleasant Beach, NJ; and Rodanthe, NC, meaning these communities may be impacted simultaneously by commercial and recreational regulatory changes. However, in all but Point Pleasant Beach NJ, environmental justice may not be a major concern in these communities given the index scores (Figs 21 and 22)). Point Pleasant Beach, NJ scored medium for the personal disruption index, indicating that environmental justice may be a moderate concern in Point Pleasant Beach.

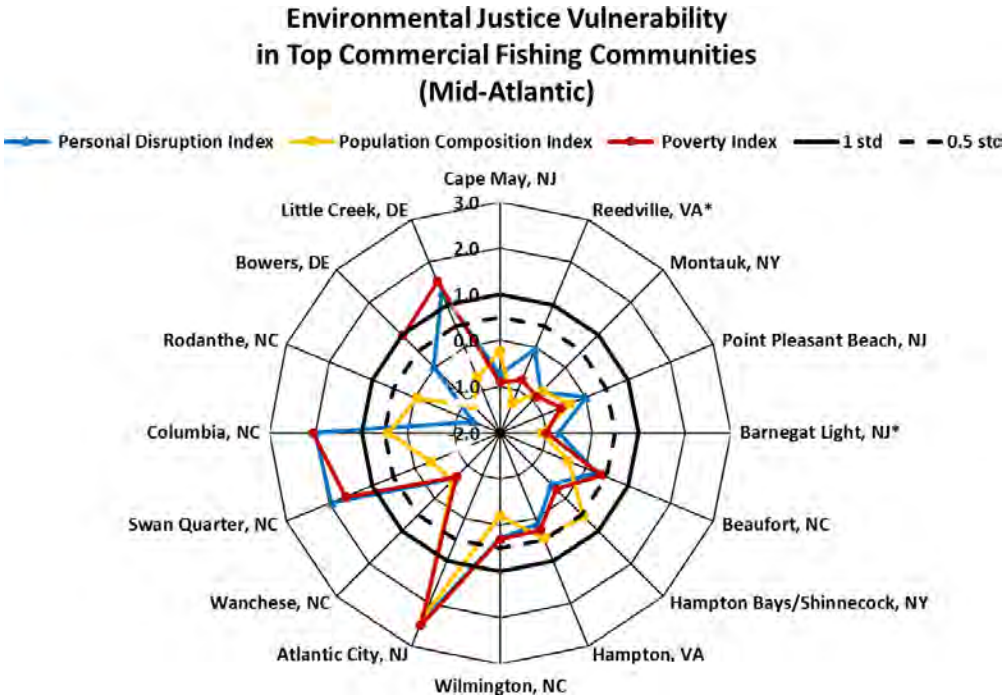


Figure 21: Environmental justice indicators (Poverty Index, population composition index, and personal disruption index) for top commercial fishing communities in Mid-Atlantic. Some communities are missing data for some indices. *Community scored high (1.00 and above) for both commercial engagement and reliance indicators.

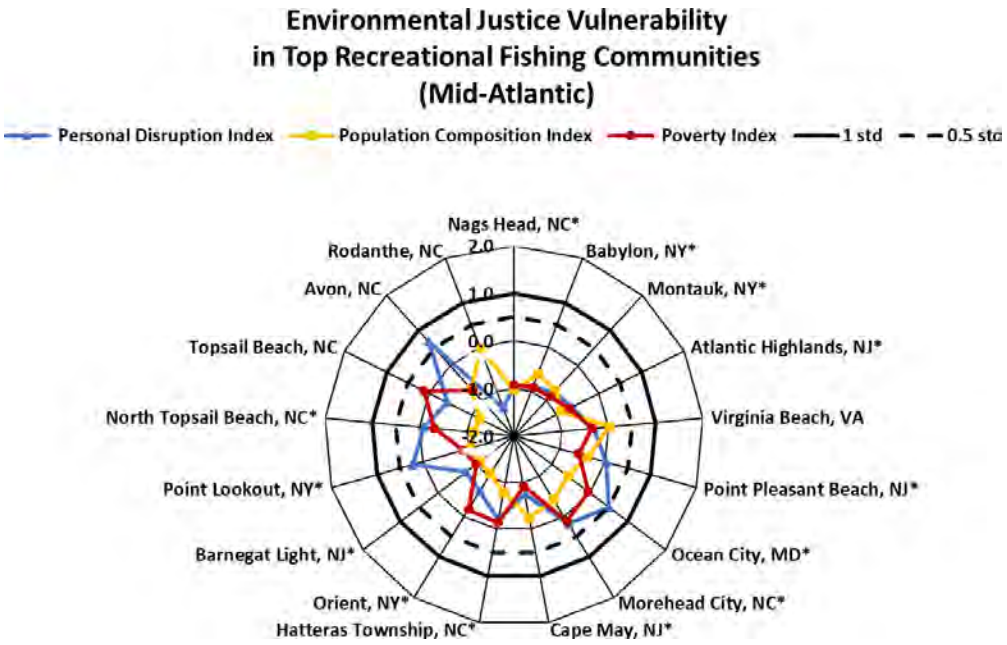


Figure 22: Environmental justice indicators (Poverty Index, population composition index, and personal disruption index) for top recreational fishing communities in Mid-Atlantic. Some communities are missing data for some indices. *Community scored high (1.00 and above) for both recreational engagement and reliance indicators.

Implications

A range of environmental justice concerns are found throughout Mid-Atlantic fishing communities. However, index scores for these concerns are higher overall in the top commercial communities relative to the top recreational communities.

These indicators provide a snapshot of the presence of environmental justice issues in the most highly engaged and most highly reliant commercial and recreational fishing communities in the Mid-Atlantic. These communities may be especially vulnerable to changes in fishing patterns due to regulations and/or climate change. Some changes occurred among the top fishing communities due to shifts in fishing activities, both commercial and recreational. Many of these communities, especially top commercial fishing communities, demonstrated medium to high environmental justice vulnerability, indicating that they may be at a disadvantage when responding to change.

Protected Species

Fishery management objectives for protected species generally focus on reducing threats and on habitat conservation/restoration. Protected species include marine mammals protected under the Marine Mammal Protection Act, endangered and threatened species protected under the Endangered Species Act, and migratory birds protected under the Migratory Bird Treaty Act. In the Northeast U.S., endangered/threatened species include Atlantic salmon, Atlantic and shortnose sturgeon, all sea turtle species, and five baleen whales. Protected species objectives include managing bycatch to remain below potential biological removal (PBR) thresholds, recovering endangered populations, and monitoring unusual mortality events (UMEs). Here we report on performance relative to these objectives with available indicator data, as well as indicating the potential for future interactions driven by observed and predicted ecosystem changes in the Northeast U.S.

Indicators: bycatch, population (adult and juvenile) numbers, mortalities

Average indices for both harbor porpoise (Fig. 23) and gray seal bycatch (Fig. 24) are below current PBR thresholds, meeting management objectives.

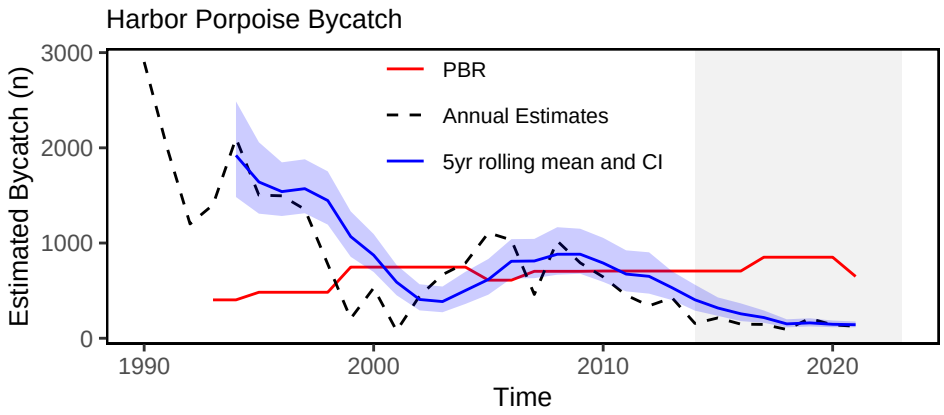


Figure 23: Harbor porpoise average bycatch estimate for Mid-Atlantic and New England gillnet fisheries (blue) and the potential biological removal (red).

The annual estimate for gray seal bycatch has declined since 2019, in part driven by declining gillnet landings. In addition, estimates since 2019 have greater uncertainty stemming from low observer coverage since 2019. The rolling mean confidence interval remains just below the PBR threshold.

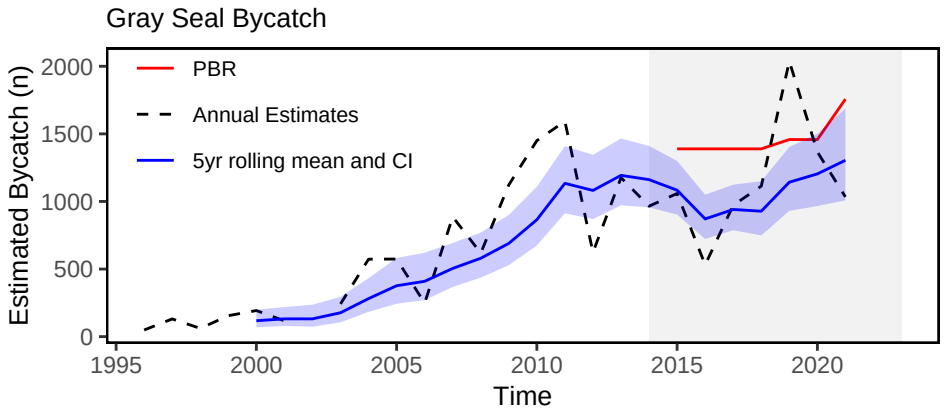


Figure 24: Gray Seal average bycatch estimate for gillnet fisheries (blue) and and the potential biological removal (red).

The North Atlantic right whale population was on a recovery trajectory until 2010, but has since declined (Fig. 25). The sharp decline observed from 2015-2020 appears to have slowed, although the right whale population continues to experience annual mortalities above recovery thresholds. Reduced survival rates of adult females lead to diverging abundance trends between sexes. It is estimated that there are fewer than 70 adult females remaining in the population.

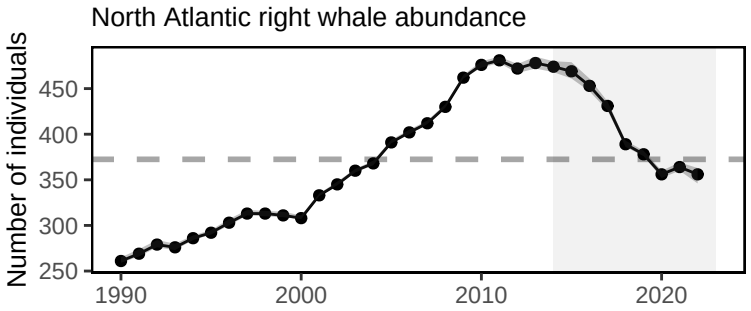


Figure 25: Estimated North Atlanic right whale abundance on the Northeast Shelf.

North Atlantic right whale calf counts have generally declined after 2009 to the point of having zero new calves observed in 2018 (Fig. 26). However, since 2019, we have seen more calf births each year with 15 births in 2022.

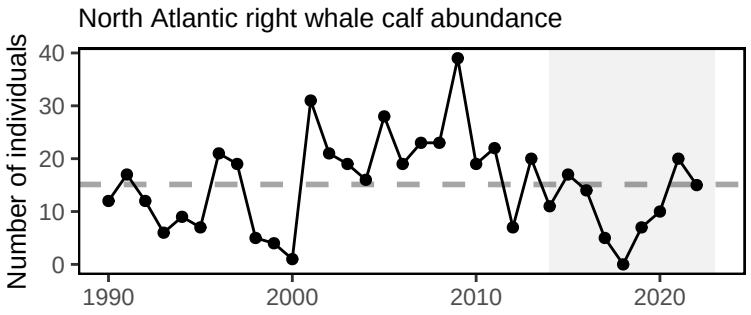


Figure 26: Number of North Atlantic right whale calf births, 1990 - 2022.

This year, the Unusual Mortality Event (UME) for North Atlantic right whales continued. From 2017 through 16 February 2024, the total UME right whale mortalities includes 38 dead stranded whales, 17 in the US and 21 in Canada. When alive but seriously injured whales (34) and sublethal injuries or ill whales (51) are taken into account, 123 individual whales are included in the UME. Recent research suggests that many mortalities go unobserved and the true number of mortalities are about three times the count of the observed mortalities. The primary cause of death is "human interaction" from entanglements or vessel strikes.

A UME continued from previous years for humpback whales (2016-present) and Atlantic minke whales (2018-present); suspected causes include human interactions. A UME for Northeast pinnipeds that began in 2018 for infectious disease is pending closure as of February 2024.

Implications

Bycatch management measures have been implemented to maintain bycatch below PBR thresholds. The downward trend in harbor porpoise bycatch could also be due to a decrease in harbor porpoise abundance in U.S. waters, reducing their overlap with fisheries, and a decrease in gillnet effort. The increasing trend in gray seal bycatch may be related to an increase in the gray seal population (U.S. pup counts), supported by the dramatic rise over the last three decades in observed numbers of gray seal pups born at U.S. breeding sites plus an increase in adult seals at the breeding sites, some of which are supplemented by Canadian adults.

Strong evidence exists to suggest that interactions between right whales and both the fixed gear fisheries in the U.S. and Canada and vessel strikes in the U.S. are contributing substantially to the decline of the species. Further, right whale distribution has changed since 2010. New research suggests that recent climate driven changes in ocean circulation have resulted in right whale distribution changes driven by increased warm water influx through the Northeast Channel, which has reduced the primary right whale prey (the copepod Calanus finmarchicus) in the central and eastern portions of the Gulf of Maine. Additional potential stressors include offshore wind development, which overlaps with important habitat areas used year-round by right whales, including mother and calf migration corridors and foraging habitat. This area is also the only known right whale winter foraging habitat. Additional information can be found in the offshore wind risks section.

The UMEs are under investigation and are likely the result of multiple drivers. For all large whale UMEs, human interaction appears to have contributed to increased mortalities, although investigations are not complete.

A climate vulnerability assessment is published for Atlantic and Gulf of Mexico marine mammal populations.

Risks to Meeting Fishery Management Objectives

Climate and Ecosystem Change

Regulations and measures designed to meet fishery management objectives are often based on historical information about stocks, their distribution in space and time, and their overall productivity. Large scale climate related changes in the ecosystem can lead to changes in important habitats and ecological interactions, altering distributions and productivity. With large enough ecosystem changes, management measures may be less effective, and management objectives may not be met.

This year, we have restructured this section to focus on three categories of management decisions and the risk posed to them by climate and ecosystem change: spatial management, seasonal management, and quota setting or rebuilding depleted stocks. In each section, we describe potential risks to a management category, highlight indicators of observed changes that contribute to those risks, review possible biological and environmental drivers and the ways they may explain the observed indicators, and raise potential future implications if these trends persist or change.

Risks to Spatial Management

Shifting species distributions (changes in spatial extent or center of gravity) alter both species interactions and fishery interactions. In particular, shifting species distributions can affect expected management outcomes from spatial

allocations and bycatch measures based on historical fish and protected species distributions. Species availability to surveys can also change as distributions shift within survey footprints.

Indicators: Fish and protected species distribution shifts As noted in the Landings Implications section above, the center of distribution for a suite of 48 commercially or ecologically important fish species along the entire Northeast Shelf continues to show movement towards the northeast and generally into deeper water (Fig. 27).

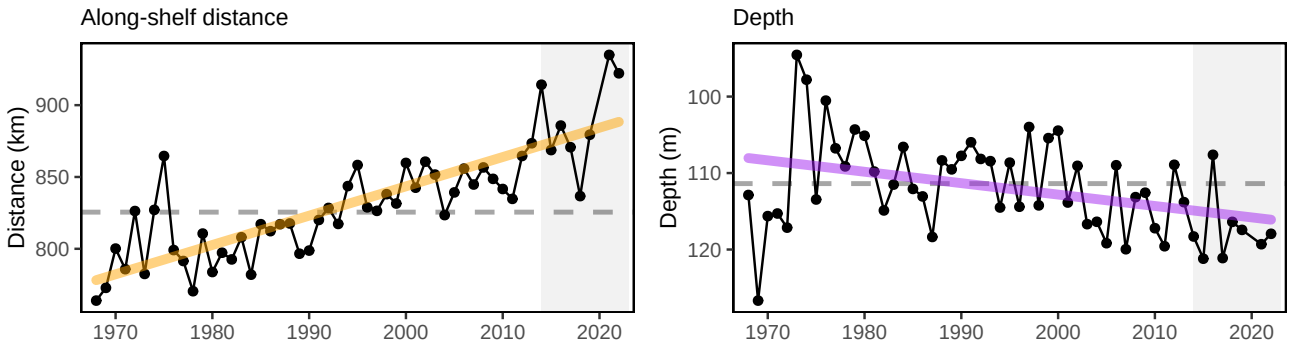


Figure 27: Aggregate species distribution metrics for species in the Northeast Large Marine Ecosystem: along shelf distance with increasing trend (orange), and depth with decreasing trend indicating deeper water (purple).

Habitat model-based species richness suggests shifts of both cooler and warmer water species to the northeast. Similar patterns have been found for marine mammals, with multiple species shifting northeast between 2010 and 2017 in most seasons (Fig. 28).

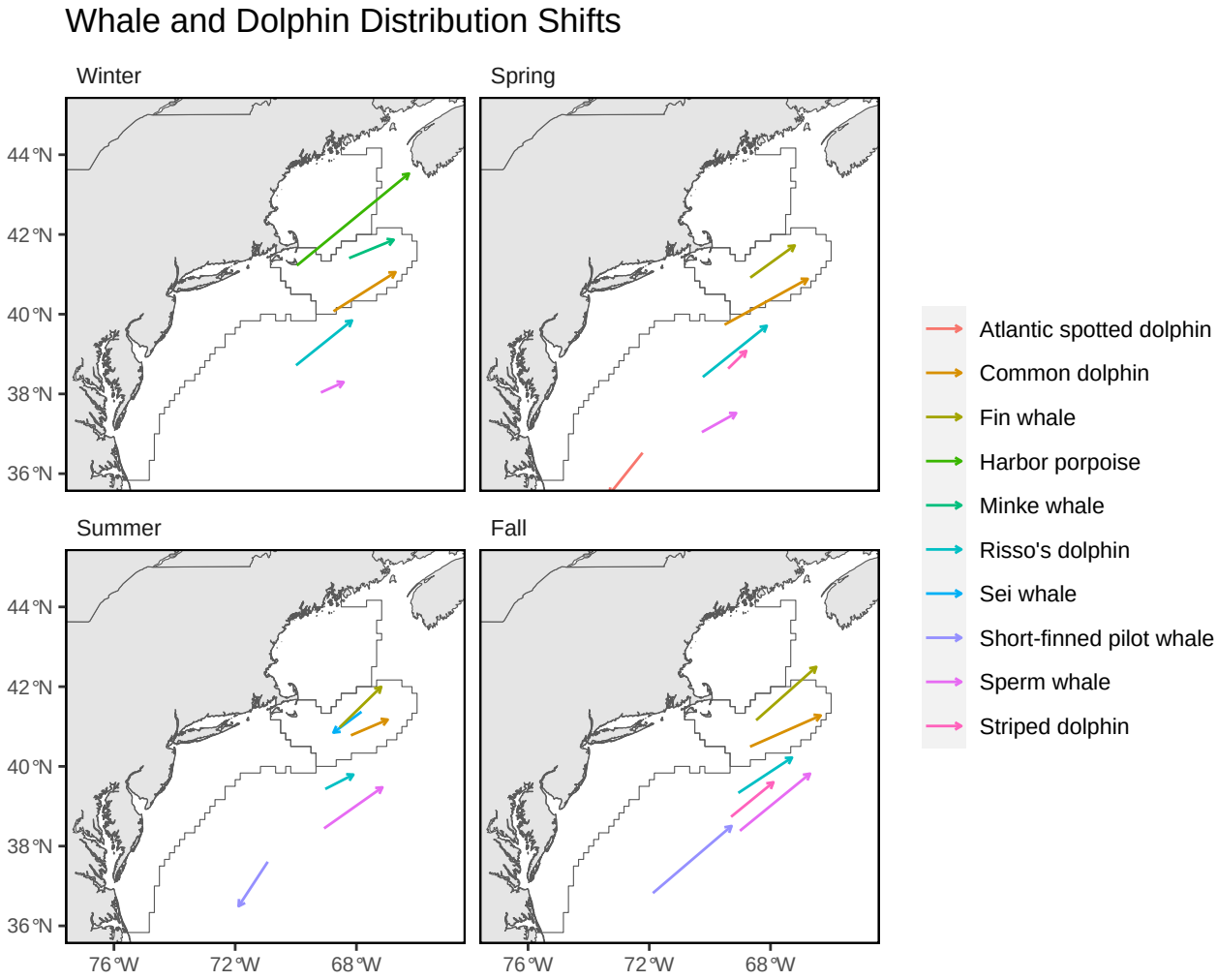


Figure 28: Direction and magnitude of core habitat shifts, represented by the length of the line of the seasonal weighted centroid for species with more than 70 km difference between 2010 and 2017 (tip of arrow).

Drivers: Mobile populations shift distributions to maintain suitable temperature and prey fields, possibly expanding ranges if new suitable habitat exists. Changes in managed species distribution is related, in part, to the distribution of forage biomass. Since 1982, the fall center of gravity of forage fish (20 species combined) has moved to the north and east (Fig. 29). Spring forage fish center of gravity has been more variable over time.

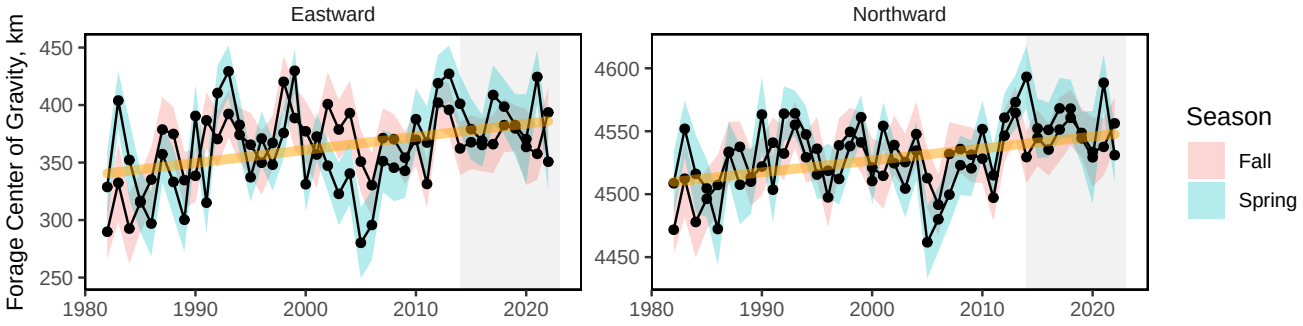


Figure 29: Eastward (left) and northward (right) shifts in the center of gravity for 20 forage fish species on the Northeast U.S. Shelf, with increasing trend (orange) for fall eastward and northward center of gravity.

Ocean temperatures influence the distribution, seasonal timing, and productivity of managed species (see sections below). The Northeast US shelf, including the Mid-Atlantic, has experienced a continued warming trend for both the long term (Fig. 30) and recent surface and bottom in all seasons.

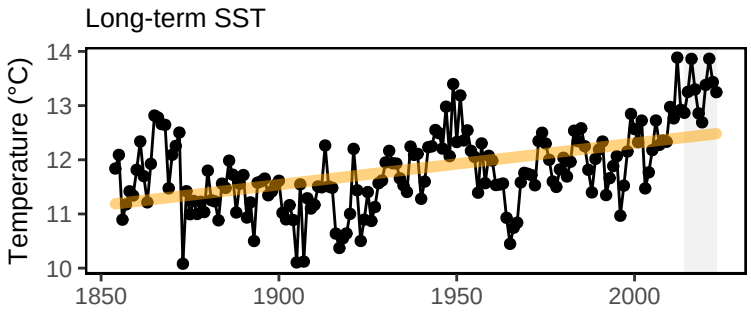


Figure 30: Northeast US annual sea surface temperature (SST, black), with increasing trend (orange).

Species suitable habitat can expand or contract when changes in temperature and major oceanographic conditions alter distinct water mass habitats.The variability of the Gulf Stream is a major driver of the predominant oceanographic conditions of the Northeast U.S. continental shelf. As the Gulf Stream has become less stable and shifted northward in the last decade (Fig. 31), warmer ocean temperatures have been observed on the northeast shelf and a higher proportion of Warm Slope Water has been present in the Northeast Channel.

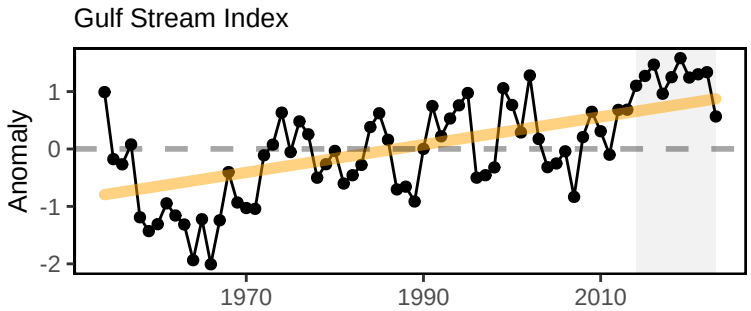


Figure 31: Index representing changes in the location of the Gulf Stream north wall (black). Positive values represent a more northerly Gulf Stream position, with increasing trend (orange).

Changes in ocean temperature and circulation alter habitat features such as the seasonal cold pool, a band of relatively cold near-bottom water from spring to fall over the northern MAB. The cold pool represents essential fish spawning and nursery habitat, and affects fish distribution and behavior. The cold pool has been getting warmer and smaller over time (Fig. 32). The spatial extent (or area) of the seasonal cold pool is decreasing over time, yet the interannual variability of cold pool area has increased.

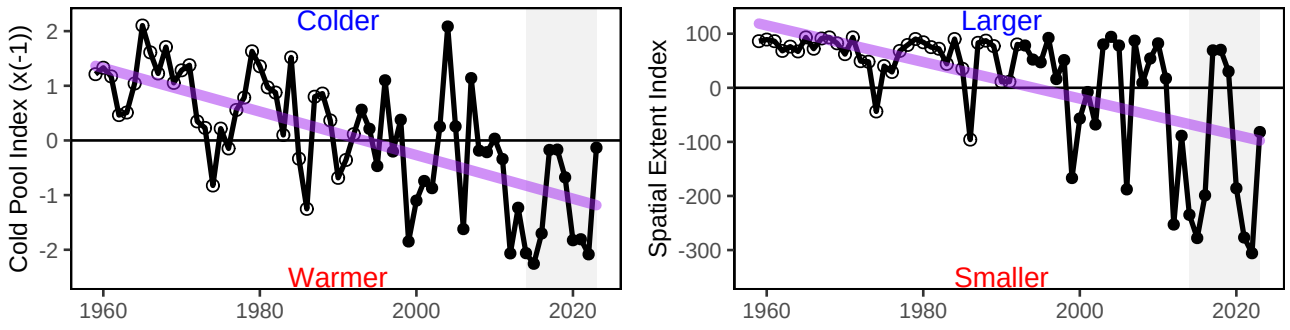


Figure 32: Seasonal cold pool mean temperature (left) and spatial extent index (right), based on bias-corrected ROMS-NWA (open circles) and GLORYS (closed circles), with declining trends (purple).

Future Considerations Distribution shifts caused by changes in thermal habitat are likely to continue as long as long-term temperature trends persist. Near-term oceanographic forecasts are currently in development and may inform how future warming impacts species distributions.

Distribution patterns associated with climate-driven changes in ocean circulation are also unlikely to be reversed to historical ranges in the short term. Increased oceanographic variability needs to be captured by regional ocean models and linked to species distribution processes to better understand potential future distributions. Species with high mobility or short lifespans react differently from immobile or long lived species.

Adapting management to changing stock distributions and dynamic ocean processes will require continued monitoring of populations in space and evaluating management measures against a range of possible future spatial distributions. Processes like the East Coast Climate Scenario Planning can help coordinate management.

Risks to Seasonal Management

The effectiveness of seasonal management actions (fishing seasons or area opening/closing) depends on a proper alignment with the seasonal life cycle events (phenology) of fish stocks (e.g. migration timing and spawning). Changes in the timing of these biological cycles can reduce the effectiveness of management measures if not accounted for. The timing of seasonal patterns can also change the interactions between fisheries and non-target species thus influencing the amount of bycatch and the availability of species to surveys.

Indicators: Timing shifts Spawning timing is shifting earlier for multiple stocks, including haddock and yellowtail flounder. Spawning of both haddock stocks occurred earlier in the year, as indicated by more resting (post-spawning) stage fish in the 2010s as compared to earlier in the time series (Fig. 33). The northern (CC/GOM) stock shows earlier active spawning in recent years with a decline in pre-spawning resting females.The recent increase in resting females in the southern (SNE) stock also indicates a shift to earlier spawning (i.e. more post-spawn fish). Yellowtail flounder spawning is related to bottom temperature, week of year, and decade sampled for each of the three stocks.

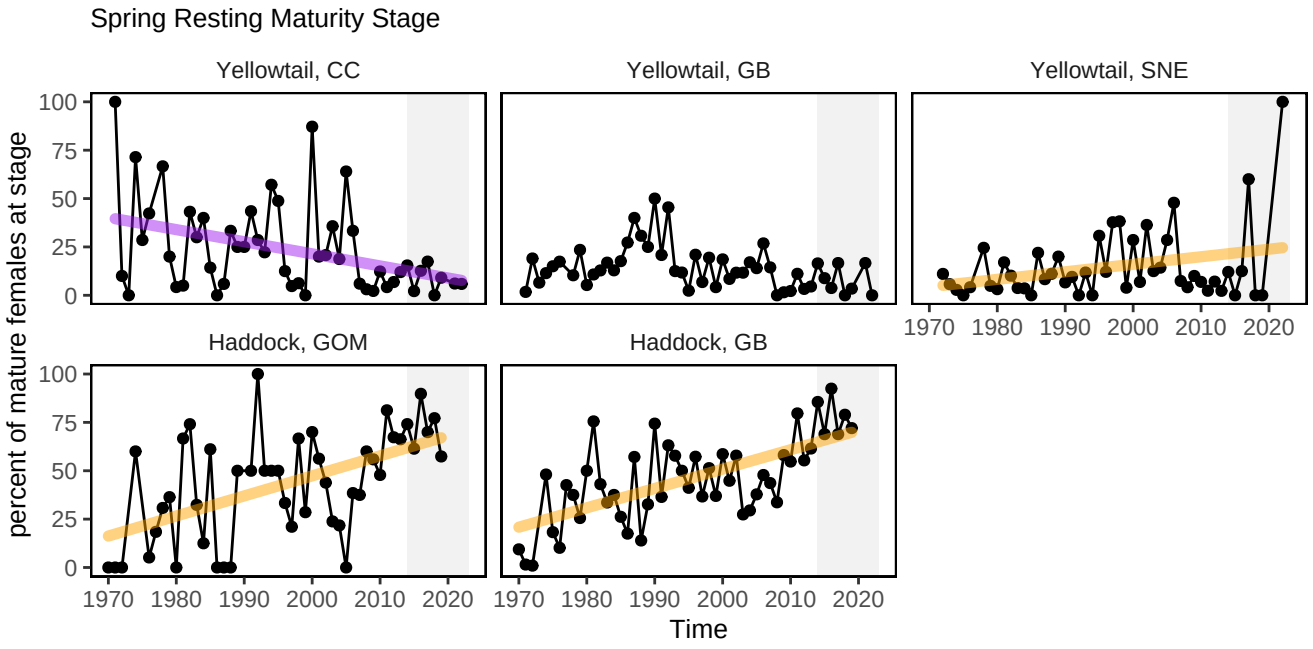


Figure 33: Percent resting stage (non-spawning) mature female fish (black) with significant increases (orange) and decreases (purple) from two haddock and three yellowtail flounder stocks: CC = Cape Cod Gulf of Maine, GOM = Gulf of Maine, GB = Georges Bank, SNE = Southern New England.

Migration timing of some tuna and large whale migrations has changed. For example, tuna were caught in recreational fisheries 50 days earlier in the year in 2019 compared to 2002. In Cape Cod Bay, peak spring habitat use by right and humpback whales has shifted 18-19 days later over time.

Understanding whether seasonal patterns are changing for stocks requires regular observations throughout the year. Despite the importance of understanding seasonal patterns, we have few indicators that directly assess timing shifts of species. We plan on incorporating more indicators of timing shifts and phenology in future reports.

Drivers: The drivers of timing shifts in managed stocks are generally coupled to shifts in environmental or biological conditions, since these can result in changes in habitat quality or food availability within the year. Changes in the timing of fall phytoplankton blooms and seasonal shifts in zooplankton communities are thought to be critical indicators of changes in seasonal food availability to stocks.

Along with the overall warming trends in the Mid Atlantic, ocean summer conditions have been lasting longer, as shown by the later transition from warm stratified summer conditions to well mixed cool fall conditions (Fig. 34). Changes in the broad seasonal cycles of their environment can lead to changes in species biological processes (migrations, spawning, etc.) that are triggered by seasonal events.

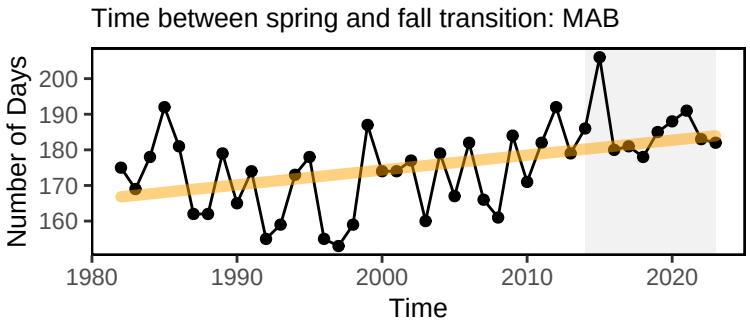


Figure 34: Ocean summer length in the MAB: the annual total number of days between the spring thermal transition date and the fall thermal transition date (black), with an increasing trend (orange).

The cold pool is a seasonal feature within the MAB that creates seasonally suitable habitat for many species. In 8 of the past 10 years, cold pool persistence has been well below average, so this habitat was available for a shorter portion of the year (Fig. 35). A change in the timing of the cold pool may impact the recruitment of species that depend on it for juvenile habitat, such as yellowtail flounder.

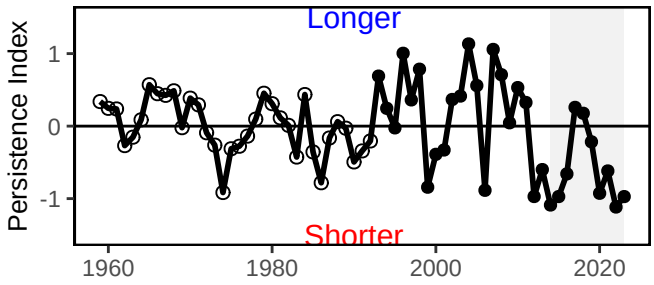


Figure 35: Cold pool persistence index based on bias-corrected ROMS-NWA (open circles) and GLORYS (closed circles).

Future Considerations For stocks reliant on environmental processes to dictate the timing of their behavior (e.g. phytoplankton bloom timing, thermal transition, or the duration of the cold pool), it is possible that some changes are episodic and have interannual variability, while other effects on timing can change on scales of years to decades. However, other species may rely on the general seasonal succession of their environment, which exhibits long-term trends unlikely to reverse in coming years. For those species, timing shifts in migration or spawning may continue. Management actions that rely on effective alignment of fisheries availability and biological processes should continue to evaluate whether prior assumptions on seasonal timings still hold, and new indicators should be developed to monitor timing shifts for stocks.

Risks to Quota Setting/Rebuilding

The efficacy of short-term stock projections and rebuilding plans rely on an accurate understanding of processes affecting stock growth, reproduction, and natural mortality. These biological processes are often driven by underlying environmental change. When observed environmental change occurs, there is a risk that established stock-level biological reference points may no longer reflect the current population.

Indicators: Fish productivity and condition shifts Indicators of fish productivity are derived from observations (surveys) or models (stock assessments). Fish productivity has been declining in the Mid-Atlantic since the early 2000s, as described by the small-fish-per-large-fish anomaly indicator (derived from NEFSC bottom trawl survey) (Fig. 36). This decline in fish productivity is also shown by a similar analysis based on stock assessment model outputs (recruitment per spawning stock biomass anomaly).

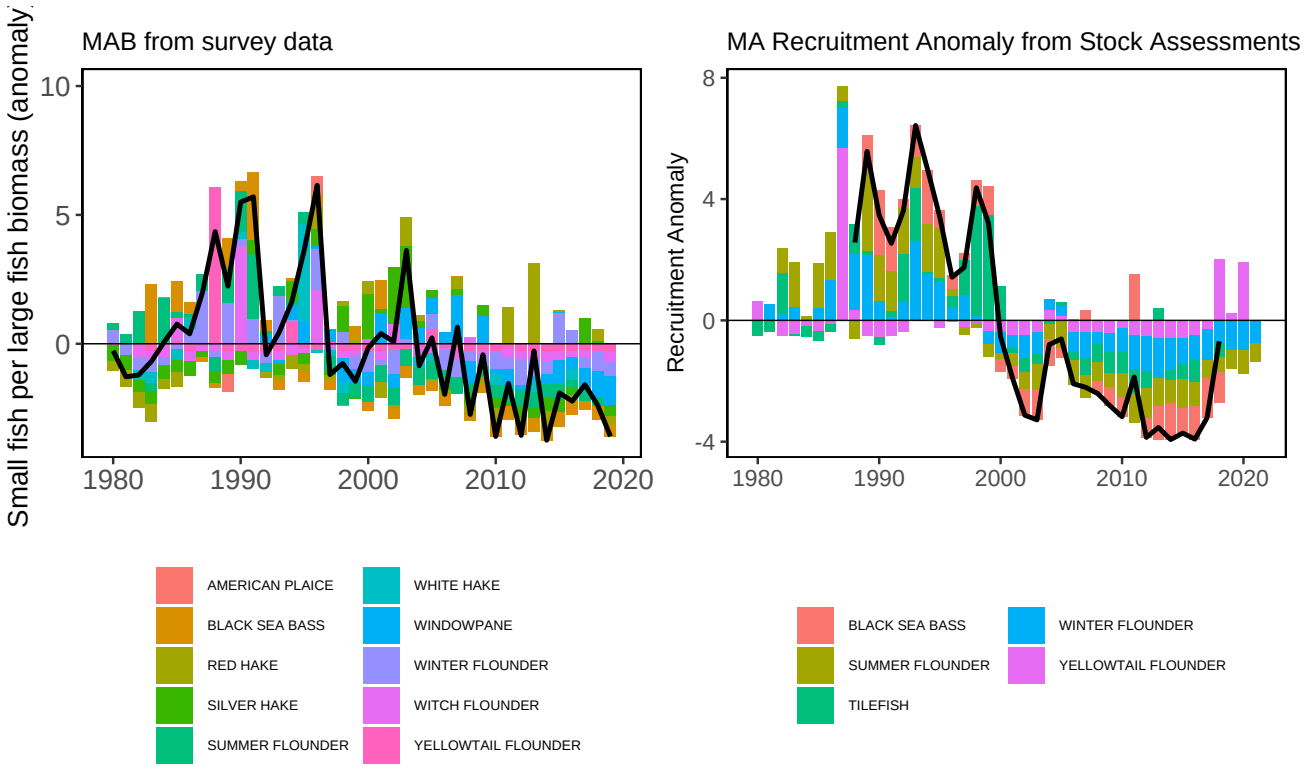


Figure 36: Fish productivity measures. Left: Small fish per large fish survey biomass anomaly in the Mid-Atlantic Bight. Right: assessment recruitment per spawning stock biomass anomaly for stocks mainly in the Mid-Atlantic. The summed anomaly across species is shown by the black line, drawn across all years with the same number of stocks analyzed.

The health of individual fish (i.e. fish condition) can contribute to population productivity through improved growth, reproduction and survival. Fish condition in the MAB was generally good prior to 2000, poor from 2001-2010 (concurrent with declines in productivity, Fig. 36), and a mix of good and poor since 2011. In 2023, condition was mixed, with general improvement since a relatively low condition year in 2021 (Fig. 37). Preliminary analyses show that changes in temperature, zooplankton, fishing pressure, and population size influence the condition of different fish species.

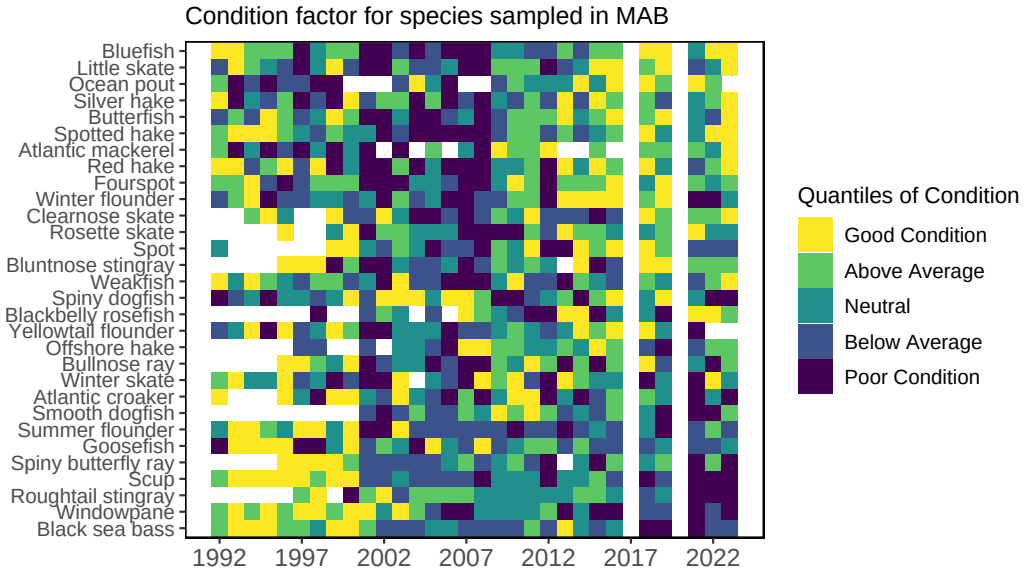


Figure 37: Condition factor for fish species in the MAB based on fall NEFSC bottom trawl survey data. MAB data are missing for 2017 due to survey delays, and no survey was conducted in 2020.

Drivers: Fish productivity and condition are affected by increasing metabolic demands from increasing temperature, combined with changes in the availability and quality of prey. Long-term environmental trends and episodic extreme temperatures, ocean acidification, and low oxygen events represent multiple stressors that can affect growth rates, reproductive success, recruitment, and cause mortality.

Biological Drivers: Forage quality and abundance The amount of forage fish available in the ecosystem combined with the energy content of the forage species determines the amount of energy potentially available to predators in the ecosystem. Changes in the forage base can drive managed and protected species production.

The energy content of juvenile and adult forage fish as prey is related to forage fish growth and reproductive cycles, as well as environmental conditions. The energy content of Atlantic herring from the NEFSC trawl surveys has increased recently (Fig. 38) but is still well below that observed in the 1980s and 1990s. Silver hake, longfin squid (Loligo in figure) and shortfin squid (Illex in figure) remain lower than previous estimates.

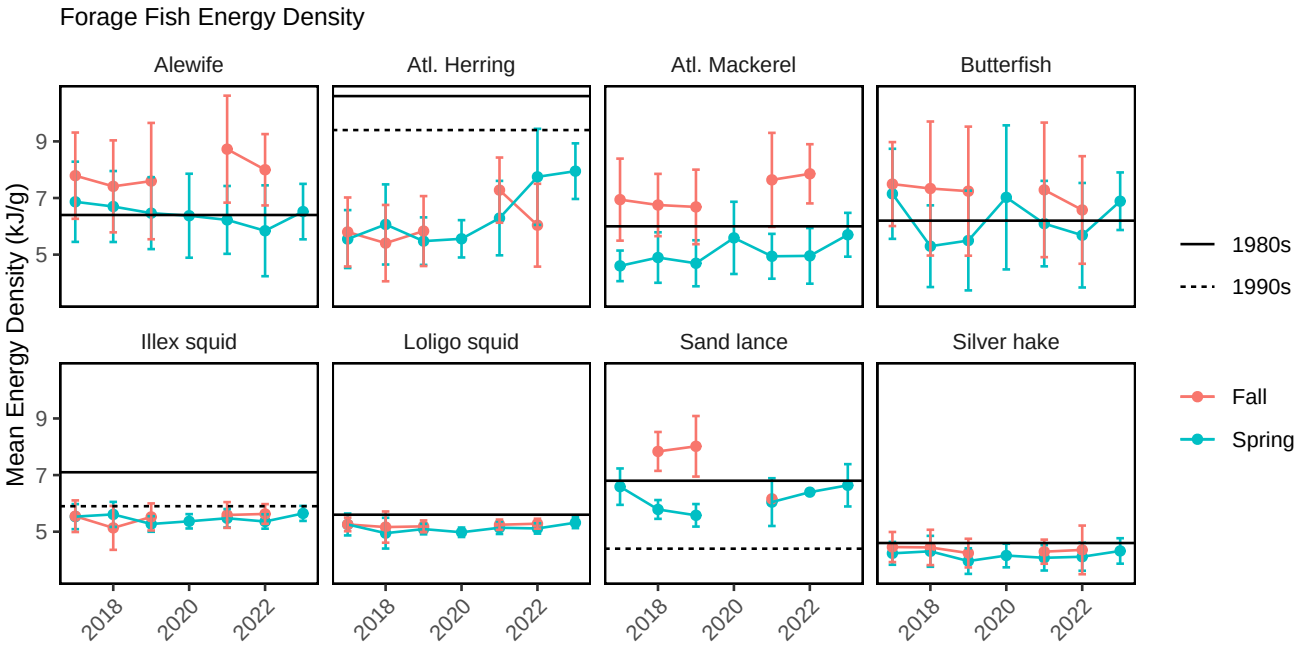


Figure 38: Forage fish energy density mean and standard deviation by season and year, compared with 1980s (solid line) and 1990s (dashed line) values.

Changes in the overall abundance of forage fish can influence managed species productivity as it relates to changes in food availability. A spatially-explicit forage index for the Mid-Atlantic shows a long term declining trend in fall, with higher forage biomass in fall than spring (Fig. 39). Forage biomass was highest during fall in the early-1980s.

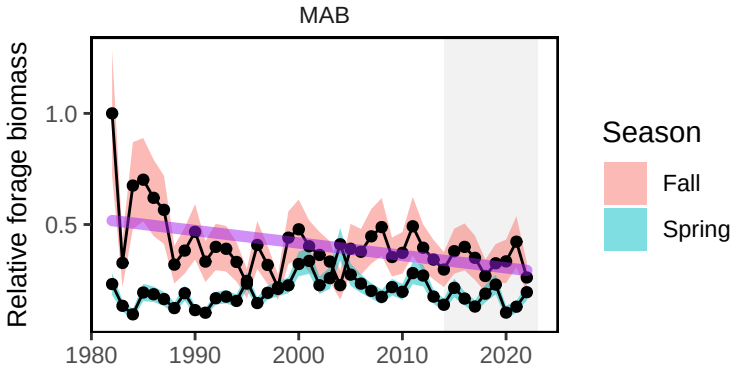


Figure 39: Forage fish index in the MAB for spring (blue) and fall (red) surveys, with a decline (purple) in fall. Index values are relative to the maximum observation within a region across surveys.

Biological Drivers: Lower trophic levels Phytoplankton are the foundation of the food web and are the primary food source for zooplankton and filter feeders such as shellfish. Numerous environmental and oceanographic factors affect the abundance, size composition, spatial distribution, and productivity of phytoplankton. While changes in fish productivity (including forage) could result from changing primary productivity, total primary production in the Mid Atlantic has no clear trend (Fig. 16).

Zooplankton communities in the Mid-Atlantic have increasing trends for smaller bodied copepods and gelatinous species (Cnidaria; Fig. 40). Smaller bodied copepods and gelatinous species are less energy-rich than Eupausiids (krill) or the larger-bodied copepod *Calanus finmarchicus*. A changing mix of zooplankton prey can impact forage fish energy content and abundance, as well as the prey field of filter feeding whales.

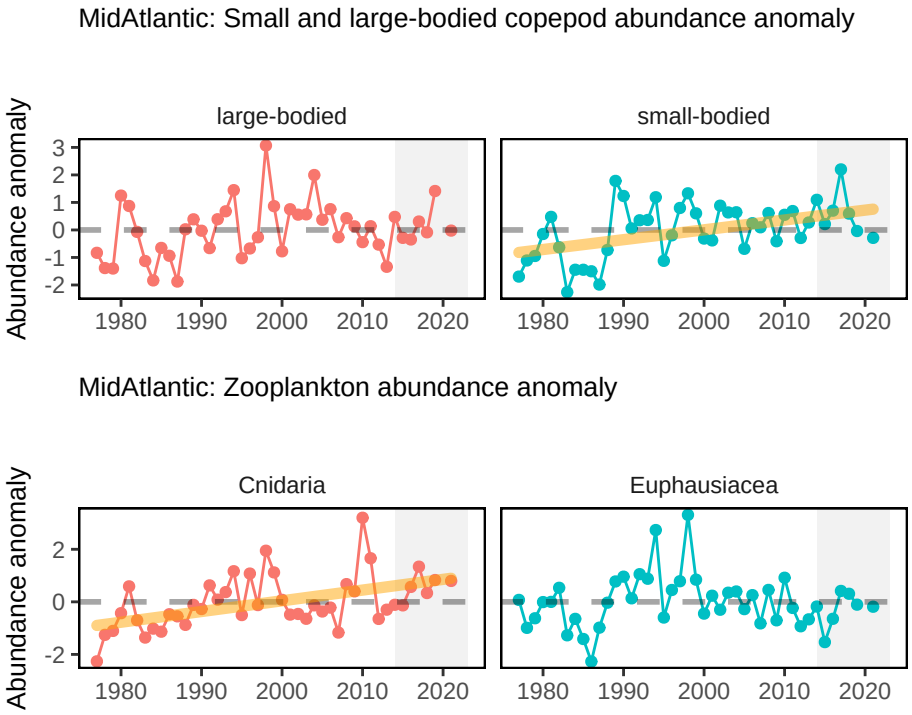


Figure 40: Changes in zooplankton abundance in the MAB for large (top left) and small (top right) copepods, Cnidarians (bottom left), and Euphausiids (bottom right), with significant increases (orange) in small copeods and Cnidarians.

Environmental Drivers Fish production can also be directly related to the prevailing environmental conditions by altering metabolic processes (growth) and reproduction. Many species possess thermal tolerances and can experience stressful or lethal conditions if temperatures exceed certain levels. Extreme temperatures at both the surface and bottom can exceed thermal tolerance limits for some fish. For example, 2015 had the warmest summer and fall bottom temperatures in the Mid-Atlantic. A large proportion of the region had bottom temperatures above the 15℃ thermal tolerance for most groundfish, with some days exceeding the 24℃ potential mortality limit (Fig. 41). Many Mid-Atlantic species have different thermal tolerance limits from groundfish, and we will work to include those next year.

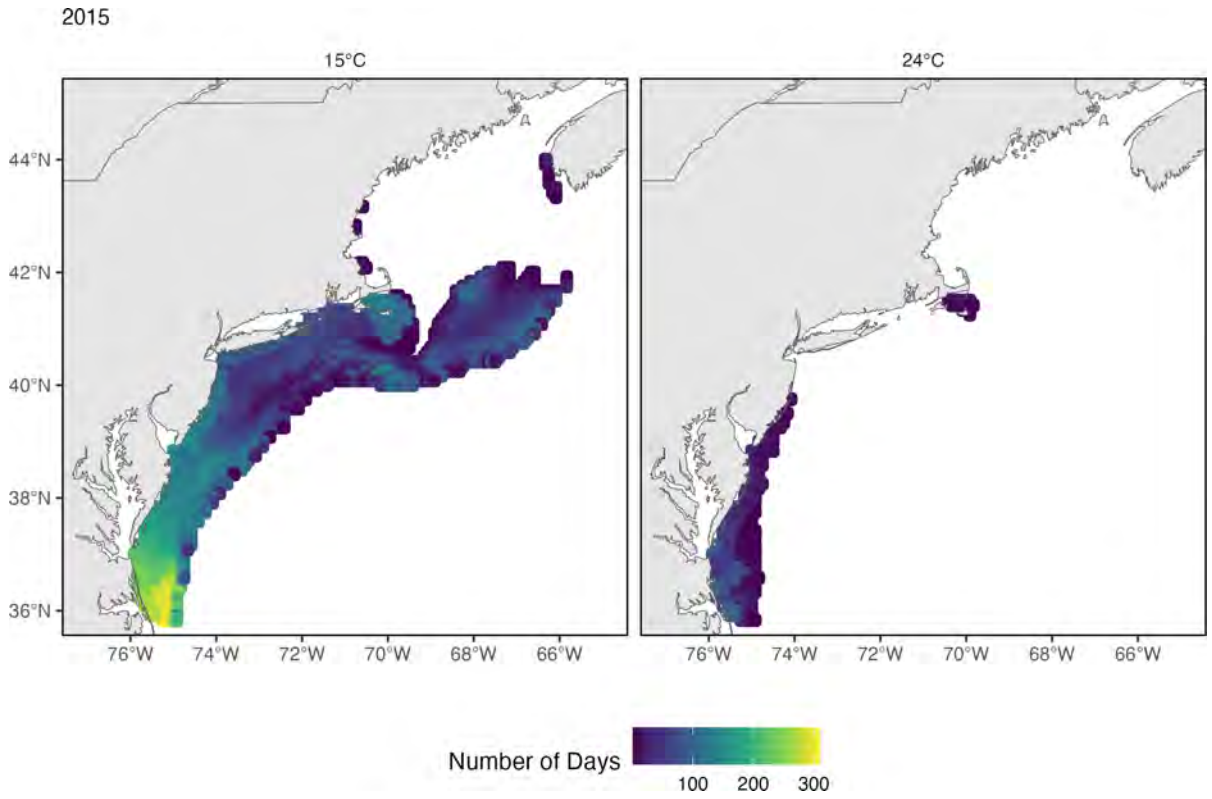


Figure 41: The number of days in 2015 where bottom temperature exceeds 15℃ (left) and 24℃ (right) based on the GLORYS 1/12 degree grid.

Ocean acidification (OA) risks vary among species and include reduced survival, growth, reproduction, and productivity, where high OA risk indicates potential negative effects to species. High OA risk conditions were observed for Atlantic sea scallop and longfin squid in Long Island Sound and the nearshore and mid shelf regions of the New Jersey shelf during summer of 2016, 2018, 2019, and 2023 (Fig. 42).

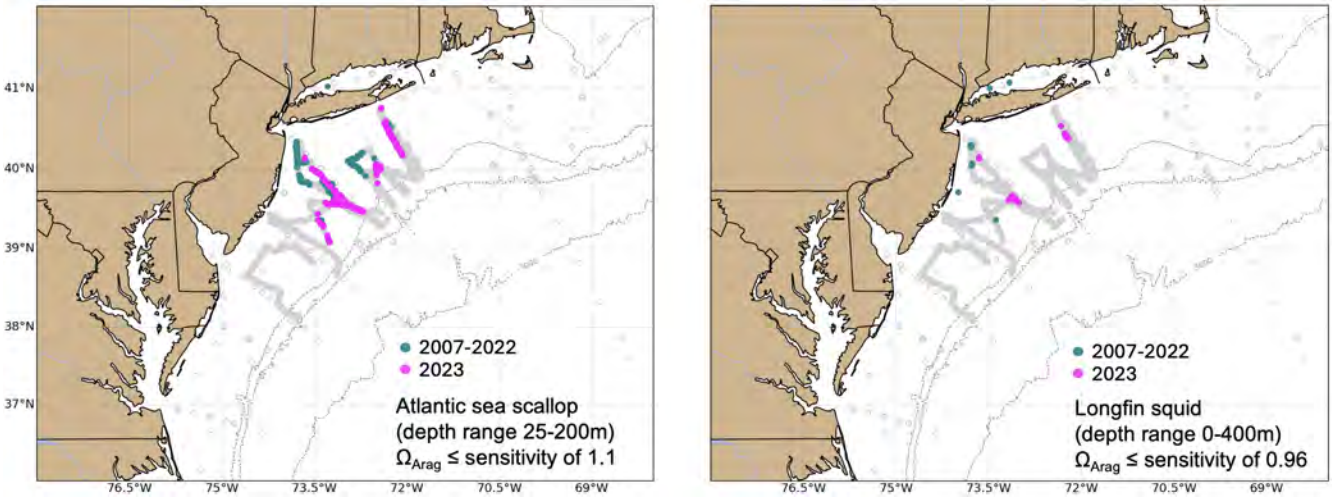


Figure 42: Locations where bottom aragonite saturation state (Ω_{Arag}; summer only: June-August) were at or below the laboratory-derived sensitivity level for Atlantic sea scallop (left panel) and longfin squid (right panel) for the time periods 2007-2022 (dark cyan) and 2023 only (magenta). Gray circles indicate locations where bottom Ω_{Arag} values were above the species specific sensitivity values..

Biological and oceanographic processes can affect the amount of oxygen present in the water column. During low oxygen (hypoxic) events, species growth is negatively affected, and very low oxygen can result in mortality. The duration and extent of hypoxic events is being monitored, but long-term shelf-wide observations are not yet available. However, hypoxic events were detected off the coast of New Jersey in 2023 and were potentially responsible for fish, lobster, and crab mortalities.

Drivers: Predation The abundance and distribution of predators can affect both the productivity and mortality rates on managed stocks. Predators can consume managed species or compete for the same resources, resulting in increased natural mortality or decreased productivity. The northeast shift in whales and dolphins (Fig. 28) indicates a change in the overlap between predators and prey. Since we also observe distribution shifts in managed species as well as forage species, the effect of changing predator distributions alone is difficult to quantify.

Indicators for shark populations, combined with information on gray seals (see Protected Species Implications section, above), suggests predator populations range from stable (sharks) to increasing (gray seals) in the MAB. Stock status is mixed for Atlantic Highly Migratory Species (HMS) stocks (including sharks, swordfish, billfish, and tunas) occurring throughout the Northeast U.S. shelf. While there are several HMS species considered to be overfished or that have unknown stock status, the population status for some managed Atlantic sharks and tunas is at or above the biomass target, suggesting the potential for robust predator populations among these managed species. Stable predator populations suggest stable predation pressure on managed species, but increasing predator populations may reflect increasing predation pressure.

Future Considerations

The processes that control fish productivity and mortality are dynamic, complex, and are the result of the interactions between multiple system drivers. There is a real risk that short-term predictions in assessments and rebuilding plans that assume unchanging underlying conditions will not be as effective, given the observed change documented in the prior sections in both ecological and environmental processes. Assumptions for species' growth, reproduction, and natural mortality should continue to be evaluated for individual species. With observations of system-wide productivity shifts of multiple managed stocks, more research is needed to determine whether regime shifts or ecosystem reorganization are occurring, and how this should be incorporated into management.

Other Ocean Uses: Offshore Wind

Indicators: development timeline, revenue in lease areas, coastal community vulnerability

As of January 2024, 30 offshore wind development projects are proposed for construction over the next decade in the Northeast (timelines and project data for 2024 are based on the Ocean Wind 1 Offshore Wind Farm Final Environmental Impact Statement. Volume II: Appendix F). Offshore wind areas are anticipated to cover more than 2.3 million acres by 2030 in the Greater Atlantic region (Fig. 43). All states will be able to reach their 2030 offshore wind goals with existing lease areas.

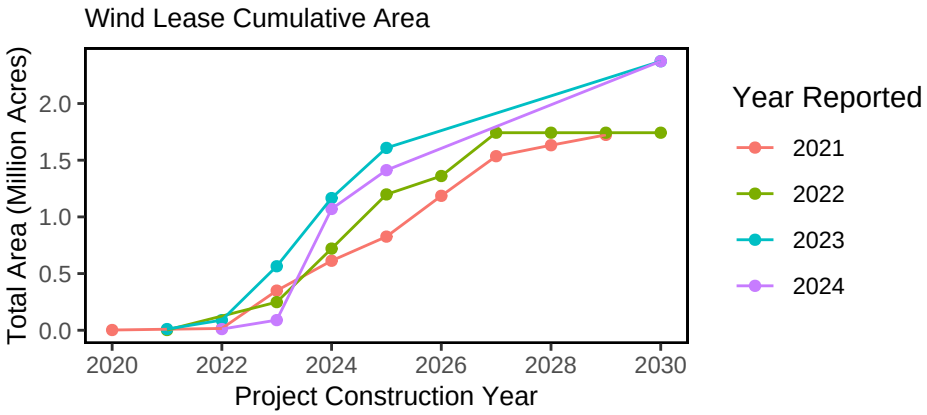
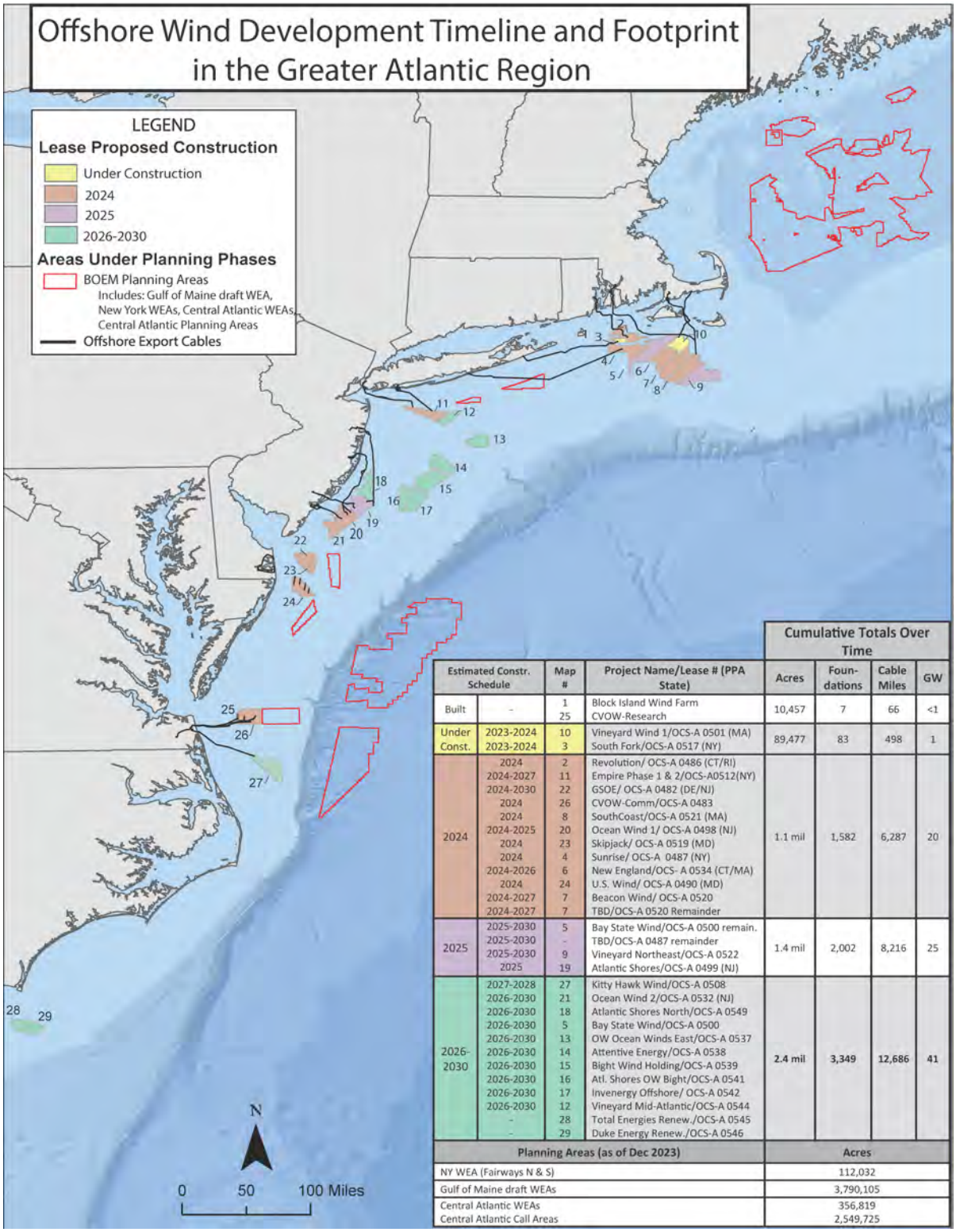


Figure 43: Total area proposed for wind develpment on the northeast shelf through 2030.

Just over 3,300 foundations and more than 12,000 miles of inter-array and offshore export cables are proposed to date (Fig. 44). Based on current timelines, the areas affected would be spread out such that it is unlikely that any one particular area would experience full development at one time. Construction of two projects in Southern New England (South Fork Wind and Vineyard Wind 1) during 2023 affected fisheries managed by the Mid-Atlantic Fishery Management Council, while construction activities began for Revolution Wind in early 2024. It is likely that construction will begin on other projects in Southern New England and possibly the New York Bight during 2024 that will further affect regional fisheries.



Estimated Constr. Schedule		Map #	Project Name/Lease # (PPA State)	Cumulative Totals Over Time: Acres	Foundations	Cable Miles	GW
Built	-	1	Block Island Wind Farm	10,457	7	66	<1
		25	CVOW-Research				
Under Const.	2023-2024	10	Vineyard Wind 1/OCS-A 0501 (MA)	89,477	83	498	1
	2023-2024	3	South Fork/OCS-A 0517 (NY)				
2024	2024	2	Revolution/ OCS-A 0486 (CT/RI)	1.1 mil	1,582	6,287	20
	2024-2027	11	Empire Phase 1 & 2/OCS-A0512(NY)				
	2024-2030	22	GSOE/ OCS-A 0482 (DE/NJ)				
	2024	26	CVOW-Comm/OCS-A 0483				
	2024	8	SouthCoast/OCS-A 0521 (MA)				
	2024-2025	20	Ocean Wind 1/ OCS-A 0498 (NJ)				
	2024	23	Skipjack/ OCS-A 0519 (MD)				
	2024	4	Sunrise/ OCS-A 0487 (NY)				
	2024-2026	6	New England/OCS- A 0534 (CT/MA)				
	2024	24	U.S. Wind/ OCS-A 0490 (MD)				
	2024-2027	7	Beacon Wind/ OCS-A 0520				
	2024-2027	7	TBD/OCS-A 0520 Remainder				
2025	2025-2030	5	Bay State Wind/OCS-A 0500 remain.	1.4 mil	2,002	8,216	25
	2025-2030	-	TBD/OCS-A 0487 remainder				
	2025-2030	9	Vineyard Northeast/OCS-A 0522				
	2025	19	Atlantic Shores/OCS-A 0499 (NJ)				
2026-2030	2027-2028	27	Kitty Hawk Wind/OCS-A 0508	**2.4 mil**	**3,349**	**12,686**	**41**
	2026-2030	21	Ocean Wind 2/OCS-A 0532 (NJ)				
	2026-2030	18	Atlantic Shores North/OCS-A 0549				
	2026-2030	5	Bay State Wind/OCS-A 0500				
	2026-2030	13	OW Ocean Winds East/OCS-A 0537				
	2026-2030	14	Attentive Energy/OCS-A 0538				
	2026-2030	15	Bight Wind Holding/OCS-A 0539				
	2026-2030	16	Atl. Shores OW Bight/OCS-A 0541				
	2026-2030	17	Invenergy Offshore/ OCS-A 0542				
	2026-2030	12	Vineyard Mid-Atlantic/OCS-A 0544				
	-	28	Total Energies Renew./OCS-A 0545				
	-	29	Duke Energy Renew./OCS-A 0546				

Planning Areas (as of Dec 2023)	Acres
NY WEA (Fairways N & S)	112,032
Gulf of Maine draft WEAs	3,790,105
Central Atlantic WEAs	356,819
Central Atlantic Call Areas	2,549,725

Figure 44: All Northeast Project areas by year construction ends (each project has 2 year construction period).

Based on federal vessel logbook data, commercial fishery revenue from trips in the current offshore wind lease areas, including the newly designated lease areas in the Central Atlantic, have varied annually from 2008-2022, with less

than $1 million in maximum annual revenue overlapping with these areas for most fisheries with the exception of the surfclam, monkfish, and longfin squid fisheries. Some fisheries see periodic spikes in revenue overlap with wind energy lease areas, including the surfclam ($6.6 million), longfin squid ($4.7 million), monkfish ($4.3 million), and summer flounder ($1.3 million) fisheries (Fig. 45).

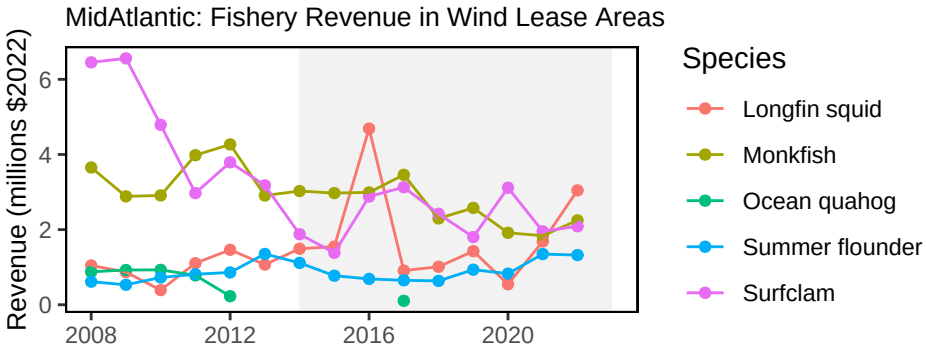


Figure 45: Fishery revenue in wind energy lease areas in the Mid-Atlantic.

Of MAFMC managed fisheries, the monkfish fishery would be the fishery most affected by offshore wind development, with a maximum of 20% of annual regional fishery revenue occurring within existing and proposed wind lease areas and the Gulf of Maine Draft Wind Energy Area during 2008-2022 (see Table 3). Future fishery resource overlap with wind leases, especially surfclams and ocean quahogs, may change due to species distribution shifts attributable to climate change and recruitment and larval dispersion pattern changes caused by hydrodynamic flow disruptions from turbine foundations, which could also affect fishery landings/revenue.

Table 3: Mid-Atlantic managed species Landings and Revenue from Wind Energy Areas.

NEFMC, MAFMC, and ASMFC Managed Species	Maximum Percent Total Annual Regional Species Landings	Maximum Percent Total Annual Regional Species Revenue
Monkfish	20	20
Atlantic surfclam	18	17
Blueline tilefish	13	16
Black sea bass	10	10
Scup	8	9
Atlantic mackerel	8	8
Longfin squid	8	8
Atlantic chub mackerel	6	6
Golden tilefish	6	6
Butterfish	6	5
Summer flounder	5	5
Bluefish	4	4
Spiny dogfish	4	4
Ocean quahog	3	3
Illex squid	2	2

Proposed wind development areas interact with the region's federal scientific surveys. Scientific surveys are impacted by offshore wind in four ways:
1. Exclusion of NOAA Fisheries' sampling platforms from the wind development area due to operational and safety limitations.
2. Impacts on the random-stratified statistical design that is the basis for scientific assessments, advice, and analyses.
3. Alteration of benthic and pelagic habitats, and airspace in and around the wind energy development, requiring

new designs and methods to sample new habitats.
4. Reduced sampling productivity through navigation impacts of wind energy infrastructure on aerial and vessel survey operations.

Increased vessel transit between stations may decrease data collections that are already limited by annual days-at-sea day allocations. The total survey area overlap ranges from 1-70% for all Greater Atlantic federal surveys. The Gulf of Maine Cooperative Research Bottom Longline Survey (41%) and the Shrimp Survey (70%) have the largest percent overlap with the draft Gulf of Maine Wind Energy Areas. The remaining surveys range from 1-16% overlap. Individual survey strata have significant interaction with wind areas, including the sea scallop survey (up to 96% of individual strata) and the bottom trawl survey (up to 60% strata overlap). Additionally, up to 50% of the southern New England North Atlantic right whale survey's area overlaps with proposed project areas and a region-wide survey mitigation program is underway

Equity and environmental justice (EJ) are priority concerns with offshore wind development and fisheries impacts in the Northeast, and the impacts of offshore wind development are expected to differentially impact specific coastal communities (Fig. 46). Additionally, impacts of offshore wind development may unevenly affect individual operators, with some permit holders deriving a much higher proportion of revenue from wind areas than the port-based mean.

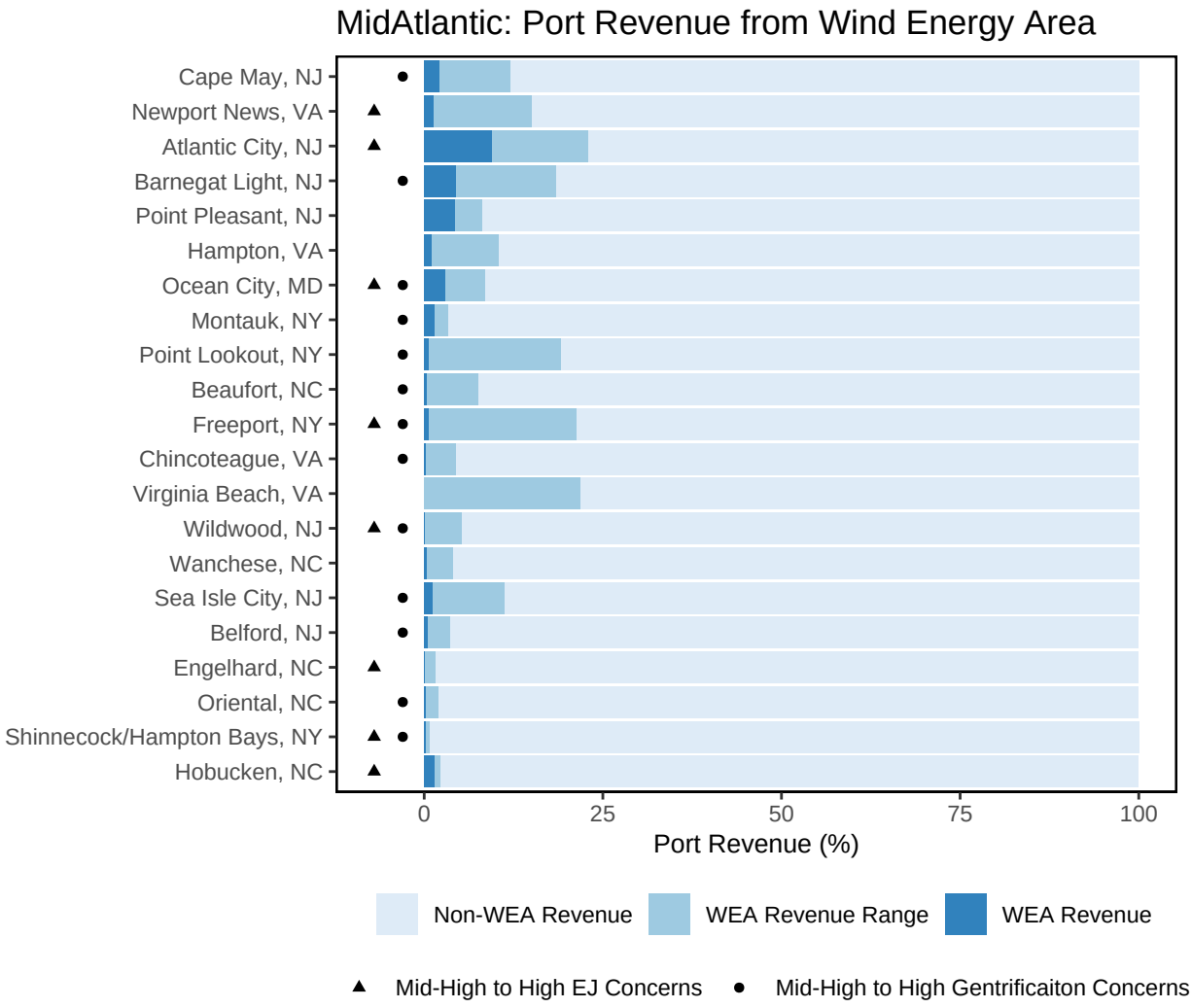


Figure 46: Percent of Mid-Atlantic port revenue from Wind Energy Areas (WEA) in descending order from most to least port revenue from WEA. EJ = Environmental Justice.

For example, Atlantic City, NJ had the highest potential revenue loss (minimum of 10% and maximum of 23%) from potential wind development areas based on 2008-2022 total port fisheries revenue. BOEM reports that cumulative offshore wind development (if all proposed projects are developed) could have moderate impacts on low-income members of communities with environmental justice concerns who work in the commercial fishing and for-hire fishing industry due to disruptions to fish populations, restrictions on navigation and increased vessel traffic, as well as existing vulnerabilities of low-income workers to economic impacts.

Some ports in New England land Mid-Atlantic managed species from wind areas as well. For the maximum percent value reported in each New England port, the majority (at least 50% based on both value and pounds) of those landings were Mid-Atlantic managed species within wind areas for Barnstable, MA, and Point Judith, RI.

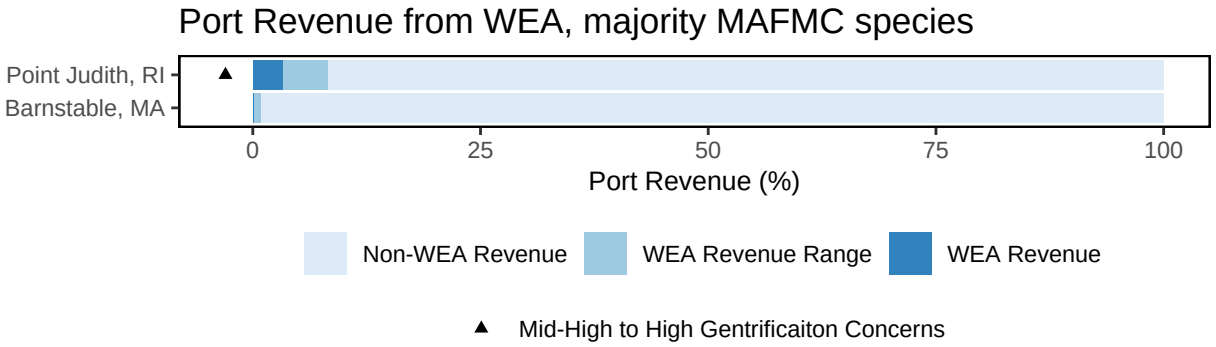


Figure 47: Percent of New England port revenue with majority MAFMC landings from Wind Energy Areas (WEA) in descending order from most to least port revenue from WEA. EJ = Environmental Justice.

Top fishing communities with environmental justice concerns (i.e., Atlantic City, NJ, Newport News, VA, Hobucken and Beaufort, NC) should be considered in decision making to reduce the social and economic impacts and aid in the resilience and adaptive capacity of underserved communities. These are communities where we need to provide further resources to reach underserved and underrepresented groups and create opportunities for and directly involve these groups in the decision-making process.

Implications

Current plans for rapid buildout of offshore wind in a patchwork of areas spreads the impacts differentially throughout the region (Fig. 44). Up to 17% of maximum annual fisheries revenue for major Mid-Atlantic commercial species in lease areas and draft call areas could be forgone or reduced and associated effort displaced if all sites are developed. Displaced fishing effort can alter historic fishing area, timing, and method patterns, which can in turn change habitat, species (managed and protected), and fleet interactions. Several factors, including fishery regulations, fishery availability, and user conflicts affect where, when, and how fishing effort may be displaced, along with impacts to and responses of affected fish species.

Planned development overlaps NARW mother and calf migration corridors and a significant foraging habitat that is used throughout the year (Fig. 48). Turbine presence and extraction of energy from the system could alter local oceanography and may affect right whale prey availability. For example, persistent foraging hotspots of right whales and seabirds overlap on Nantucket Shoals, where unique hydrography aggregates enhanced prey densities. Wind leases (OCS-A 0521 and OCS-A 0522) currently intersect these hotspots on the southwestern corner of Nantucket Shoals and a prominent tidal front associated with invertebrate prey swarms important to seabirds and possibly right whales. Proposed wind development areas also bring increased vessel strike risk from construction and operation vessels. In addition, there are a number of potential impacts to whales from pile driving and operational noise such as displacement, increased levels of communication masking, and elevated stress hormones.

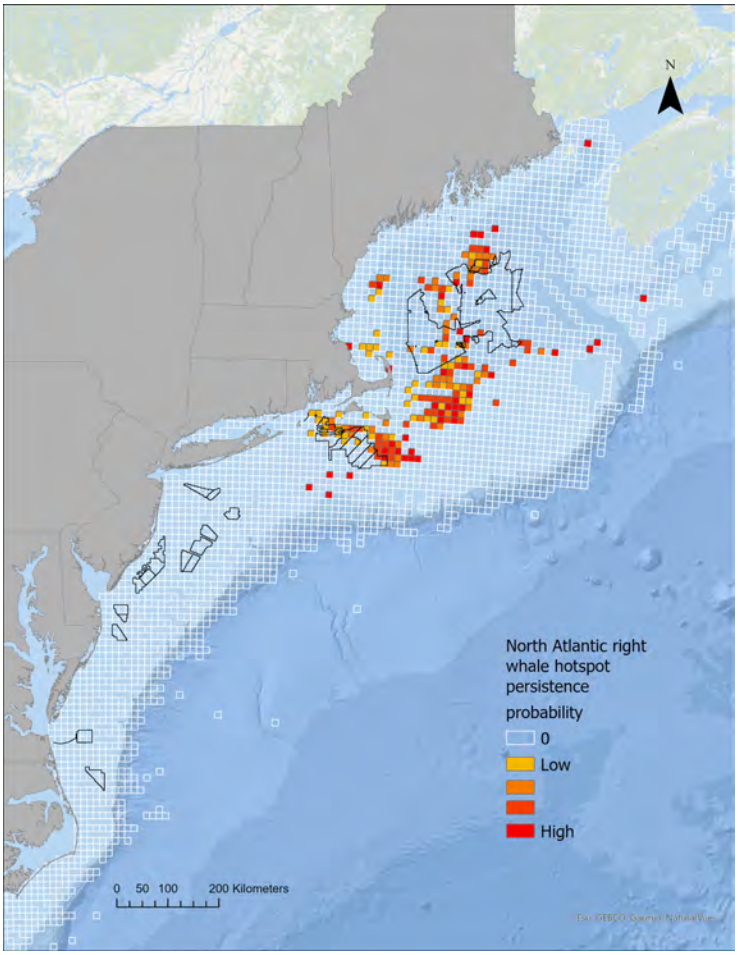


Figure 48: Northern Right Whale persistent hotspots (red shading) and Wind Energy Areas (black outlines).

Scientific data collection surveys for ocean and ecosystem conditions, fish, and protected species will be altered, potentially increasing uncertainty for stock assessments and associated management decision making.

The increase of offshore wind development can have both positive (e.g., employment opportunities) and negative (e.g., space-use conflicts) effects. Continued increase in coastal development and gentrification pressure has resulted in loss of fishing infrastructure space within ports. Understanding these existing pressures can allow for avoiding and mitigating negative impacts to our shore support industry and communities dependent on fishing. Some of the communities with the highest fisheries revenue overlap with offshore wind development areas that are also vulnerable to gentrification pressure are Point Pleasant and Atlantic City, NJ, Ocean City, MD, and Beaufort, NC.

2023 Highlights

This new section is common to the Mid-Atlantic and New England reports. Multiple anomalous conditions and extreme events were observed in 2023 that could have brief local effects and/or widespread long-term ecosystem, fishery and management implications. This section intends to provide a record of these observations, the implications they may have for other ecosystem processes, and a reflection on how they fit into our understanding of the ecosystem. Many of these observations are being actively studied but should be noted and considered in future analyses and management decisions.

Globally, 2023 was the warmest year on record with record high sea surface temperatures in the North Atlantic. In contrast, Northeast U.S. shelf surface temperatures were more variable, with near record highs in winter and near average conditions in other seasons.

Regional/Coastal phenomena There was a documented die-off of scallops in the Mid-Atlantic Elephant Trunk regions between the 2022 and 2023 surveys. In 2022, Elephant Trunk experienced stressful temperatures for scallops (17 - 19 ℃) for an average of 30 days (Fig. 49), but ongoing research is being conducted to identify contributing factors. A fish and shellfish mortality event was observed in coastal New Jersey linked to hypoxia and ocean acidification (Fig. 50).

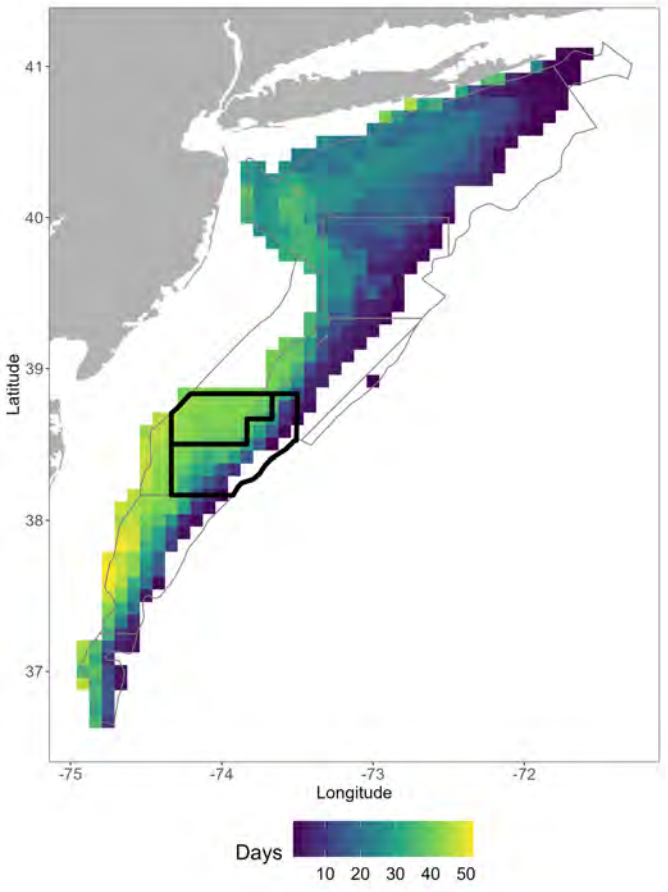


Figure 49: The number of days where bottom temperature was between 17 and 19 °C in each GLORYS grid cell for 2022. The gray lines show the sea scallop estimation areas, with the Elephant Trunk region highlighted in black lines.

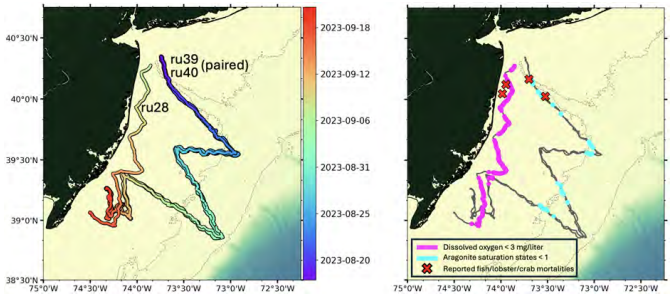


Figure 50: Mission tracks of three gliders (left) deployed off the coast of New Jersey in August and September of 2023. Locations of hypoxic levels of dissolved oxygen (magenta; < 3 mg/liter) and low aragonite saturation state (cyan; < 1) measured along the glider mission tracks and locations of reported fish, lobster, and/or crab mortalities (red X).

Summer bottom temperatures in the Gulf of Maine were the warmest on record (since 1959) resulting in the second

largest bottom marine heatwave. The heatwave started in February, peaked in May and likely continued beyond August (pending data update). 2023 bottom temperature exceeded the 15 ℃ threshold for up to 59 days along the shelf break.

A wide-spread, long-duration phytoplankton bloom of the dinoflagellate *Tripos muelleri* was observed in the GOM and generated chlorophyll concentrations up to ten times greater than average (a record high since 1998) from March to August (Figs. 51, 52). The bloom severely reduced water clarity, impacting harpoon fishing and likely affecting visual predators. Despite *Tripos* being a similar size to typical large phytoplankton (diatoms), this extra production was not grazed nor did it sink to the bottom. The specific drivers of the bloom and implications to the food web are still under investigation.

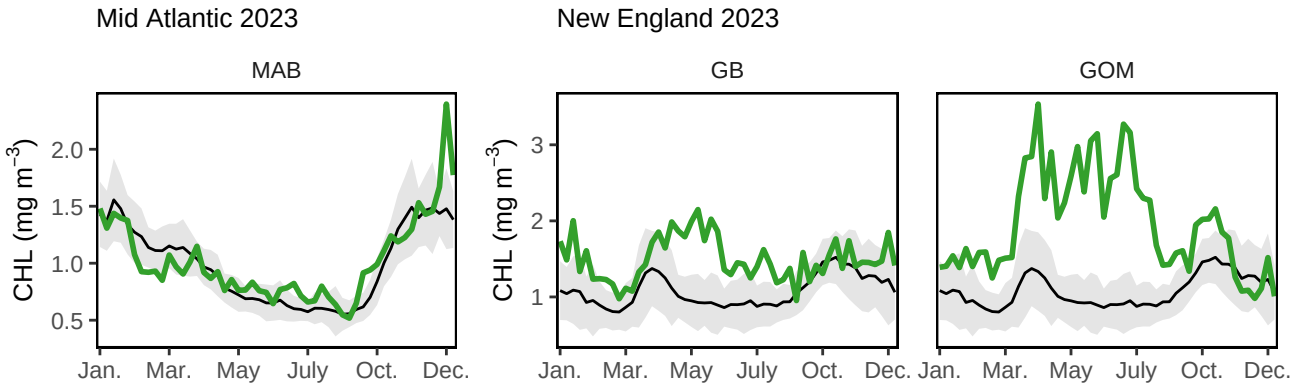


Figure 51: 2023 median weekly chlorophyll concentrations (green line) with standard deviation 1998-2023 (gray shading).

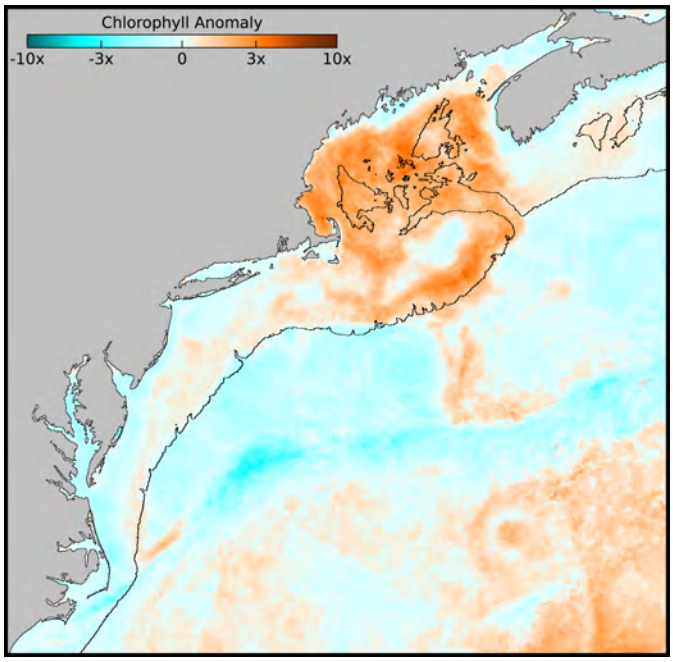


Figure 52: June 2023 chlorophyll anomaly shown as the ratio of the June 2023 average compared to climatological (1998-2023) June average. The black line depicts the 100 m isobath.

In Chesapeake Bay, hypoxia conditions were the lowest on record (since 1995), creating more suitable habitat for

multiple fin fish and benthic species. Cooler Chesapeake Bay water temperatures paired with low hypoxia in the summer suggest conditions that season were favorable for striped bass. Cooler summer temperatures also support juvenile summer flounder growth. However, warmer winter and spring water temperatures in the Chesapeake Bay, along with other environmental factors (such as low flow), may have played a role in low production of juvenile striped bass in 2023. Higher-than-average salinity across the Bay was likely driven by low precipitation and increased the area of available habitat for species such as croaker, spot, menhaden, and red drum, while restricting habitat area for invasive blue catfish.

Shelf-wide Phenomena The Gulf Stream was highly variable in 2023, with northward shifts intermittently throughout the year and a more notable prolonged shift north along the continental shelf break in the southern Mid-Atlantic in the fall (Fig. 53). This shift severely constricted the Slope Sea (the waters between the Gulf Stream and continental shelf), inhibited warm core ring formation and interactions, resulted in unusually warm and salty surface waters, and strong northeastward currents in the southern Mid-Atlantic. Intermittent warm waters like this can be threats to temperature sensitive species, especially species at the southern end of their range or are not mobile (e.g. scallops), while also providing suitable habitat for more southern species.

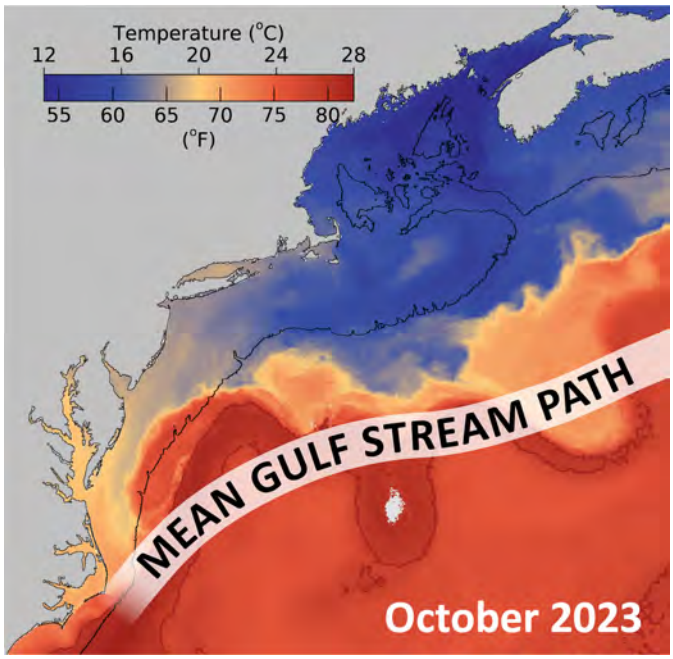


Figure 53: October 8-14, 2023 sea surface temperature average derived from the Advanced Clear Sky Processor for Ocean (ACSPO) SST data. The black line depicts the 100 m isobath and the white line is the mean path of the Gulf Stream.

While the total number of warm core rings in 2023 (18) was below the decadal average (31), there were a few notable events. A large early season ring pulled continental shelf water into the Slope Sea. Events like these can create biological hotspots, aggregating multiple species in small areas, increasing bycatch risks, and marine mammal shipstrike risks. In spring 2023, concentrations of North Atlantic right whales, humpback whales, basking sharks, and other large baleen whales were observed feeding near the edge of warm core rings near the shelf break.

Multiple fall 2023 tropical and coastal storms caused several flash flood events, above average coastal water levels, strong winds and high rainfall totals throughout the Northeast. These storms may be related to the shift from 2020-2022 La Niña conditions to strong El Niño conditions in late spring 2023. El Niño winters are associated with more frequent East Coast storms, which can result in increased risk of coastal flooding, increased freshwater runoff into the coastal ocean, and delayed spring transition from a well mixed water column to stratified. In estuaries, increased freshwater flow decreases salinity, reduces the amount of suitable habitat for juvenile marine fish, and is related to increased hypoxia (low oxygen). However, precipitation is not uniform throughout the Northeast U.S.,

and Chesapeake Bay 2023 conditions did not align with El Nino expectations. The current El Niño is expected to weaken by spring 2024.

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Document Orientation

The figure format is illustrated in Fig 54a. Trend lines are shown when slope is significantly different from 0 at the p < 0.05 level. An orange line signifies an overall positive trend, and purple signifies a negative trend. To minimize bias introduced by small sample size, no trend is fit for < 30 year time series. Dashed lines represent mean values of time series unless the indicator is an anomaly, in which case the dashed line is equal to 0. Shaded regions indicate the past ten years. If there are no new data for 2022, the shaded region will still cover this time period. The spatial scale of indicators is either coastwide, Mid-Atlantic states (New York, New Jersey, Delaware, Maryland, Virginia, North Carolina), or at the Mid-Atlantic Bight (MAB) Ecosystem Production Unit (EPU, Fig. 54b) level.

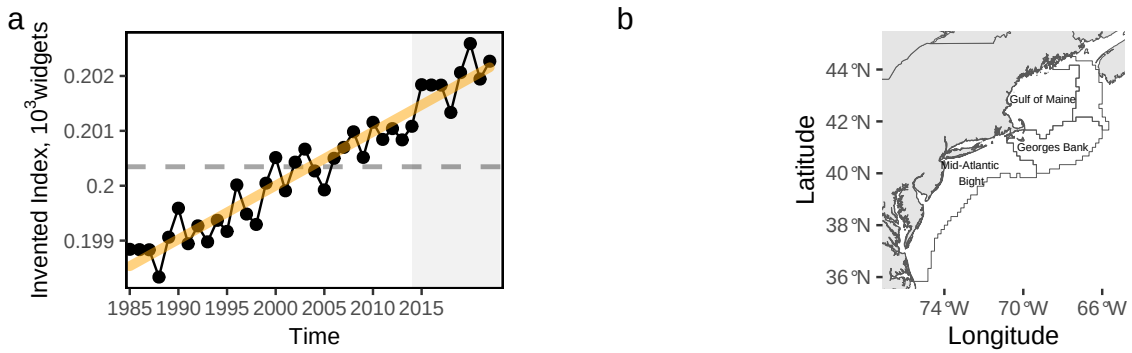

Figure 54: Document orientation. a. Key to figures. b.The Northeast Large Marine Ecosystem.

Fish and invertebrates are aggregated into similar feeding categories (Table 4) to evaluate ecosystem level trends in predators and prey.

Table 4: Feeding guilds and management bodies.

Guild	MAFMC	Joint	NEFMC	State or Other
Apex Predator				shark uncl, swordfish, yellowfin tuna, bluefin tuna
Piscivore	summer flounder, bluefish, northern shortfin squid, longfin squid	spiny dogfish, goosefish	winter skate, clearnose skate, thorny skate, offshore hake, silver hake, atlantic cod, pollock, white hake, red hake, atlantic halibut, acadian redfish	sea lamprey, sandbar shark, atlantic angel shark, atlantic torpedo, conger eel, spotted hake, cusk, fourspot flounder, windowpane, john dory, atlantic cutlassfish, blue runner, striped bass, weakfish, sea raven, northern stargazer, banded rudderfish, atlantic sharpnose shark, inshore lizardfish, atlantic brief squid, northern sennet, king mackerel, spanish mackerel
Planktivore	atlantic mackerel, butterfish		atlantic herring	harvestfishes, smelts, round herring, alewife, blueback herring, american shad, menhaden, bay anchovy, striped anchovy, rainbow smelt, atlantic argentine, slender snipe eel, atlantic silverside, northern pipefish, chub mackerel, atlantic moonfish, lookdown, blackbelly rosefish, lumpfish, northern sand lance, atlantic saury, mackerel scad, bigeye scad, round scad, rough scad, silver rag, weitzmans pearlsides, atlantic soft pout, sevenspine bay shrimp, pink glass shrimp, polar lebbeid, friendly blade shrimp, bristled longbeak, aesop shrimp, norwegian shrimp, northern shrimp, brown rock shrimp, atlantic thread herring, spanish sardine, atlantic bumper, harvestfish, striated argentine, silver anchovy
Benthivore	black sea bass, scup, tilefish		barndoor skate, rosette skate, little skate, smooth skate, haddock, american plaice, yellowtail flounder, winter flounder, witch flounder, ocean pout, crab,red deepsea	crab,unc, hagfish, porgy,red, sea bass,nk, atlantic hagfish, roughtail stingray, smooth dogfish, chain dogfish, bluntnose stingray, bullnose ray, southern stingray, longfin hake, fourbeard rockling, marlin-spike, gulf stream flounder, longspine snipefish, blackmouth bass, threespine stickleback, smallmouth flounder, hogchoker, bigeye, atlantic croaker, pigfish, northern kingfish, silver perch, spot, deepbody boarfish, sculpin uncl, moustache sculpin, longhorn sculpin, alligatorfish, grubby, atlantic seasnail, northern searobin, striped searobin, armored searobin, cunner, tautog, snakeblenny, daubed shanny, radiated shanny, red goatfish, striped cusk-eel, wolf eelpout, wrymouth, atlantic wolffish, fawn cusk-eel, northern puffer, striped burrfish, planehead filefish, gray triggerfish, shortnose greeneye, beardfish, cownose ray, american lobster, cancer crab uncl, jonah crab, atlantic rock crab, blue crab, spider crab uncl, horseshoe crab, coarsehand lady crab, lady crab, northern stone crab, snow crab, spiny butterfly ray, smooth butterfly ray, snakefish, atlantic midshipman, bank cusk-eel, red cornetfish, squid cuttlefish and octopod uncl, spoonarm octopus, bank sea bass, rock sea bass, sand perch, cobia, crevalle jack, vermilion snapper, tomtate, jolthead porgy, saucereye porgy, whitebone porgy, knobbed porgy, sheepshead porgy, littlehead porgy, silver porgy, pinfish, red porgy, porgy and pinfish uncl, banded drum, southern kingfish, atlantic spadefish, leopard searobin, dusky flounder, triggerfish filefish uncl, blackcheek tonguefish, orange filefish, queen triggerfish, ocean triggerfish
Benthos	atlantic surfclam, ocean quahog		sea scallop	sea cucumber, sea urchins, snails(conchs), sea urchin and sand dollar uncl, channeled whelk, blue mussel

State of the Ecosystem 2024: Request Tracking Memo

March 27, 2024

Introduction

In the table below we summarize all comments and requests with sources. The memo is now reorganized into categories of requests in descending order of overall Council priority. The new Rank column summarizes priority and was derived from combined discussion with the Mid-Atlantic SSC ecosystem working group and a survey of selected MAFMC members coordinated by Council staff in July 2022. The Progress column briefly summarizes how we responded, with a more detailed response to each request in a section for each request category. In the Status column, "In SOE" indicates a change included in the report(s).

Table 1: State of the Ecosystem requests by category and Council priority.

Request	Year	Rank	Source	Status	Progress
System level thresholds/ref pts					
Compare EOF (Link) thresholds to empirical thresholds (Large, Tam)	2021	Highest	MAFMC SSC	In progress	Analysis planning with Mid SSC
Trend Analysis / Inflection / Break points	2019 - 2023	Highest	Both Councils and SSCs	In progress	Prototype analysis 2022-2023
Optimum yield for ecosystem	2021	Highest	NEFMC	In progress	Analysis planning with Mid SSC
How does phyto size comp affect EOF indicator, if at all?	2021	High	MAFMC	In progress	Analysis planning with Mid SSC
Sum of TAC/ Landings relative to TAC	2021, 2023	Moderate	MAFMC SSC	In SOE-MAFMC, In progress-NEFMC	Seafood Production section
Nutrient input, Benthic Flux and POC (particulate organic carbon) to inform benthic productivity by something other than surface indicators	2021, 2023	Low	MAFMC SSC	In progress	Stomach-based benthos indices in development
Reduce indicator dimensionality with multivariate statistics	2020	Lowest	NEFMC	In progress	Analysis planning with Mid SSC
Management					
Incorporate social sciences survey from council	2020	High	NEFMC	Not started	Lacking resources this year
Management complexity	2019	High	MAFMC	In progress	Student work needs further analysis, no further work this year
Recreational bycatch mortality as an indicator of regulatory waste	2021	High	MAFMC SSC	Not started	Lacking resources this year
Include New England ports with significant reliance on mid species be included in the Mid SOE	2022	Unranked	MAFMC	In SOE	Other Ocean Uses: Offshore Wind section
Re-evaluate EPUs	2020	Lowest	NEFMC	Not started	Lacking resources this year
Short term forecasts					
Using phytoplankton trends to forecast fish stocks	2022	High	MAFMC	Not started	Lacking resources this year
Short term forecasting (water temp, productivity)	2022	High	NEFMC	Not started	Lacking resources this year
Regime shifts					
Time series analysis (Zooplankton/Forage fish) to tie into regime shifts	2021	High	MAFMC SSC	In progress	Individual projects started
Regime shifts in Social-Economic indicators	2021	High	NEFMC SSC	In progress	Analysis planning with Mid SSC
Multiple system drivers					
Linking Condition	2020	High	MAFMC	In progress	Not ready for 2023
Avg weight of diet components by feeding group	2019	High	Internal	In progress	Part of fish condition project
Cumulative weather index	2020	Moderate	MAFMC	In progress	Data gathered for prototype

Request	Year	Rank	Source	Status	Progress
Fall turnover date index	2021	Moderate	MAFMC SSC	In SOE	Climate and Ecosystem Productivity section
Modeling cold pool/warm core ring and wind development interactions	2022	Moderate	MAFMC	Not started	Lacking resources this year
Impact of climate on data streams (changes in catchability of survey)	2022	Moderate	NEFMC SSC	Not started	Lacking resources this year
Young of Year index from multiple surveys	2019	Moderate	MAFMC	Not started	Lacking resources this year
Links between species availability inshore/offshore (estuarine conditions) and trends in recreational fishing effort?	2021	Unranked	MAFMC	In progress	Bluefish prey index inshore/offshore partially addresses
Tell Social stories like we try to tell biological stories	2022	Unranked	GARFO	Not started	Lacking resources this year
What determines a "risk"? Include aquaculture as a risk?	2022	Unranked	NEFMC SSC	In progress	Climate and Ecosystem Risks revision
Profits vs Revenue	2023	Unranked	Both Councils	In progress	Profit calculation for subset of fleet
OA linked to scallop harvest in areas where aragonite saturation is highlighted.	2023	Unranked	Both Councils	Not started	Lacking resources this year
Time series of social indicators	2023	Unranked	NEFMC	In progress	SOE evaluates changes from last year
Stability indicator - yield over time in NE	2023	Unranked	NEFMC	Not started	Lacking resources this year
Vessel-level diversity vs fleet level diversity	2023	Unranked	NEFMC	Not started	Lacking resources this year
Inclusion of upcoming HMS climate vulnerability assessment	2023	Unranked	NEFMC	Not started	Assessment not yet published
Mean stomach weight across feeding guilds	2019	Low	MAFMC	In progress	Intern evaluated trends in guild diets
Environmental Justice - Further Explanation and maybe have Soc Sci folks on call to explain	2022	Low	MAFMC SSC	In SOE	Social and cultural section
Changing per capita seafood consumption as driver of revenue?	2021	Low	MAFMC	Not started	Lacking resources this year
Relate OA to nutrient input; are there "dead zones" (hypoxia)?	2021	Low	MAFMC	In SOE	In new 2023 Highlights section
Estuarine Water Quality	2020	Low	NEFMC	In SOE-MAFMC, In progress-NEFMC	Intern project 2021 needs expansion
Decomposition of diversity drivers highlighting social components	2021	Lowest	MAFMC SSC	Not started	Lacking resources this year
Indicators of chemical pollution in offshore waters	2021	Lowest	MAFMC	Not started	Lacking resources this year
Estuarine condition relative to power plants and temp	2019	Lowest	MAFMC	Not started	Lacking resources this year
Functional group level status/thresholds/ref pts					
Forage availability index (Herring/Sandlance)	2021	Moderate	NEFMC	In SOE	Climate and Ecosystem Productivity section
VAST and uncertainty	2020	Moderate	Both Councils	In progress	Not ready for 2023
Seal index	2020	Low	MAFMC	In progress	Not ready for 2023
Apex predator index (pinnipeds)	2021	Low	NEFMC	In progress	Protected species branch developing time series
Biomass of spp not included in BTS	2020	Lowest	MAFMC	Not started	Lacking resources this year
Stock level indicators					
Shellfish growth/distribution linked to climate (system productivity)	2019	Moderate	MAFMC	In progress	Project with A. Hollander
Indicator of scallop pred pops poorly sampled by bottom trawls	2021	Moderate	NEFMC	Not started	Lacking resources this year
Climate change impacts on NEFSC surveys - change in survey catchability	2023	Unranked	NEFMC	In progress	Varies by research track

Request	Year	Rank	Source	Status	Progress
Sturgeon Bycatch	2021	Lowest	MAFMC SSC	Not started	Lacking resources this year
SOE admin					
SOE usage tracking	2022-2023	Unranked	MAFMC SSC	In progress	Draft manuscript in progress
Include estimates of inclusion years in request memo	2022	Unranked	NEFMC SSC	In progress	Reorganized memo to clarify project timing

Responses to comments

Priorities from 2023 have been retained for 2024. While no formal prioritization has been conducted since last year, we welcome further discussion and adjustment of priorities as needed by the Councils and SSCs. New requests from 2023 are listed without prioritization, while previously prioritized requests have been noted with adjustments to years in the table.

Some high priority SOE work was delayed in 2023-2024 due to staff turnover. However, we plan to continue as noted in the categories below, and welcome further feedback on planned and continuing work.

In response to an unranked request for further definition of risk, in addition to general requests for further synthesis and transparency, we have made major revisions to the 2024 SOEs:

1. The Climate and Ecosystem Risks section now centers on management decisions. It includes 3 sections:
    - Risks to spatial management, highlighting distribution shifts in managed species with potential drivers
    - Risks to seasonal management, highlighting temporal shifts in managed species with potential drivers
    - Risks to quota setting and rebuilding, highlighting productivity and condition shifts, with potential drivers
2. A new section, 2023 Highlights, reviews new conditions, activities, and anomalous observations across the Northeast US from the past year. This section is summarized graphically on p.3 (Mid-Atlantic report) and p.4 (New England report).
3. A new online indicator catalog provides a "deep dive" into each indicator, with multiple visualizations of the data and clearer links to the datasets in the ecodata R package for increased transparency and ease of use by investigators throughout the region.

System level thresholds/reference points

Further refining ecosystem level overfishing (EOF) indicators and investigating optimum yield (OY) at the ecosystem level was identified as highest priority by both the MAFMC SSC working group and by surveyed MAFMC members. Methods for evaluating ecosystem indicator trends, inflection points, and breakpoints (regimes, see below) were also ranked highest priority by both SSC and Council as these methods apply to ecosystem level thresholds and reference points, as well as to indicators at the functional group or stock level, or to indicators of climate or habitat risk. Several other SSC and Council requests are related to or support these analyses and can likely be addressed by planned analyses.

The EOF indicators were first presented in 2021 and were discussed in depth with the MAFMC SSC working group in April 2022 and February 2023. Considerable progress has been made on updating data inputs for the EOF indicators and planning for system level threshold analyses with the MAFMC SSC. After reviewing previous presentations of the EOF indicators, Andy Beet (NEFSC) reviewed solutions to several data input problems identified in July 2022 (menhaden landings were added and differences between different data sources were resolved). In 2023, estimates of regional productivity were added to calculate regional thresholds, for comparison with published global thresholds. An outstanding data input task is completing discard estimates for all species in the Northeast US, which is in progress.

A simulation study is being planned to use the Northeast US Atlantis ecosystem model [1] to investigate robustness of thresholds and determine how informative they can be. This portion of the research will likely address the MAFMC

request to evaluate how phytoplankton size composition might affect the EOF indicator. It will also address SSC questions raised about tradeoffs between fishing for different species groups to address EOF, and how climate driven changes in transfer efficiency might be incorporated into or impact EOF indicators. In addition, the NEUS Atlantis model may be able to address the lower priority requests on nutrient input and benthic flux contributions to system productivity once model sensitivity analysis determines whether these model components behave reasonably. We expect to present results of EOF analyses to the SSC in late 2023. If reviews are positive, EOF indicators may appear in the 2024 SOE, and if further work is needed they should appear in the 2025 SOE.

Automated methods for estimating both short term and long term trends, evaluating time series inflection points, and identifying breakpoints (regimes) are being tested for inclusion in the 2025 SOE.

- The `ecodata` R package already incorporates long term trend estimation based on Hardison et al. [2]. This research found that trends were most robustly distinguished from autocorrelation in indicator time series of 30 years or longer. However, there is still considerable interest in robust methods for assessing short term trends, especially for the most recent portions of time series and for shorter indicator time series. In 2022, work was initiated on short term trend analysis robust to autocorrelation by Andy Beet and Kim Bastille (NEFSC). The short term trend fitting method needs more simulation testing to address performance with missing data.
- Kim Bastille (NEFSC) has also been working on methods to identify inflection points in indicator time series based on Large et al. [3] and [4]. A standardized method has been implemented as a prototype and applied to several existing SOE indicators in 2022, but several questions on default approaches to be used across multiple indicators require more in depth analysis and review.
- A method for identifying breakpoints has been implemented by Kim Bastille and Laurel Smith (NEFSC) and a prototype analysis developed using SOE indicators in 2022. If this method can be further developed, it may be reviewed in a regime shift workshop scheduled for May 2024.

Work is in progress by John Walden and Geret DePiper (NEFSC) to combine multiple indicators into single integrated indices (Index Numbers) using Data Envelopment Analysis. This work has been reviewed by the MAFMC SSC ecosystem working group in July 2022 and again in February 2023. Index Numbers evaluate sets of environmental indicators and management output indicators to determine system performance. The approach combines important management outputs linked to objectives (e.g. commercial revenue, recreational days fished, right whale abundance) and likely ecosystem drivers of change in these outputs (e.g., chlorophyll a, zooplankton, aggregate fish biomass) into an analysis evaluating aggregating inputs and outputs into single indicators used to determine whether system performance has improved over time relative to a reference year. An initial case study using the SOE indicators identified above was presented in July 2022, and a follow up analysis evaluating individual Index Numbers for SOE management objectives (Seafood Production, Recreational Opportunities, etc.) was presented in February 2023. Integrated Index Numbers based on some of these case studies may be further reviewed by the MAFMC SSC ecosystem working group and developed for the 2025 SOE.

Management

Council members tended to give higher priority rankings to requests in this category relative to the SSC working group, but overall both ranked management related requests high priority.

In 2022, MAFMC requested that New England ports with significant reliance on Mid-Atlantic managed species be included in the Mid-Atlantic SOE analysis of potential risks to fishery management from offshore wind development. Angela Silva (NEFSC) evaluated landings for all New England ports by both value and pounds, and included New England ports with over 50% of maximum value or pounds MAFMC managed species landed from wind areas between 2008-2021. Six ports were identified as "significantly reliant" using this criteria, and we included this information in the 2023 and 2024 MAFMC SOEs.

It may be possible to address the requests on management complexity and recreational bycatch mortality as part of the Mid-Atlantic EAFM risk assessment updates throughout 2024 if appropriate expertise can be brought into this process.

The request to re-evaluate Ecosystem Production Units (EPUs) was ranked lowest priority. We do not forsee having the resources to address this request, which is a large project, in the near future.

Short term forecasts

The SSC working group ranked these new requests higher priority relative to Council members, but overall both ranked short term forecasting requests high priority. New resources to address this request are coming online at the NEFSC through the Climate Ecosystem Fisheries Initiative (CEFI) in 2024. This national effort seeks to link ocean model forecasts with products used in management. In the Northeast region, the SOE team plans to closely collaborate with CEFI modelers to test and present new products to the Councils and SSCs as they come online.

While using phytoplankton trends to forecast fish stocks may be feasibly simulation tested within the Atlantis modeling framework described above for EOF indicators, this relatively long term project would require dedicated effort to achieve, likely by a postdoctoral or CEFI researcher.

Some experimental short term forecasts of regional water temperature are currently available, and could be investigated or presented to the SSCs during the 2025 cycle if this remains a high priority. MAFMC has recently completed work on short term forecasts of species distributions for fisheries management are in progress with Rutgers University and MAFMC, which may also address this request. Skill assessment of these forecasts, as well as determining the context in which they would be used (stock assessment projections? habitat projections? other uses?) would be needed to bring them into the management process (this is better developed for the ongoing Rutgers/MAFMC project). Incorporating short term forecasts into the SOE outside the ongoing Rutgers/MAFMC project would require a similar level of effort to the phytoplankton/fish forecasting project above.

Regime shifts

Adding information on regime shifts was considered a high priority by both the Council and SSC. Time series analysis of zooplankton and forage fish to evaluate potential linked regime shifts is currently in progress, and multiple projects may contribute to this. We are working to coordinate existing projects (see below) into a synthesis product for the SOE. Because the projects are on different timelines, it is difficult to give a target date for SOE synthesis. However, a workshop is scheduled for May 2024 to review and synthesize methods and results for the Northeast Region. We expect to have some project results published prior to the 2025 SOE. With these publications complete, some synthesis may be presented in the following SOE cycle.

Table 2: Selected Regime Shift Projects. Methods: rpart = recrusive partitioning R package, DFA = dynamic factor analysis, EOF = empirical orthoganal function, SEWS = spatial early warning signals, DEA = data envelopment analysis, GAMs = general additive models. Ecosystem Component: Env = environmental drivers, Fish = fish, Zoo = zooplankton, Landings = fishery landings.

Analysis	Methods	Ecosystem Component	Temporal Scale	Spatial Scale	Availability
SOE Indicator Comparison	rpart	Env to Fish	Annual	EPU	Available Now
Condition (1)	rpart	Env to Fish	Annual, fall only	EPU or shelf	Multi species available now
Condition (2)	DFA	Fish	Annual?	EPU	In progress
Zooplankton	multiple	Zoo	Seasonal	EPU	In review
Zooplankton VAST	EOF	Zoo	Seasonal	EPU	In progress
SST	SEWS	Env	Annual?	NW Atlantic	In progress
DEA	DEA	Zoo to Landings	Annual	EPU	In progress
Stock Recruit	changepoint and GAMs	Fish	Annual	Stock	Not started, could use stock smart

Regime shifts in socio-economic indicators may be addressed in the ongoing work described above by John Walden and Geret DePiper (NEFSC) integrating multiple indicators into Index Numbers. Once the structure of the Index Numbers is determined, these time series can be evaluated for change points using any of the methods described in the table above.

Multiple system drivers

This category contains a wide array of requests with many projects currently in progress. There were two requests ranked high priority, five ranked moderate priority, nine unranked because they are newer requests, and eight ranked

low or lowest priority. Given the number of SOE requests, those ranked lowest priority that have not already been started are unlikely to be addressed.

The high priority request in this category is incorporating the ongoing fish condition project and associated analyses into the SOE. Regime shift analyses of fish condition may be available for the 2025 SOE. Initial work linking multiple SOE low trophic time series with fish condition using dynamic structural equation modeling [5] was started in February 2024. With additional resources, this approach may be presented to synthesize drivers of fish condition across multiple species in a future SOE.

An unranked request to review direct indicators of net vs. gross revenue indicators is in progress. We can calculate net revenue for ~ 1/2 of the revenue generated within the Greater Atlantic Region. The trends between the total gross revenue and gross revenue for which we can estimate costs are different. In addition, the net revenue looks to be just a scaled gross revenue metric, with trends staying the same, just the magnitude changing (Fig. 1).

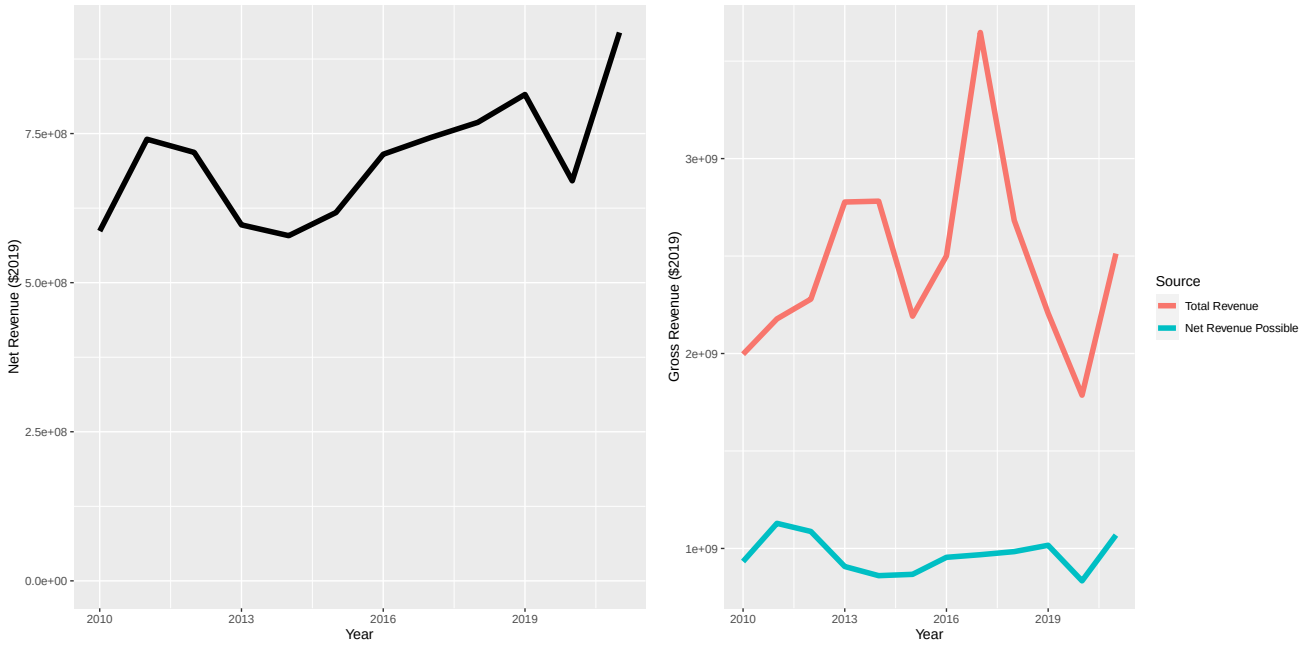

Figure 1: Net revenue (left) and cost coverage (right) in the Greater Atlantic Region.

One moderate priority request was included in the 2023-2024 SOE: a fall turnover index has been included in both the MAFMC and NEFMC reports in the Climate and Ecosystem Productivity sections.

One low priority request was included in the 2023 SOE: we updated text with further explanation of the Environmental Justice indicators. This text has been expanded for 2024 in an online indicator catalog page.

An unranked request to evaluate links between species availability inshore and offshore and trends in recreational fishing effort was partially addressed using a spatial index of forage fish to evaluate bluefish availability to the recreational fishery during the research track assessment in December 2022. This forage fish index has been included in the 2023-2024 SOE.

Several other moderate/unranked and low priority requests are currently in progress or started as intern projects, including a cumulative weather index, mean stomach weights across feeding guilds, and estuarine water quality for the NEFMC SOE. If sufficient resources are found to finish these projects, they could be included in the 2024 SOE.

Functional group level status/thresholds/ref pts

Requests in this category were considered moderate to low priority by the SSC and Council. However, many were already in progress prior to ranking, and one has been included in the 2023 SOE.

The NEFMC requested a forage availability index (including both managed species such as herring and unmanaged species such as sandlance). A spatial index of forage availability was developed for the bluefish research track assessment as described above. This index was partitioned into EPUs and presented in the 2023 and 2024 SOEs. An index of forage center of gravity was also included as a potential driver of distribution shifts in the 2024 Risks to Spatial Management section.

Gray seal pup count indices are already included in the NEFMC SOE, and indices of populations for other seals and apex predators are in development by the protected species branch. These additional indices were not ready for the 2024 report.

Investigating time series of biomass for species not well represented in bottom trawl surveys was partially addressed by the forage index included in the 2023-2024 reports. However, only a subset of forage species are not well represented in bottom trawl surveys, and other species that are not forage are also not well represented in bottom trawl surveys. This request was ranked lowest priority by the Council and SSC, and given the difficulty of synthesizing data on poorly sampled species, is unlikely to be addressed in the near future.

Stock level indicators

Requests in this category were ranked moderate to lowest priority by the SSC and Council. Indicators of this nature would be well suited to Ecosystem and Socioeconomic Profiles (ESP) developed during research track assessments for individual stocks. Some aspects of these indicators may benefit SOE reporting as well.

One request, linking shellfish growth and distribution to climate change and system productivity, is in progress. Alexis Hollander (VIMS) completed her thesis on surfclam growth in relation to bottom temperature in 2022, and information from this work can likely be included in the 2025 SOE, pending publication of student thesis results.

The request for indicators of scallop predators that are poorly sampled by bottom trawls is similar to the request in the category above addressing all species not well sampled by bottom trawls. It is possible that this request could be clarified and addressed during a scallop research track assessment.

A new unranked request to evaluate the impacts of climate change on survey catchability is being addressed in some research track stock assessments.

The request for a sturgeon bycatch indicator was ranked lowest priority by the SSC and Council, so is unlikely to be addressed in the near future.

SOE admin

These relatively new requests were not ranked; however, both are in progress.

Investigation of uses of the SOE as requested by the MAFMC SSC is in progress with the assistance of NOAA communications experts using a combination of website analytics and citation information. This information has been compiled as part of an in progress manuscript reviewing use of ecosystem reports across NMFS. We hope to have an update on uses of the Northeast SOEs for the 2025 report/request memo.

The restructuring of this memo according to prioritization is intended to partially address the requests for timelines on in progress SOE requests by the NEFMC SSC. While not all project timelines are currently available, we have reported estimates in this document where possible. In addition, the effort to prioritize requests in 2022 ensures that limited resources are applied to the highest priority issues.

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