Atlantic States Marine Fisheries Commission

ISFMP Policy Board

May 2, 2024
10:00 – 11:45 a.m.

Draft Agenda

The times listed are approximate; the order in which these items will be taken is subject to change; other items may be added as necessary

1.	Welcome/Call to Order *(J. Cimino)*	10:00 a.m.
2.	Board Consent • Approval of Agenda • Approval of Proceedings from January 2024	10:00 a.m.
3.	Public Comment	10:05 a.m.
4.	Executive Committee Report *(J. Cimino)*	10:15 a.m.
5.	2024 State of the Ecosystem Report (*S. Gaichas*)	10:20 a.m.
6.	Northeast Trawl Advisory Panel Progress Report for Industry- Base Survey Pilot Program (*D. Salerno*)	10:55 a.m.
7.	Consider Revised Guidelines for Resource Managers on the Enforceability of Fishery Management Measures (*K. Blanchard*) **Final Action**	11:25 a.m.
8.	Stock Assessment Updates (*K. Drew*)	11:35 a.m.
9.	Review Non-compliance, If Necessary **Action**	11:40 a.m.
10.	Other Business/Adjourn	11:45 a.m.

The meeting will be held at The Westin Crystal City, 1800 Richmond Highway, Arlington, VA; 703.486.1111, and via webinar; click here for details.

Sustainable and Cooperative Management of Atlantic Coastal Fisheries

MEETING OVERVIEW

ISFMP Policy Board
May 2, 2024
10:00 – 11:45 a.m.

Chair: Joe Cimino (NJ) Assumed Chairmanship: 10/23	Vice Chair: Dan McKiernan (MA)	Previous Board Meeting: January 25,2024
Voting Members: ME, NH, MA, RI, CT, NY, NJ, PA, DE, MD, DC, PRFC, VA, NC, SC, GA, FL, NMFS, USFWS (19 votes)		

2. Board Consent

- Approval of Agenda
- Approval of Proceedings from January 2024

3. Public Comment – At the beginning of the meeting, public comment will be taken on items not on the agenda. Individuals that wish to speak at this time must sign-in at the beginning of the meeting. For agenda items that have already gone out for public hearing and/or have had a public comment period that has closed, the Board Chair may determine that additional public comment will not provide additional information. In this circumstance, the Chair will not allow additional public comment on an issue. For agenda items that the public has not had a chance to provide input, the Board Chair may allow limited opportunity for comment. The Board Chair has the discretion to limit the number of speakers and/or the length of each comment.

4. Executive Committee Report (10:15-10:20 a.m.)

Background

- The Executive Committee will meet on May 1, 2024

Presentations

- J. Cimino will provide an update of the Executive Committee Work

Board actions for consideration at this meeting

- None

5. 2024 State of the Ecosystem Report (10:20-10:55 a.m.)

Background

- State of the Ecosystem Reports are completed annually for the Mid-Atlantic and New England areas. The reports provide the current status of the Northeast Shelf marine ecosystems (Georges Bank, Gulf of Maine, and the Mid-Atlantic Bight). They describe changes in physical, chemical, biological, and socioeconomic indicators that, when compiled, help describe the health of the ecosystem over time.

Presentations

- S. Gaichas will present and overview of the State of the Ecosystem Reports (**Supplemental Materials**)

Board actions for consideration at this meeting

- None

6. Northeast Trawl Advisory Panel Progress Report for Industry- Base Survey Pilot Program (10:55-11:25 a.m.)

Background

- The Commission, along with the Mid Atlantic and New England Fishery Management Councils, requested information on an industry-based survey that would be complementary to the NEFSC Spring and Autumn bottom trawl survey
- At the Winter Meeting, the NEFSC presented white paper responding to the Councils and Commission's request
- The three management bodies requested NTAP and the NTAP Industry Based Survey (IBS) Working Group to develop an outline detailing a proposal to conduct an IBS Pilot Program

Presentations

- D. Salerno will provide an update on NTAPs progress (**Meeting Materials**)

Board actions for consideration at this meeting

- None

7. Consider Revised Guidelines for Resource Managers on the Enforceability of Fishery Management Measures (11:25-11:35 a.m.) Final Action

Background

- The LEC has updated the Guidelines for Resource Managers on the Enforceability of Fishery Management Measures document. The guidelines cover a variety of management strategies that are employed in Commission FMPs. They are intended to help managers to take into account the enforceability of all management regulations that are developed. The Guidelines are intended to support and strengthen the effectiveness of Commission efforts to conserve fisheries resources.

Presentations

- K. Blanchard will provide and overview of the updated Enforceability (**Meeting Materials**)

Board actions for consideration at this meeting

- Consider approval of the Revised Guidelines for Resource Managers on the Enforceability of Fishery Management Measures

8. Stock Assessment Updates (11:35-11:40 a.m.)

Background

- Sturgeon and River Herring have on-going stock assessment updates.

Presentations • K. Drew will provide an update of on-going stock assessments
Board actions for consideration at this meeting • None

9. Review Non-Compliance, If Necessary Action

10. Other Business/Adjourn (11:45 a.m.)

DRAFT PROCEEDINGS OF THE

ATLANTIC STATES MARINE FISHERIES COMMISSION

ISFMP POLICY BOARD

The Westin Crystal City
Arlington, Virginia
Hybrid Meeting

January 25, 2024

These minutes are draft and subject to approval by the ISFMP Policy Board.
The Board will review the minutes during its next meeting.

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ATTENDANCE TO BE FILLED ON A LATER DATE

The Interstate Fisheries Management Program Policy Board of the Atlantic States Marine Fisheries Commission convened in the Jefferson Ballroom of the Westin Crystal City Hotel, Arlington, Virginia, via hybrid meeting, in-person and webinar; Wednesday, January 25, 2024, and was called to order at 8:30 a.m. by Chair Joe Cimino.

CALL TO ORDER

CHAIR JOE CIMINO: Good morning, everyone. My name is Joe Cimino; I'm the Administrative Commissioner for New Jersey, current Chair of the Commission. We're going to start Policy Board today. I will be playing DJ for the rest of this winter meeting, and the request line is already full. We're getting started a few minutes late, we've got a lot to cover today.

APPROVAL OF AGENDA

CHAIR CIMINO: I'm going to go through Approval of the Agenda. Are there any agenda items that need to be added? Start with David Borden.

MR. DAVID V. BORDEN: I would just like to have a brief couple of minutes to talk about striped bass, please.

CHAIR CIMINO: Yes, thank you, David. I realize there is a time constraint there for you, so we will take you after Public Comment, and I think the Board Chair for Striped Bass as well. Go ahead, Pat.

MR. PATRICK C. KELIHER: We have a process issue with lobster that we need to address, so we need to add that to the agenda if we could as well, please.

CHAIR CIMINO: Duly noted and I think if we can, we'll do that as Other Business, to cover David's thing we'll do that a little earlier. Chris Wright, go ahead.

MR. CHRIS WRIGHT: Hi, this is Chris Wright, NOAA Fisheries. I just have a short announcement regarding an ESA petition on horseshoe crab. I just have a short little statement to make. I could either do it after we do the agenda or in Other Business.

CHAIR CIMINO: Yes, if that is okay, we'll take that at Other Business, thank you. A few additional items.

APPROVAL OF PROCEEDINGS

CHAIR CIMINO: With that we'll go through the approval of the proceedings from the October, 2023 meeting. Any concerns, additions, edits? No seeing any hands, good.

PUBLIC COMMENT

CHAIR CIMINO: If I could get a show of hands online and in the room for Public Comment. I see one in the room.

MS. TONI KERNS: I have one hand online, just making sure there is not anybody else.

CHAIR CIMINO: Let's leave this at an even number here. It looks like we have two people, and we'll give two minutes to each speaker. We'll start in the room, if you can introduce yourself. Thank you.

MR. PHIL ZALESAK: Mr. Chairman, my name is Phil Zalesak; I'm president of the Southern Maryland Recreational Fishing Organization, better known as SMRFO. SMRFO, along with the Chesapeake Legal Alliance has brought a law suit against the state of Virginia for violating Virginia code regarding the management of Atlantic Menhaden Reduction Fishery in Virginia waters. The law suit is ongoing.

We have also filed a petition for rulemaking to request and direct the state of Virginia to end Atlantic menhaden reduction fishing in the Chesapeake Bay and its entrance. I'm here today to respectfully request that the Commission hold an Atlantic Menhaden Management Board meeting this spring.

Why? Current Commission policy is based on the false assumption that Atlantic menhaden biomass density in the Chesapeake Bay is the same as the Atlantic Ocean. The science and the prevailing science are that they are not the same. In fact, the latest science and empirical data, provided by this Commission, the state of Maryland, the state of Virginia, and the National Oceanographic and

Atmospheric Administration support the position that localized depletion is occurring in the Chesapeake Bay.

Given that localized depletion of Atlantic menhaden in the Chesapeake Bay has been an issue with this Commission without resolution, under the current process since 2004, I request the following. The Commission holds an Atlantic Menhaden Management Board meeting this spring. The meeting will be structured in the form of a debate, a discussion and a decision on the future of Atlantic menhaden reduction fishing in the Chesapeake Bay and its entrance.

This proposal is supported by the Virginia Saltwater Sportfishing Association, Recreational Fishing Organization, Maryland's Tidal and Coastal Recreational Fishing Committee, the National Audubon Society, and the Virginia Osprey Foundation. This is a very reasonable request, which should be acted on as soon as possible. I thank you for your time.

CHAIR CIMINO: Well, thank you, appreciate that and appreciate you being so timely. We had a couple of extra hands here, so we'll keep moving through. Next up is Tom Lilly.

MR. TOM LILLY: Ladies and Gentlemen of the Policy Board, in the last year grim evidence of menhaden overharvesting in the Chesapeake Bay has piled up. Starvation of thousands of osprey chicks, and the failure of the striped bass spawning stock. Despite public outcry, and the effect that this is having on millions of Chesapeake Bay residents, repeat, millions of Chesapeake Bay residents and their children, and their grandchildren.

Despite all of this, the Menhaden Board has refused to meet in October, November, and they are refusing to meet right now. From the New York and New Jersey experience and your ERP science, we know very clearly how Chesapeake Bay would benefit by moving the factory fishing. We're talking about one company here, as you know, by moving them into the U.S. Atlantic Zone. There is no question about that. Have you all stopped to think that by refusing to meet, by the Menhaden Board refusing to meet, that you have dashed the hopes of numerous groups, thousands if not millions of people that our Chesapeake Bay wildlife would get the menhaden forage, they need this year.

That hope is gone, it is gone completely. Also, by refusing to meet, you are not taking into consideration that thousands of schools of menhaden are being caught, just as they try and migrate into Maryland. I agree completely that you should have a Menhaden Board meeting this spring to consider these very important topics. Thank you so much.

CHAIR CIMINO: Thank you, Mr. Lilly. Voices are heard, we are planning on having a meeting this spring. There is a lot to cover and a lot of good updates, I think, for what is going on with our menhaden research and monitoring. I appreciate both of you keeping that within the timeframes. I think we have at least one other hand, two hands still. I'll go to George Socca.

MR. GEORGE SOCCA: Good morning, members of the Atlantic States Marine Fisheries Commission. My name is George Socca. I have a rich 35-year history as a publisher of a weekly fishing magazine in New York, and a deep involvement in the fishing community, including founding the first saltwater fishing website, leading a nationwide fishing network, serving as a founding president of the CC in New York, and the Recreational Advisor on the Atlantic States Marine Fisheries Weakfish Advisory Board.

Obviously, my connection to our marine environment is profound. Today I am here to discuss a significant environmental and economic impact following the cessation of reduction menhaden fishing operations in New York. The Hudson bass fishery is thriving, a fact that clearly demonstrates when you look and compare the YOY data between the Hudson and Chesapeake stock of striped bass since the end of the reduction fishing in our region.

The transformation is nothing short of remarkable. Our striped bass fishery has evolved into a vibrant

and extraordinary experience, providing a significant boost to anglers and the industry they support. Moreover, the overall marine ecosystem has experienced a significant revival. A prime example of this is a daily spectacle of breaching whale and dolphins off of Long Island's beaches, a sight so frequent that these fellows no longer need to board whale watching vessels to enjoy this majestic creature.

The consistent presence of bluefin tuna throughout the fishing season further indicates the thriving wildlife underscoring the richness, and robust health of our marine habitat. In addition, the resurgence of our bird population, especially the presence of 14 pairs of nesting eagles is now on Long Island. It's a testament to the broader ecological recovery.

These developments collectively illustrate a vibrant, rejuvenated marine and coastal ecosystems, a direct result of the positive changes in our fishing practices and environmental stewardship. In light of these positive changes, I strongly recommend that the Commission convene an Atlantic Management Board meeting this spring. This meeting should focus on discussions and decision making regarding the future of Atlantic menhaden reduction fishing, particularly in the Chesapeake Bay.

MR. CIMINO: Excuse me. I apologize, but as I mentioned, we have a very tight agenda today and that is a few minutes.

MR. SOCCA: Yes, I was told three minutes, I'm under that. But all right.

MR. CIMINO: Thank you. No, I'm sorry, it was two per individual, we are a bit behind on our agenda. I think you have clearly expressed your concerns, and I appreciate that, thank you. We have one more member of the public that wishes to speak, and that is Steve Atkinson.

MR. STEVE ATKINSON: Yes, good morning. My name is Steve Atkinson, I'm President of the Virginia Saltwater Sportfishing Association. I agree with the comments that have just been made about menhaden, as it relates to the Chesapeake Bay. As you know, when we raise these concerns, we are often told there is no science.

This summer a team got together and developed a plan. This included a plan for research, basically. It included representatives from the industry. This resulted in a bill that is now pending before the General Assembly, and I'm sad to say that the industry is now lobbying against this bill. I just find this to be a stunning disregard for the Chesapeake Bay. That's all.

CHAIR CIMINO: Thank you. I appreciate all the comments, and as I mentioned, looking forward to a Menhaden Meeting at the spring, and a lot of updates will be provided.

EXECUTIVE COMMITTEE REPORT

CHAIR CIMINO: With that we'll move into the Executive Committee Report, very appreciative of the fantastic summary provided by Pat.

We met yesterday and got a kickoff from Alexander Law on staff, who reported on legislative happenings for us, including what is going on with the Legislative Committee. He spoke also about the uncertainty in the federal fiscal budget, which has been going on for some time, obviously. There is also some interest in trying to resurrect the reintroduction for reauthorization for Magnuson, so we will see where that goes.

One of the big issues for all of us trying to manage these fisheries resources is the continuing budget issues, and we know that even that static funding, year after year, that obviously results in some serious cuts. That's one of our biggest pushes at the Commission to drill it home at Congress how important that is to keep the lights on here.

We got a report from Jainita Patel, who is our Science Committee Coordinator on the CESS, which is our Economic and Social Science Committee. This is kind of a revitalization for this committee. We have a new Chair, Sabrina Lovell, and a new Vice-Chair, Andrew Scheld. We had put out a request to all Commissioners just for some ideas on what the CESS

should be working on. We went through a summary of that.

I have been referring to that as kind of a first blush on what they will be working on for us. I think really the importance is that we now have a group that is working on stuff not only for the Commission, but is interested in tackling this at a state-by-state level. We really appreciate their help. For any Commissioners here who are still thinking about stuff that might have missed that deadline, we would be happy to hear of other interest that they feel the states need. Quickly we went through the election procedures for Commission Chair and Vice-Chair. We have been traditionally going on a rotation of Mid-Atlantic, New England and South Atlantic. One of the interesting things is it's also traditional to have a two-year term for Chair and Vice-Chair. However, elections are required, more or less, on an annual basis.

That brings us to our Strategic Plan, so we're starting again at a new strategic plan for 2024 through 2028. We had a preview of that at our annual meeting last year. I think most Commissioners felt that that was looking pretty solid. We did some edits to that, thanks especially to Erika and to staff for putting together that Strategic Plan, and was approved.

Well, excuse me, yes, we'll go through that approval at the Business Session, but Ex-Com had no further edits there. We briefly discussed the idea of keeping Board meetings in person for the Commission, or should I say at least this hybrid procedure. The reason why we brought that up was, it was a discussion that started while we were still forced to be virtual during the pandemic.

I think there was a strong general consensus among Ex-Com that things are going pretty well. There are really good reasons to stay in person, but always have this virtual option for both Commissioners and the public. Then one other thing that we talked about in Ex-Com was staff will be putting together a letter that will come back before this Board, on what is happening with the Federal Disaster Relief.

There is some current legislation, and we're looking for some clarity between what Congress was expecting to happen and the current procedures with NOAA. Staff will be putting that together and we'll see a draft to that. Is that for the next meeting, Bob? Yes, so by the next meeting we'll see a draft for that. That covers our Ex-Com report. We're going to turn it over to Alexander to go through our survey results. Letters first, sorry.

MR. ALEXANDER LAW: The Ex-Com recommended that the Policy Board approve a letter of support for a Working Waterfronts Protection Program. There are two bills in front of Congress right now, one in the Senate, one in the House that would both address creating a Working Waterfronts Protection Program. They differ in different provisions, how they approach this. The letter that I drafted is high level, and just speaks to the need and the impacts that our states are seeing, when it comes to working waterfronts, conversion, threats or climate change.

CHAIR CIMINO: Again, this is coming out of Executive Committee, and I'm just looking for a show of support here at the Policy Board to move this letter forward, so I can get some acknowledgement and consensus. Let's do it this way, is there any objection to putting this letter forward? Not seeing, thank you. Yes, Alexander, I appreciate you being up here with us. I did forget to go to David, so let's do that now, if we can. Go ahead, David.

ATLANTIC STRIPED BASS CATCH AND RELEASE MORTALITY

MR. BORDEN: Thank you, Mr. Chairman, for inserting me in the process early, because I've got to catch a plane. The only issue I wanted to talk about, and it's going to be very brief. At the last Board meeting I raised the subject of catch and release mortality on striped bass. It's well reflected in the minutes the concerns. But to summarize the concern is, we don't currently have a process to examine that issue. I'm getting increasingly concerned about the lack of that effort on that particular issue, because 40 percent of the mortality on striped bass relates to catch and release. When you combine that with the news that we seem to get at every single meeting about poor year classes here,

poor year classes there, invasive species feeding on striped bass in the estuaries and so forth. I think we're getting into a really dangerous place, where we have very limited management measures to address some of those types of concerns.

My suggestion at the last Board meeting was basically, we asked the Chair of the Board to focus some attention on that, and kind of bifurcate that issue of catch and release mortality into components that the Board could deal with, and figure out a process to deal with that issue, and then report back, for instance at the May meeting.

Toni had offered some staff assistance in doing that, I think she is still willing to do that. I think it would help here to have some input on this issue just quickly from the current Board Chair, because she's thought about it, and then we can move on with it. If people feel comfortable that this is a serious issue we need to work on, then I think we can leave it to the discretion of the current Board Chair to work on it, and draw in relevant expertise to help her out.

CHAIR CIMINO: I think we all realize; we share your concerns and we realize that this issue kind of got decoupled from previous actions. We weren't able to figure out a way forward through previous addenda and amendments. We are at a point where I think we have to be as proactive as possible to work on this, so I would like to bring Megan up, if you have another comment, David.

MR. BORDEN: Just quickly add, this is a really complex issue to deal with, and it's probably going to need to involve a diversity of expertise to deal with it. There is a lot of uncertainty with the issue. My rule of thumb when you get into a situation like this is you lean into the uncertainty, and try to work through the uncertainty. But hopefully Megan has the way forward on this.

CHAIR CIMINO: That is the weight of the world on your shoulders. I'm going to turn to Megan Ware, our current Board Chair for Striped Bass.

MR. BORDEN: No pressure, Megan.

MS. WARE: Yes, as David mentioned that he had brought this up at our previous Board meeting. Obviously, we were pretty focused on Addendum II yesterday. In talking with Emilie, some thoughts we've had over the next few weeks or months, we're going to compile some of the documentation we've had, in terms of discussions on discard mortality, what the challenges are, you know some of the thoughts from the Law Enforcement Committee, the Technical Committee, so that is all in one place.

Then potentially getting together a workgroup or a group of Commissioners to start a conversation on discard mortality. I don't know how much progress we would make on that workgroup ahead of the May meeting. But that would be a potential vision forward. I think we have some space time between now and the annual meeting, when we get the assessment to start to think about this. We've also been in contact with Mass DMF to potentially present some of their studies on discard mortality that they've been working on at the May meeting, so that is something else we've been thinking about.

CHAIR CIMINO: Yes, thanks, Megan. I appreciate that. I think our goal really is being prepared for the next assessment, more so than an upcoming meeting. I know we do have a tight schedule, but this is a very important issue to a lot of us, so I will look around the table to see if there are any other comments on this. Otherwise, we will proceed and do our best to be ready, as I said, for action knowing that the next assessment may not be so pleasant. With that, I think we now can turn it back over to Alexander.

REVIEW AND DISCUSS 2023 COMMISSIONER SURVEY RESULTS

MR. LAW: I'm going to be brief here. Because of how quickly I'm going through things., I encourage you guys to look over the answers to the open-ended questions included in the 2023 Commissioner Survey Results. Basically, for every one Commissioner saying one concern, there is a commissioner concerned about the exact opposite thing.

It really shows the diversity of opinions here. The ranked questions 1 through 16 are not particularly interesting. There hasn't been a large change from year to year in the past few years, and there is nothing to be concerned about there, in terms of our direction. Like in previous years, cooperation with federal partners, particularly the councils, is our lowest scoring question.

I believe last year people expressed that they would like the Council's to meet us in the middle more, and come to more of our meetings. Effective utilization and availability of Commission resources have consistently scored as our highest question, and open-ended question responses expressed thanks for staff knowledge and responsiveness.

The open-ended answers to questions 17 through 20 provide some unique insights, so again, I encourage you guys to look over those in your own time. Many Commissioners have expressed climate change as our biggest obstacle. One Commissioner talked about the need to revisit rebuilding programs, and gave southern New England lobster as an example.

A few mentioned not putting long term stock health before political pressure and interests within each state, influencing our management decisions. Others expressed concern about reliable data, especially facing increased uncertainty due to climate change. One of the interesting responses that was expressed in Question 19, a couple people mentioned this, was the need to create product for an audience that doesn't seek out engagement with our management process, and aren't necessarily trained fishery biologists.

Potentially creating different products for different audiences, with reduction in the usage of truncated acronyms, or fishery management terms, which may be a barriered entry for some people. A couple of people also asked for more frequent stock updates, and that is about what I am going to give you for now. Thank you.

CHAIR CIMINO: You know we had some discussions about the survey with Bob and Dan and I. We certainly still see value in this, I hope you all do as well. Are there any questions or comments for us on this? Go ahead, Ray.

MR. RAYMOND E. KANE: Yes, being how we're going to move forward with hybrid meetings, I had to talk to a constituent last night from my state. In the future if, as we go around the table and motions are made, we all know who we're talking to at the table, but people on the webinars, they say, well who made the motion? Well, Mike Luisi made the motion. Well, they don't know who Mike Luisi is, so when you present or you want to make a motion, I'm Ray Kane from Massachusetts, so people on the webinar know who made the motion. Just a thought.

MS. KERNS: Ray, so you want people to say what state they're from, because it does say on the webinar screen who had made the motion.

MR. KANE: Yes, I'm sorry, Toni, the states.

MS. KERNS: Okay, just clarifying. I think if we, every time someone speaks, they what state they're from. I think that will add to the length of the meeting, so maybe when people are making motions, they try to do that. But I think if we said it every single time that might get tricky.

CHAIR CIMINO: Lynn.

MS. LYNN FEGLEY: How about, I mean the list is there, but how about just a list with every webinar that lists the Commissioners and where they're from, and then they can reference easier.

CHAIR CIMINO: Yes, Pat.

MR. KELIHER: Well, I think Toni touched on it, right. When the motion goes up on the Board and it says who it is, you can put in parentheses the state they are from.

CHAIR CIMINO: Yes, for those of you that remember parliamentary training. They were kind of adamantly opposed to the idea that names were even attached to motions. But we certainly see the importance of that. I think one of the most important things is to

absolutely always have a motion on the board, so that we all know what we're dealing with.

I always appreciate when we get clarity on the intention of that motion. But I don't see any reason, because we already have names attached, to not also have the state that is represented in those motions. As we move forward, that is something that we can continue to discuss if there are any concerns there. Thanks, Ray. Any other comments on the survey? Okay, I'm not seeing any.

CONSIDER JURISDICTION REQUESTS FOR SPECIES DECLARED INTEREST

CHAIR CIMINO: I'm going to turn it over to Toni for Jurisdiction Request.

MS. KERNS: In your meeting materials you have a letter from the state of New York. New York is requesting to declare into the cobia fishery. This request is consistent with the Plan Review Team's recommendation, at least for the last year if not the last two or three years to New York.

For the past five years the occurrence of cobia in New York state waters has dramatically increased. Prior to 2019, New York rarely saw over 1,000 pounds, and then from 2019 to 2022, landings were over 1,000 pounds each, in some years reaching a high of over 5,000 pounds. Their landings have been at least 6.9; 2.6; and 2 percent of the coastwide commercial landings in 2020, 2021 and 2022 respectively. Their recreational encounters have also increased in recent years, and in 2020 and 2022 they were just shy of 3,000 pounds, and just over 4,000 pounds respectively. Prior to 2020, the last recorded recreational cobia catch in New York had occurred in 1994.

We are also seeing in the literature that suitable habitats for cobia is moving northward, and so based on the criteria in the Commission's guiding documents, New York would meet the guidelines of being added into a species fishery, but it is something that we need the Board to consider here today. I don't know if Marty has anything he wanted to add.

MR. MARTIN GARY: No, thanks, Toni, you characterized it pretty well. I may or may not have touched on it, but we are seeing them in the commercial landings too, albeit at a very low level. But this is another instance of a species that's moving, and of course, we've seen them move from the south up into the Virgina Capes, and now it's not uncommon for our fishermen to tell us they could actually target these fish. They get around pods of menhaden, so as Toni indicated, we would like to declare an interest into this fishery.

CHAIR CIMINO: We'll do this through a motion, Marty, if you don't mind. We have something we can bring up for you. Marty, would you mind?

MR. GARY: I would like to **move to add New York as a state with a declared interest, right, in the Cobia FMP.** Interstate.

CHAIR CIMINO: We'll make that edit and we have a second by Ray Kane from Massachusetts. There we are, we have a motion and a second. Any discussion on this? Any concerns from the Board? **Any objections to this motion? No objections, good. Motion passes by consent.** We're going to move on.

DISCUSS AQUACULTURE IN THE EXCLUSIVE ECONOMIC ZONE

CHAIR CIMINO: Next agenda item is a discussion on aquaculture in the EEZ

We have Danielle Blacklock with us here from NOAA Fisheries. Again, I appreciate the presentation, Danielle, and due to timing, I think that we will do our best to allow some questions, but hopefully you'll provide some contact information for folks to discuss this, or continue this discussion with you at another time as well. Thank you.

MS. DANIELLE BLACKLOCK: Absolutely, thank you, Mr. Chair. Hi everyone! My name is Danielle Blacklock, I'm the Director of Aquaculture within the NOAA Fisheries Service. I am excited to be here with you today. As many of you know, aquaculture is a great tool to be used for species conservation and habitat restoration, pharmaceutical, nutraceuticals,

fertilizer, et cetera, et cetera.

But I'm here to talk about the food aspect. See, I like food, and I'm a little concerned that we don't have enough of it. We already import 70 percent of the seafood we eat. As we do that, we have to think about the fact that all countries aren't created equal, when it comes to conservation laws and policies. As we import our seafood, we export our impact. More than half of the seafood we're importing is farmed, just in other places. Global demand for seafood is rising, so in this busy marketplace the competition is going to get hot. We're expected to have a global seafood supplied gap of 50 million tons in the next 25 years, and that's with Americans only eating 70 percent of what is recommended for nutrition. Americans are malnourished, and that is probably not something that you think about regularly. But with 42 percent of adults obese in this country, and a higher percentage than that prediabetic.

At the same time 12.8 percent of households are food insecure. We have both sides of the malnutrition coin to tackle, and seafood is a component of the solution for both. As a lean protein that is good for your mind and your heart, full of Omega 3s. The more that we can produce locally, to get into those homes at a price point they can afford, the better off we'll be. All of those challenges are before we talk about climate change, which I know all of you are living day to day, as stocks shift, production changes.

We have to figure out how to build a climate smart food system. We're not the only ones talking about seafood anymore. Aquaculture is a topic that is across the government right now. The Administration last year released the Ocean Climate Action Plan, you may have heard of that. One of the key actions for using the Ocean for climate resilience and adaptation is to expand U.S. aquaculture production.

The White House is saying that aquaculture is a part of our climate solution. Then that middle image there is NSM-16. If NSM is not part of your daily vernacular, that is National Security Memorandum. National Security Memorandum-16, which is on the strengthening the security and resilience of U.S. food and agriculture makes some big policy statements.

It says aquaculture is agriculture, and then it goes further to say that agriculture is designated as critical infrastructure of this nation. That means that our existing sea farmers are critical infrastructure. Not only are we looking to expand, but we also want to make sure our existing farms are resilient.

Then over to the right, a little bit of a creepy cover here. But this is the Department of Homeland Security, they put out a report on the threats to food and agricultural resources. In response to those threats, they have one of the six national priorities to build a resilient domestic food system to expand domestic aquaculture production.

My inbox has changed. The letters at the end of the e-mail addresses have changed. I get a lot of Ma'am; I would like to sit down with you and talk about the resilience of the U.S. aquaculture sector from .mil. Ma'am; I would like to run a tabletop exercise about how we're going to feed our country, and I would like you to be a part of it. HHS.

This is a bigger conversation and I'm here, so that is the framing of why I'm here to talk to you today. Why the Policy Board? Striped bass, I know that you have had a busy meeting on striped bass, and that yesterday was probably a hard day for many. I'm hoping that our conversation today can be seen as part of the solution set to some of the challenges that are happening.

Why do I want to talk about striped bass, when it is a pretty hot species on the east coast? Because it's really versatile, and we know how to do it. You can grow it in freshwater and saltwater. It has a large temperature range, as we know. It could be farmed up and down the east coast, and it also has multiple culture methods, so it is currently you can farm it in ponds on land, you can farm it in recirculating systems, freshwater/saltwater as I mentioned, and in net pens out in the ocean. Also, we're interested because there is an existing market. Creating a market is hard, and if there is an existing

marketplace, even though in some states and some places it is a seasonal marketplace.

What if we made that year-round, and created opportunity for what is also wildly harvested in that new marketplace. Then the final point is really the key one for me. In answering some of those .mil e-mails is about equal opportunity. What I mean by that is, as you guys know, it's illegal to fish, harvest, possess or retain striped bass in the Atlantic EEZ.

Then some states have a prohibition on sale. That doesn't affect the Gulf of Mexico, and we're actively receiving applications for Gulf of Mexico waters to farm Atlantic striped bass, not hybrid striped bass, Atlantic striped bass, and it's already happening. I mentioned that. Right now, there is pond farms in North Carolina, South Carolina and Texas.

Ohio is trying recirculating aquaculture that has been successful in research, now trying it commercially, and there are net pens in Mexico. I don't know if you all have heard of the company Pacifico. They just made an announcement last month that they are building the first Atlantic striped bass commercial hatchery. They expect to put 20,000 metric tons into our market place through this hatchery.

It is already in my Whole Foods and Wegmans, straight from Mexico. It's our technology. The U.S. figured it all out, and we've exported technology and now we're importing fish. In addition, farmed Atlantic striped bass is commanding a premium price, compared to wild harvested and farmed hybrid striped bass.

This is my last slide. We've been researching it for a long time. It started in 1874. I'm not going to give the whole history. But there have been dramatic improvements in our knowledge base, and that's why you are now seeing the commercial growth. We've sort of gone on the other side of the tipping point of it being economically and biologically viable.

Dramatic improvement in growth rates, due to selective breeding. This current generation is growing faster than hybrid striped bass, and it gets a premium price point, so of course people are interested. The full genome is sequenced, which opens up the ability to do further selective breeding and collection.

Multiple known sterilization methods, so should farms go in our waters, we have techniques to make sure that they can't reproduce with wild populations. There are known feeding protocols all the way through the life cycle, and there is an investment in a consortium of research called StriperHub.

The National Sea Grant Program has invested in this collaboration and consortium of researchers, and the goal of that effort is commercialization of both striped bass and hybrid striped bass. The research is happening, the farming is happening. What we have is an imbalance in what is accessible to interested farmers. In the Gulf of Mexico and the U.S. they can go in with applications, et cetera, et cetera, that are then thoroughly reviewed, of course. On the Atlantic coast there is not a legal pathway currently to do so. Now, I'm not sure whether that is on purpose or not. I don't know that when those rules were made, people were really thinking about farming Atlantic striped bass, because the science wasn't there, and now it is.

What I would like to know is, how I and my team can be helpful in building an understanding of where the science is, and what policy implications that might have. I am not a striped bass expert, and I can't sit here and answer quizzical questions about, well what is the status of this in striped bass. But I can get back to you.

If there are specific things that you're interested in learning more about, I am happy to put my team to work, and the suite of researchers that have built this industry that has been exported abroad. With that, I take any questions. I know you're short on time, and I hope to hear from you all. My e-mail address is my first name dot last name at NOAA dot gov, like everyone else's. I'm sorry it's not on the slide, but I'm happy to have a conversation separate from this too.

CHAIR CIMINO: Well, thank you very much, and I appreciate that, and I've been so far voting on our

time constraints, and yet we are actually doing pretty well. This is a very interesting topic for sure. One of the struggles for all of us here, I think, especially with the introduction of offshore wind, our competing uses in our oceans.

I know that is one topic of importance to all of us, and obviously striped bass is near and dear to many of us, and the poster child for the Commission. I'm going to open it up to the Board for any questions or comments for NOAA on this. I'll go to Roy, and John, it looks like maybe you as well. Okay, go ahead.

MR. ROY W. MILLER: Thank you, Danielle, for the presentation. I have been around long enough on this Commission to remember when we had some policies concerning striped bass stocking that were generated in the late 1980s and early 1990s, and particularly in regard to aquaculture products.

We took a stance in those days, no active stocking of hybrid striped bass, for instance, for fear of damage to the genetic authenticity of wild stocks. We were also concerned at the time about escapees from aquaculture, particularly when aquaculture was conducted in a coastal zone area, let alone net pens. That technology pretty much wasn't considered actively in the late 1980s, but obviously net pens present a real challenge, particularly when they are stationed offshore.

The chance of storm events and escapement is high. Then striped bass that are aquaculture products, with let's say limited genetic diversification would be loosed upon the environment, and mixing with natural stocks. There are those concerns, and we did consider them important enough in the late eighties or early nineties that as a Commission we took some positions on it, say. I just wanted to bring that to your attention.

CHAIR CIMINO: Thanks, Roy, we'll go to John and then Pat.

MR. JOHN CLARK: Thank you for the presentation, Danielle. You mentioned that this is already going on in Mexico. As you mentioned, so many of these aquaculture techniques have been developed here, but then they've moved to developing countries where the cost of production is so much less. I'm guessing with the water temperatures they probably grow faster there too. What are the economics of raising them, even in the Gulf, as you mentioned. What type of price point would they need to make this viable?

MS. BLACKLOCK: I think that we could do more analyses on that. What we're hearing is that by the price they're fetching now, which I would have to look at that. Actually, I have it in my notes. Fetching a price higher than hybrid striped bass, has made it now economically viable, because they are growing faster.

They are growing to market size in less than two years, which my understanding is that between the price point they're getting now, which I think is just over five dollars per pound, although when you buy it from the farm it's like, retail it's closer to $15.00 to $17.00, and how fast they are growing that it is now economically viable. Some studies have been done, but until we have a test case in the water we don't know for sure.

MR. CIMINO: I'm going to go to Pat Keliher and then Lynn.

MR. KELIHER: Danielle, good to see you again. Thanks for the presentation. This is the second time you've been before us and brought up the EEZ related issues. If I recall correctly, EEZ related issues for striped bass pertains to really on the recreational side, not being allowed to fish for or possess striped bass in the EEZ. But isn't that something that NOAA could simply change the rule for an exemption for aquaculture for possession of farm raised aquaculture?

I'm not sure if you're coming to us, because you have an ask of that, and you want that to come from the Commission. That is my first question, and my staff has also indicated that you and your folks might be developing a white paper around striped bass, and if that is the case, is that something you could provide the Policy Board or the Striped Bass Board?

MS. BLACKLOCK: We certainly could produce a white paper, if that is of interest. I think that with aquaculture, it's important to not be too heavy handed. We want to create opportunity and access, without creating undue fear. I think taking a measured approach is really important. Starting with our white paper or something like that, continuing the conversation with the Commission is something that in my perspective is the right path.

CHAIR CIMINO: Follow up.

MR. KELIHER: Yes, thank you. I appreciate the comment on not being too heavy handed, because this is one issue, as far as expanding other activities in the EEZ, you're going to displace existing users. They are going to potentially have a flora and fauna impacts or there is navigation impacts.

They are all the criteria that we have to use in Maine when we're dealing with any aquaculture, and they are highlighted with finfish aquaculture. Finfish aquaculture has become a lightning rod, whether it's in the water, or now even onshore. I appreciate the sentiment that you don't want to be heavy handed, and take a more measured approach. I think from a Commission standpoint, it's probably worth having more additional conversations around this, to understand where this is going. There certainly could be some benefits with this type of approach. The potential opposition is real, associated with this type of growth.

CHAIR CIMINO: We're going to Lynn and then Dan and then Eric online.

MS. FEGLEY: Thank you, Danielle, for your presentation. I have a lot of questions. I love the idea of a light keeper, and my two questions. One centers around, you know enforcement. We have people in our state who have gone to jail for malfeasance with striped bass tags, so you imagine we have the population of striped bass under a different enforcement. I would actually appreciate a little exploration into how that might work, and the other one is economic.

Also in my state, in the last two decades we've legalized, rewritten our laws to allow for oyster aquaculture, it's a burgeoning business in the state of Maryland. It's a wonderful thing, but it unleashed a lot of pretty ugly competition between the wild fishery and the aquaculture fishery. You know salmon, you see it in the market, you see that there is aquaculture salmon raised in Chili, or there is wild caught salmon from Alaska.

But you know you stated the market is established for striped bass, but I think that is primarily a wild caught market. I know that I would certainly get questions from fishermen in my state. We are the largest commercial fishery for striped bass, how this is going to impact their market. I would actually be a little bit interested in the economics of that if you're putting together a white paper. That is just some thoughts on that.

CHIAR CIMINO: I'll go to Dan.

MR. DANIEL McKIERNAN: A friend of mine in college once said, you learn something new every semester. One of the nuggets that I'm taking home after this meeting is the fact that the eel aquaculture in Maine is exceeding the United States wild harvest. If there are any parallels to this, the striped bass in the Chesapeake appear to be failing, at least for the last five years.

I think in some ways there is an inevitability, and certainly a market that is a potential to be developed here. I think where this takes place is probably the most controversial. Whether it be right over a state waters line, the EEZ, and the potential for escapement. But one of the things Danielle, that you raised, was state regulations that ban sale.

I'm curious about that, and I'm wondering if as an ASMFC initiative, staff could poll the states about their rules pertaining to aquaculture products and nonconforming fish, because I know that when New Hampshire had their cod and halibut aquaculture, you know we did everything we could to help get those products into the market, even though they were going to be undersized.

I think that we just need to modernize some of our regulations, as some of these products become farm raised. I guess I would ask Toni or Bob if this is something that we could look at among the states, to study the degree that states accommodate nonconforming fish, or shellfish that are farm raised, because I think that is sort of like next chapter here, in terms of allowing aquaculture to develop alongside wild fisheries.

CHAIR CIMINO: I'm going to go to Eric Reid online.

MR. ERIC REID: Thank you for your presentation. As far as things that are prohibited in the EEZ, Atlantic salmon possession is prohibited in the EEZ as well, and it's also prohibited for federally permitted vessels, no matter where they are. I would suggest anybody of interest would look at New England's action to accommodate salmon farming in the EEZ, about how we handled some of those.

My question is about competing interests or space in the ocean. Aquaculture is a competing interest, and offshore wind, the lease areas, those are competing interest for space as well. Those areas have the ability to do certain things other than offshore wind. My question is, who would regulate placement of aquaculture facilities within those areas?

MS. BLACKLOCK: I think that I can answer your question about who regulates space. For finfish aquaculture, which we're talking about, the permitting authorities are the Army Corp of Engineers, the EPA, and then NOAA plays a consultative role for endangered species, habitat, et cetera, et cetera.

The siting warehouse that finds farms space is inside of NOAA, it's in the Ocean Service. There are 30 scientists at the ready that help place, identify appropriate sites. The science is in NOAA, but the authority that permits the use of that space is the Army Corp of Engineers. Then the permitting agency for effluence and environmental impacts to water quality is EPA. Hopefully that was clear enough.

MR. REID: Follow up.

CHAIR CIMINO: Yes, go ahead, Eric.

MR. REID: I appreciate that, and I hope you're right. But in reality, the offshore wind lease areas are managed by BOEM. It's my experience that NOAA and everybody else is only in an advisory capacity that may or not be adhered to. I would like to find out for real what BOEM allows the offshore wind areas to do, other than offshore wind. They are all foreign companies, and they know a lot about farming a lot of things, so I don't need to know today, but I think it's something that we should address.

MS. BLACKLOCK: Sorry, just a clarification. I think I misunderstood originally. Are you talking about co-location with wind, specifically?

MR. REID: That is exactly what I'm talking about.

MS. BLACKLOCK: Got it, okay thank you, I took a note.

CHAIR CIMINO: I'm going to go to Erika and then Dave Sikorski online.

MS. ERIKA BURGESS: Thank you very much for this presentation. I'm in Florida, and we're paying attention to NOAAs development of that aquaculture opportunity areas. I'm very interested in seeing a white paper on this, and was wondering if we could also receive a copy of this presentation. Thank you.

CHAIR CIMINO: To Dave.

MR. DAVE SIKORSKI: This is an important conversation; I appreciate being able to participate. I would like to thank Ms. Fegley for her comments, from a Chesapeake perspective for sure, and highlight something that hasn't been raised today, and that's the forage needs of aquaculture fish, and how we have some various challenges that have already been raised in this committee today by some stakeholders, and continues to be a challenge, from a national security standpoint, exports, lots of different things, ecosystem balance, et cetera.

I think that's really important to consider, what are

these fish being fed, where the source is from. They've got to be really cognizant of robbing Peter to pay Paul, especially with the challenges that our commercial fisheries already face, and working waterfronts already face from so many angles.

I know that we will all keep that front of mind as we move forward with this. Just from a food resiliency program perspective. I would be remiss if I didn't mention the tremendous opportunity for wild caught protein here in the Chesapeake Bay with the invasive blue catfish. Many of us in this region have for years been bumping into the hurdles and the roadblocks and the challenges that exist.

As was said earlier, markets are hard to develop. But there is low hanging fruit, and of course there are some policy constraints that many in this region are concerned about. I think it's an all-hands-on deck effort if we really truly care about our domestic seafood sources, especially those that come from the Chesapeake Bay, and then fuel the coast, which of course we all are organized to manage. I really look forward to the white paper, and future conversations on this. Obviously, nothing happens in a vacuum, so thank you for bringing this to our attention today.

CHAIR CIMINO: If I may, I see Cheri's hand it up, but I'm going to editorialize here a bit myself. I'm always very skeptical by the numbers of imports, when we don't talk about the numbers of exports as well. You know I think if we remove the very cheaply raised shrimp and catfish that Americans are willing to pay for, and look at all of the exports from the fish that we do our absolute best to manage here as wild harvest that are being exported, as well as salmon that are caught here and then reimported.

I really do wonder about those numbers and those deficits of what we have available to us. I also worry about, you know competition. We've made some very tough choices just this week on keeping the spiny dogfish fishery alive here, on even with our great concerns for striped bass, we made a very difficult decision on where the commercial fishery should be.

Taking a reduction, doing our absolute empathic best to keep that fishery alive. To have these discussions on a competition, which our Commissioner Eric Reid, who is kind of our resident fishmonger, if you will allow me that, called it a niche fishery. I spent quite a few years in the Chesapeake Bay, and saw even in, you know the first weeks of that wild harvest fishery opening, prices of wild harvest striped bass going from $4.00, $4.50 a pound at the beginning of a week to $2.50 a pound by the end of the week. The thought of adding aquaculture fish to that, I have some concerns. I just want to put that out there, and I'll turn it over to Cheri.

MS. CHERI PATTERSON: New Hampshire has had to deal with some aquaculture offshore aquaculture permits, or inquiries. The thing that I continue to be concerned about with aquaculture, apart from what we've heard so far, is oftentimes these permits or these inquiries don't necessarily include the complete project.

What I mean by a complete project has to do with land-based infrastructure, in shoreside facilities. You did hear a little bit on the shoreside facility aspect. Because without those sorts of components to an aquaculture facility, it really can't be assessed appropriately. I find it very important that not just NOAA Fisheries, but also, and I've expressed this to the Army Corp, that a complete application needs to be provided for public comment during the process.

CHAIR CIMINO: Any other hands around the table? I don't see any online either. Thank you, Danielle, I appreciate the presentation and appreciate you providing that information. I'm sure you'll get some follow ups from some folks here and others listening online as well.

MS. KERNS: If there is any other information that those folks think of later on, if you e-mail me, I can pass that information along to Danielle.

MS. BLACKLOCK: Thank you very much.

REVIEW NOAA FISHERIES WHITE PAPER FOR AN INDUSTRY-BASED SURVEY

CHAIR CIMINO: With that we're going to move on to a Review from NOAA Fisheries on a white paper. Those of you that follow the Mid-Atlantic and New England Councils, you will be familiar with this. This white paper is on an industry-based survey, and we're going to turn it over to Kathryn Ford.

DR. KATHRYN FORD: Good morning, everybody, thank you for having me here today. My name is Kathryn Ford, I am the Population Ecosystem Monitoring and Analysis Division Director at the Northeast Fisheries Science Center. We call this Division PEMAD, and it includes our Ecosystems Surveys Branch, which is run by Peter Chase.

That branch is responsible for several major fishery independent surveys at the Northeast Fisheries Science Center, including the multispecies bottom trawl survey, which will be the focus of the talk today. Today I'm talking about an industry-based trawl survey white paper that we wrote this fall.

This work, I only put my name on the slide, there really wasn't enough room for everybody's names on here, because so many people helped with this project. But most notably, the Northeast Trawl Advisory Panel and a workgroup that that panel set up, helped with this project. For those who aren't familiar with NTAP, it's the joint Mid-Atlantic and New England Council Advisory Panel. I'm here today to present the white paper that was developed in response to the Council and Commission motions from September and October of 2023, to develop a white paper outlining an industry-based survey that is complementary to the spring and autumn bottom trawl survey that the Science Center runs. The Northeast Fisheries Science Center's multispecies bottom trawl survey, which I'll generally refer to as the BTS or the bottom trawl survey, is operated by the Science Center, and the purpose of this survey is to monitor ecosystem changes in trends and abundance distribution and life history for demersal fish.

We provide information for 63 stocks, and we collect more than 600 species on this survey. It's a shelf-scale survey that extends from Cape Lookout to Nova Scotia. The reason that we sample in Canadian waters is because this survey predates the Hague Line. Key reports that we inform with this data include the status of ecosystem report, stock assessment and climate assessment.

This data is used much more broadly than just the reporting requirements to the Northeast Fishery Science Center, and it is a substantial scientific undertaking that is globally recognized. We sample 60 days in the fall and 60 days in the spring for a total of 120 survey days per year. We use as our primary platform the Bigelow.

The Bigelow also has a sister ship called the Pisces, and both of these ships are run by the NOAA Line Office, OMAO, or Office of Marine and Aviation Operations. We're in NOAA National Marine Fisheries Service. At the Northeast Fisheries Science Center, OMAO is a separate line agency within NOAA.

NOAA OMAO also ran the predecessor vessel to the Bigelow, the Albatross IV, which operated this survey until 2008, and we did an extensive calibration between the two vessels, as well as new gear that was used by the Bigelow, before the Bigelow started in 2009. The trawl survey gear that is used was designed with the Northeast Trawl Advisory Panel, and similar gear is used by the Southern New England Mid-Atlantic NEAMAP Survey that is done by VIMS, as well as ChesMMAP and other regions are thinking of using this gear.

This program includes five biologists and three gear technicians, for a total of eight full time staff that focus on making sure that this survey is conducted each year, two seasons a year. When we're out on the boat, we're sailing with 15 scientific staff, and the survey staff that are the fulltime staff, also support a variety of research effort, including taxonomic studies, re-stratification analyses, catch efficiency research, and a variety of modernization projects.

This is an extremely valuable survey for both

fisheries and marine ecosystem monitoring, and a key goal in how we operate this survey is to provide consistency in our trawl performance. The reason why consistency is so important is to make sure we don't introduce uncertainty in what our scientific results are. We have protocols for this survey to be as consistent as we can, to compare catch results year over year.

We don't want to blame a gear change for a change in the catch, for example. The images on the left here show an example of inconsistent trawl performance. You can see the top image shows the trawl net right on the sea floor, and then the bottom image shows the trawl a little bit off the sea floor. That can result in different results, and the way we handle that is we use a tow evaluation program, and a variety of protocols to ensure that there is consistency. Any tows that exceed our standards will be re-towed. On the right-hand side, I'm showing an example of inconsistency in the time series. Inconsistency in the time period, you can see a gap between the orange line on the left and the green line on the right. This is just a theoretical dataset of humidity. This is just a random time series, not anything to do with fisheries.

But you can see that gap in between the two time periods. To fill that gap, you can use a variety of tools to extrapolate over that gap. But when you do that kind of work you introduce uncertainty. This isn't always a big problem, very data rich environment, we have excellent capabilities for creating extrapolation. But it can be especially a more data poor situation.

We do have a lot of tools to try and address any lack of consistency that we have. We use things like calibrations and catch efficiency studies. There are modeling advances that we're using. You can even start a new time series and have a brand-new dataset that could go into understanding a particular question.

But all of these types of activities to address inconsistency represent various tradeoff, either in precision or accuracy of the data, could involve slowing down the timeline of the analyses and the availability of the data, the complexity of the analyses. In general, the less data massaging that you have to do, after collecting a dataset the better.

You really want to make sure that you're as consistent as possible in these long timer periods. One of the things that can affect gear performance, especially for trawl surveys, is the platform itself. The way we've been doing this for 60 years, is to rely on a single vessel, and be as consistent as we can with the vessel itself, as well as all of the trawl protocols that we use.

In recent years we've become concerned about the reliability of the Bigelow vessel. This graph here shows our spring survey in a solid line, and our fall survey in the dotted line. The first half of the survey years, 2009 to about 2015, we had very good survey performance. A good survey year for us, we target about 370 stations. We typically accomplish around 350 stations.

You see that we have very stable performance up until about 2017. In 2017, there was mechanical failure. The Pisces, a sister ship was brought in to complete the survey. You can also see the clear impact of the COVID year in 2020. We actually got out in the spring in March of 2020, but then we were brought in off the water once COVID really got going, and then in the fall we were off the water for the whole season.

Then last spring, spring of 2023, there were mechanical issues, a variety of issues with the vessel, and it got stuck in drydock for a couple of months. Over the history of the Bigelow time series, we've done 30 surveys, and 30 percent of them have less than 320 stations. It does look like we're seeing less reliable performance in the more recent years.

We're expecting more platform impacts, so we have the unintended lost sea days that we've been addressing. There is also increasing challenges, potentially with government shutdowns that could occur really now at any time of the year, it seems like. We also have offshore wind that we're facing, the Bigelow vessel will not be able to operate the trawl gear inside offshore wind energy areas. There is a

midlife refit that is coming up in September of 2027. We're in the process right now of making sure that the Pices will be available during that timeframe, but we'll be down to that single vessel during that timeframe. Then ultimately, we're going to have end of life in another 20 or 30 years for the Bigelow. Especially after last springs loss of two months of sampling, NTAP formed a working group to develop a contingency plan for the Bigelow.

This working group kicked off in September of 2023, and the term of reference is to describe vessel platforms that can support completing the Northeast Fishery Science Center spring and fall bottom trawl survey, when the Bigelow is unavailable. There are four major options that we're looking at right now.

The first is the Pisces, the second is a Northeast Fisheries Science Center vessel that is calibrated to the Bigelow. Right now, the Science Center operates the Gloria Michelle vessel, and we're interested in procuring a larger vessel that could work further offshore and tow the gear that we tow on the Bigelow.

The third option is an industry-based vessel calibrated to the Bigelow, and the fourth option is an industry-based survey that is not calibrated to the Bigelow. This would be a parallel separate time series entirely. That is the option that the motion addresses, is this fourth option under this contingency plan that we're building.

The goals for this project span three major thematic areas. The first is providing science for management. Here we want to improve our data products by improving our survey data consistency. For operations, I'm referring to our survey operations, the activities that we take to create this data. Our main goal under our survey operations is to be consistent.

We want to add resilience here to the existing multispecies bottom trawl survey, so we can continue to sample each season the maximum number of stations to get into that 350-station range. Then a third thematic area is industry involvement. We think it's critical for our science to be informed by industry's perspective.

We want to make sure that we're being fully transparent about the activities that we're undertaking. A goal is to improve trust through collaboration. In building the industry-based survey white paper, the IBS white paper, we started back in September after the, we actually started, we have an outline together prior to the motions that the Councils and the Commission addressed.

In the last several months we've had two drafts that were reviewed. The first draft was reviewed internally and by the Northeast Trawl Advisory Panel's working group. Then we had a second draft that was also reviewed internally by the working group, and by external reviewers that included representatives from NOAA Headquarters.

Our National Survey Coordinator took a look at this. We had reviewers from the Northwest Fishery Science Center and the Alaska Fishery Science Center that both run industry-based trawl surveys on the west coast. We had input from several other folks that are associated with this project, and very interested in this project. We also held three separate meetings, two of them were with the NTAP Working Group, and one of them was with the Northeast Fisheries Science Center's Population Dynamics Branch that conducts our assessment work. What we have described in this white paper is to use the same design as the bottom trawl survey. We would use the same geographic range, season, strata and station allocation as we currently use. We would aim for 24-hour sampling, and determine if 12 hours per vessel is feasible.

This is a really important determination. We do sample 24 hours right now, and we do have species that exhibit various diurnal patterns. We've explored how we would do 12-hour surveys that would span the dawn and dusk periods. This is something that needs additional conversation and exploration for how to make that work, and if we even need to make that work.

For gear, the plan is to use the same gear as the Science Center Survey, but provide flexibility on doors, again really focusing on making sure that trawl performance is consistent. We also allowed flexibility on no auto trawl, based on industry feedback. We would include net mensuration for the tow evaluation for all of the gear packages.

Sampling would include providing station data, water quality data, all of the gear performance and net spread data. For catch we would sample total number of biomass composition, age, sex, maturity, and stomach content, at least preserving stomach contents if they can't be processed on the ship. Then we need to determine additional biological sampling of catch during the pilot survey, which I'll explain in just a second.

The vessels would need to be of an appropriate length and horsepower to sample in open ocean conditions, and tow gear at 3 knots for 20 minutes. We would need sufficient winch capabilities for towing the standardized gear package across the survey area. We would need necessary deck space for processing stations and catch processing.

We're planning capacity for CTD casts to 200 fathoms. We're considering placement of the CTD on the trawl net, as they do in the Northwest Fisheries Science Center. We would need appropriate vessel crew for the length of the sampling day, whether it be 12 or 24 hours. Space for one spare net at least.

Depending on the length of the legs, if we do have vessels that are doing longer legs, more spare nets may be necessary, so more space would be needed for that kind of survey. It would be capable of using the appropriate doors to maintain the net performance, and if 24-hour operations are being done, the appropriate number of bunks for the vessel and science crews would be necessary.

Data management is an important consideration throughout this endeavor. We rely right now on electronic data collection and management, and we would plan on continuing that. The key element here is making sure that this data is available to stock assessments relatively quickly. We try to get it to them as soon as we can, and aim for four weeks after a survey concludes, and we would try to match that performance with this survey as well.

With program management, the way we sketched this out in this framework was as a third party operated survey. But there are other options that are described here. This is an important consideration, in terms of how the program gets built out. The way we started was with kind of a simpler conceptual program management plan, which is to pass any funding through to a third party, and the third party would run the survey. This is similar to how the Southern New England/Mid-Atlantic NEAMAP survey is done, and the Gulf of Maine NEAMAP survey is done. It's the Maine/New Hampshire NEAMAP Survey.

Some of the key differences between the industry-based survey and the bottom trawl survey that we're doing on the Bigelow, is that the way we've described it now is that program management relies on a third party. We didn't build it up as a separate survey team within the Northeast Fisheries Science Center, we did this pass-through method.

There would be potential use of multiple vessels. Some folks did say that there are large enough vessels on the eastern seaboard to do what the Bigelow does. But we're opening the door to the possibility of multiple vessels. Potential use of different doors is a difference. Smaller wire diameter came up as a different potential difference.

The bottom trawl survey uses a 1-inch wire and the fleet in this region typically has 7/8-inch wire. It is possible that wire is provided to the survey, and we would stick with the one inch, but we could also use the wire on the vessels that is already there, the 7/8 inch. No auto trawls were requested in the design.

This is the way the Alaska Fisheries Science Center does its survey right now, they don't rely on auto trawl, they rely on protocols to ensure wire out consistency. But they are trying to move away from that, they want to use auto trawls, because it improves net consistency, the trawl performance.

We cannot establish the specific towing protocols at this time, because they are really dependent on the vessels, and some other specifics of how the vessels are set up. That would need to be determined during a pilot study. Also, there was a fair bit of back and forth about biological sampling. The industry requested a minimum viable biological sampling protocol to optimize or maximize the number of vessels that might be able to conduct this type of survey.

However, a lot of the scientists who are doing industry-based surveys really thing that full biological sampling can be accommodated on industry vessels. This is another area for exploration during a pilot study. Plankton sampling is also to be determined. The bottom trawl survey does do bongo towing, and it's to be determined if we could handle that on industry-based vessels, and what the impact on timing would be for the survey itself.

We simplified it by removing acoustic sampling that adds a fair bit of electronics and data processing, data storage and handling. We took out the acoustic sampling for now, and I alluded to complexities of the 12- and 24-hour day accommodation. That is something else that needs further exploration.

Back to the primary goals that we're trying to meet. How does the IBS address these goals? In providing science for management, the key scientific value is increasing resilience of our primary time series for many assessments. The operations goal will be able to create a replacement in the event that the Bigelow can't survey, and with industry involvement, we're working with industry to provide significant input into the design and operations. It is possible that industry vessels could be used as platforms for this survey. Our next steps are to finish the contingency plan. We want to flesh out those first three options of the contingency plan. For review, Option Number 1 is using Pisces that is the sister ship to the Bigelow.

We want to use Pisces as a backup, it's not ready to trawl right now, it needs some improvements. We want to make sure that that happens as soon as possible. Then Options Number 2 and 3 are looking at other vessel platforms that would be calibrated to the Bigelow in some manner. We want to flesh out those options and see what the pros and cons of each of those are.

We also need to start to connect this with offshore wind. With offshore wind we have a few different projects underway right now, looking at the potential for mitigating our survey impacts. The Bigelow will not be able to sample inside of wind farms, and we're looking right now, evaluating what those impacts are going to be, what species are most affected by that, and what are the options for replacing those stations?

Then I'm thinking that we can plan out a pilot survey in the next 6 to 9 months that could be on the water in FY2025. This might be giving some people that are on this call a little bit of a heart attack. But I think it's possible, at least on a relatively small scale, to be able to have a pilot on the water in another year and a half or so.

That is dependent on an awful lot of variables, but I think it is a reasonable goal to strive for. That was it, thank you all for your time, and I'm happy to answer any questions if there is time, but certainly feel free to reach out to me if you have any questions, or want any additional information about what we're up to.

MS. KERNS: Thank you, Kathryn. We are going to go ahead with questions for Kathryn, and then we can go into some discussion if we want to do anything following up. Shanna, and then Jason.

MS. SHANNA MADSEN: Thank you, Kathryn, for your presentation. I think this is a really important topic, and I'm glad to see some progress being made here and the options that are available on the table. I have a few comments that I'll save for later when we get into comment time.

But I did have some questions regarding the pilot survey, and sort of what you are envisioning for that. It seems like you have four options on the table right now. Are you thinking that the 2025 pilot survey is just going to encompass one of those options, or that you might be testing several during that time period?

DR. FORD: Yes, thank you for the question. The pilot survey would be mostly focused on either Options 3 or 4. Option 1 is the Pisces, which is the sister ship. We don't need to test that. We have used the Pisces in the past as a fill in for the Bigelow, and so that won't need testing. The Northeast Fisheries Science Center is in the process of considering procuring a larger vessel, and we would need to determine whether or not we want to calibrate that vessel to the Bigelow survey or not. That would be an outstanding question. But really what I'm thinking about for a pilot survey, and again this is very early days in this line of thinking. Somewhere in addressing either Option 3, which is another platform calibrated to the Bigelow, or Option 4, which would be platform not calibrated to the Bigelow, so it would be a separate time series.

That Option 4 that we addressed in the white paper, may be most consistent with how we're going to be mitigating offshore wind. We really need to advance our progress on that conversation, and start to think about what is the regional need to do a multispecies bottom trawl survey inside of offshore windfarms, and how would we design that survey? How would we conduct that survey, and how could that serve in any sort of capacity as a backup for the Bigelow?

MS. KERNS: Thank you, any follow up, Shanna? Jason.

DR. JASON McNAMEE: Thanks, Kathryn, that was great. I really appreciated the presentation. A couple of just quick questions from me that I didn't see covered. But I'm thinking you guys probably at least talked about. Maybe I'll start by saying, this is fantastic. I remember the first time this concept came up that I was aware of, was under Bill Carp, and then I remember talking to John Hare about it as well, as he kind of came into the leadership role over at Woods Hole.

It's great to see how this has kind of kept going, and it's really far along in its evolution at this point. One of the ideas that came up in those discussions was this notion of efficiency and potential cost savings. Have you guys talked about that at all? Maybe you're not quite there yet, and you need to hammer out the logistics a little more. But just wondering if this idea of efficiency and cost savings has come up in the context of the IBS.

DR. FORD: Yes, that is a great question, and it has come up. One of the items, one of the first things we looked at was comparing the cost of the West Coast Surveys, which are done using multiple industry-based vessels. What is the budget for say, the Gulf of Alaska survey compared to the budget for the Northeast Fisheries Science Center Survey Team?

They are vastly different, because we receive sea days from OMAO. We don't pay the ship time at the Northeast Fisheries Science Center level. In terms of our specific budget inside of the Science Center, this whole survey, this 120 days on the water per year is the out-of-pocket cost for less than a million dollars, they are half a million dollars, it's $250,000.00 a season.

It's incredibly cost effective. However, if you start to look at how much do those individual sea days cost, and if the Science Center was given that money to do with whatever it wanted to, that is kind of a different perspective. We're starting to look at that now, and the initial price that we got on a sea day for the Bigelow is $56,000.00.

In this white paper, one of the initial pieces of material that the Working Group was working with was a cost estimate. We had a spread sheet; we were trying to piece things together. But it got to the point where we had enough uncertainty that we couldn't really build that cost estimate that well. There are a lot of upfront costs, and then you start to get into how many vessels are you going to be using. That really starts to explode the cost, in terms of staffing, complexity of managing the program, the amount of gear that is needed for the program. It makes a lot more sense to kind of ease into the like, okay what would a smaller scale study look like to explore the types of vessels and the actual capacity of the vessel?

How many vessels would we end up wanting to hire in the end? Then what are those day rates looking like? We have seen day rates for commercial vessels

that we use on other surveys just skyrocketing. I mean in some cases almost doubling over a couple of years. I think there is a lot left there to really look at, in terms of the costing. I think the narrative is that it's going to be cheaper to use industry-based vessels. But I don't think we know enough yet to definitively answer that.

CHAIR CIMINO: Any other questions? John.

MR. CLARK: Just curious, I mean it seems like you are anticipating the Bigelow to continue to have problems. Did the previous vessel have anywhere near these number of missed days, or is this boat just extremely problematic for some reason?

MS. FORD: I don't know the answer to that question. I haven't looked at the Albatross performance. If there is anybody online who knows the answer to that off the top of their head, please raise your hand. What we're doing is we're being precautionary. The vessel itself, I wouldn't characterize it as being unusually problematic. I think that is probably unfair. But overall, there are challenges with getting repairs done on time, more from some of the contracting and program management end of the spectrum.

Some of these challenges are very difficult to resolve. You know it's not like we can just point the finger at OMAO and say, oh, they messed up. It's not that simple. We're really approaching this from the, you know we want to be as precautionary as possible. We can't necessarily read the tea leaves too far into the future, but we want to know what we're going to do if we have to pull that trigger.

CHAIR CIMINO: Pat.

MR. KELIHER: Thank you, Kathryn for that presentation. I mean it seems like this white paper is identifying ways to move in a good direction. But I just can't stress enough the need for the direction of industry-based surveys and using industry platforms. The transparency that comes along with that, the buy-in that comes along with that is certainly recognized as a great benefit, with the Maine/New Hampshire trawl survey.

That slide that you showed on performance to me is incredibly problematic. The life span of that vessel in the future is also being called into question. From Maine's perspective, we continue to stress the need to move in the direction of those industry-based surveys, and I understand the budget constraints and concerns. But if that is what the problem potentially is, then let's talk about that and how we potentially rectify those problems as well.
CHAIR CIMINO: Shanna.

MS. MADSEN: Since we're moving into comments I'll go ahead and echo what Pat just said. I found that when I was reading this paper it sounded very hypothetical, like a hypothetical industry-based survey. Working as the NEAMAP Coordinator over a decade ago, we were considering using NEAMAP as the platform for an industry-based survey, which would completely fulfill Options 3 and 4 within this document.

We have in my mind a pretty apparent solution, and I think that what I would like to see from the Center is less of a hypothetical white paper on how to utilize an industry-based survey, and more specific to utilizing the NEAMAP platform that we already have built, and has been up and running for 18 years.

You know there are a lot of comments in here regarding whether or not biological sampling could be conducted on these commercial fishing boats. I think both NEAMAPs have proved that that is incredibly possible. I think I would like to see as we move into the future, the development of a white paper that is specifically addresses the use of NEAMAP surveys, to fill this hole that we're talking about here.

CHAIR CIMINO: Others around the room, as Shanna pointed out, we're kind of moving into comments. I don't see any other hands around the table. Eric, we'll go to you in a minute. I also want to echo a lot of the comments that have been made, and Kathryn, I really want to thank you for this.

I think one of the last things that we as managers want to discuss is adding uncertainty, the un-comfort of that. I want to make an IBS joke for Shanna's sake.

I'll just say that we need to go into this with eyes wide open, and this dialogue, I think is very important. I don't see any other hands around the table, so I want to go to Eric Reid. Go ahead, Eric.

MR. REID: Thank you, Dr. Ford, and the teams which include NTAP and the NTAP Working Group, which I'm a member. You really did a fabulous job in laying out the document and all the options that are available around the table. It's quite a bit of information at this point to digest today, and of course New England and the Mid-Atlantic will also get a presentation over the next two weeks.

But following along on the discussion by my fellow Commissioners, the next steps for all three of our management bodies, our partners are important to address, and if it pleases the Chair, whenever you're ready I have a motion if it's appropriate, or a notion of a motion that we can beat it up and see what happens, Joe.

CHAIR CIMINO: Yes, thanks, Eric, we have it up, so why don't you go ahead and then we'll see if we get a seconder.

MR. REID: Okay, thank you. My name is Eric Reid; I'm a Legislative Proxy from the state of Rhode Island, just so everybody knows who I am. I **move to recommend to task NTAP and the NTAP Industry Based Survey (IBS) Working Group to develop an outline detailing a proposal to conduct an IBS Pilot Program to test the viability of the program as presented in the "Proposed Plan for a Novel Industry Based Bottom Trawl Survey" whitepaper with a particular focus on adapting Section 2 "Survey Design Elements" to current Industry platform capabilities. Delivery date for the outline should be in time for further discussion at the Spring 2024 meeting cycle for the Commission and both the Mid-Atlantic and New England Councils in April, 2024**. I have some additional rationale if I get a second. There is the motion.

CHAIR CIMINO: Pat, is that a second? We have a second from Pat Keliher from Maine. Go ahead, Eric.

MR. REID: I mean at this point I think it is critical, to maintain momentum going forward. You know the current bottom trawl survey is the cornerstone that informs management decisions for all that we do for the entire fishing community. An IBS complementary to the Bigelow is a necessity, not a luxury at this point, given the recent performance of the federal survey and future concerns as well.

I do know that this is an aggressive, maybe overly aggressive timeline. But it certainly, you know like the lawyers say, time is of the essence. Once we get an outline from NTAP, to Mr. Keliher's point, that is when we're going to have to start working on funding options. That is my rationale, I'm happy to answer any questions as well, but thanks again to Dr. Ford and her teams.

CHAIR CIMINO: Great, thanks, Eric. We have a motion here, discussion on the motion. Well, actually, Pat, do you have anything you want to add. Then I have a hand from Shanna.

MR. KELIHER: No, Eric Reid said it very well. I don't have anything else to add.

CHAIR CIMINO: Go ahead, Shanna.

MS. MADSEN: I was wondering if Eric would entertain a small amendment to the motion, which I can put forward, unless he's okay with me making a friendly on this. I would like to see at the end of to current industry platform capabilities the words, with emphasis on existing platforms such as NEAMAP.

MR. REID: I'm okay with that, NEAMAP is protocol, the vessel is the Darana R. To me it's a slightly different thing. You know the Darana R. is an industry platform, it's got a lot of experience, and I would expect that that vessel is the poster child for what we would look for. But you want to put it in there, Shanna, that is fine with me. But I don't really know if it's necessary or not. I'll leave that up to you.

CHAIR CIMINO: Shanna, I mean I think with this discussion that notion is part of the record. If you're all right with that then leaving the motion as is, and having that discussion. Okay good, thank you. Any

other discussion on this motion? Not seeing any hands. Jon Hare, go ahead, please.

DR. JON HARE: Thank you very much for the opportunity. I appreciate the intent of this motion. I think the timeframe, and Mr. Reid you said it could be overly aggressive. I think the timeframe is too short to put something together of the quality that we want, and then have the review process, have people look at it and make sure we've got something together that everyone is reasonably happy with by April. I think I would question the timing. Then the other thing too, just as a process. Maybe this is a better motion for New England or Mid-Atlantic, since the Trawl Advisory Panel sort of reports to those two groups. Just those two points, and then just a correction. I think it's the NTAP Bigelow Contingencies Working Group, just to get the language correct. But thank you for the opportunity for the comment.

CHAIR CIMINO: Just trying to think this through. You know we were careful to list this as a recommendation, as this Board doesn't feel that we can task NTAP. As far as our hope for timing versus what we expect. I'm not sure how much we need to kind of lay that out, or excuse me, perfect the wording there. I guess I'll open that up to Eric or others, since this is before the Board now. We do want to give this another shot at John's ideas and some corrections. I see Jeff Kaelin's hand.

MR. JEFF KAELIN: As a member of the NTAP ten years ago, when I was a Mid-Atlantic Council member, this has taken a particularly long time to develop and come to this point. I appreciate your presentation today, Kathryn. But I was disappointed to see that the pilot project may or may not get on the water sometime between now and 2025. I don't see why that year needs to pass, frankly, after all this time.

I do think this is an appropriate motion for the Board, to demonstrate our support for the flexibility that we need to make sure that the surveys are going to give us the data that we need to make reasonable decisions. I think, in all due respect to Dr. Hare, I think this is absolutely important today for us to support, and I would leave the April, 2024 date in there, because it always helps to have a fire lit under certain initiatives, to make sure that they get done as quickly as possible. I'm speaking in support of the motion.

CHAIR CIMINO: Any others? Shanna.

MS. MADSEN: Just ditto. I think Jeff said it beautifully, and that was kind of my point with some of my comments. We've been talking about this for a very, very long time, and we have determined that it's critical for a very long time. I'm speaking in support of this motion as well.

CHAIR CIMINO: Eric.

MR. REID: I appreciate Dr. Hare's comments and correcting my characterization of what the working group is. That's fine with me. Whatever the appropriate name is, I'm fine with that. I do think the timeline is appropriate. If it should read the delivery date for a draft outline is less stressful, I still want to move this thing forward.

As far as the ASMFCs position, ASMFC is an equal member with the Mid-Atlantic Council and the New England Council on NTAP. The Mid-Atlantic is certainly the lead, you know, and I don't know exactly what the protocol is. But ASMFC is well within its rights to make a suggestion to our other two management partners on NTAP for a draft or whatever. I don't think ASMFC is a back seat here.

CHAIR CIMINO: No, and I appreciate that, Eric. I think our thinking here, Toni and I is that is a discussion for all three entities together. With all of that said, I would like to call this and I'm actually going to just ask, **are there any objections to this motion? Okay, I'm not seeing any so this motion passes by consent**. John, your hand is still up, do you have a comment?

DR. HARE: No, sorry, Mr. Chair.

CHAIR CIMINO: I apologize to Jason McNamee, but I do want to go back to Jay, I missed him earlier. Go ahead, Jay.

DR. McNAMEE: Yes, that was good. Sorry, I'm glad we kind of got through the motion there. I wanted to offer just a couple of more general comments, and these are just for consideration for Kathryn and the team that was kind of working on this. One thing I was thinking about, given the unique nature of how this will be set up with a third-party vendor, that kind of orchestrates the whole thing.

You might want to think about different governance structure models. Maybe it's just the simplest of, you know it's NOAA, and then they have their vendor, you know the contract that they hire for us, and that is one model. Another might be to involve the regional councils and the Commission within the group that kind of manages it.

It would be the vendor, NOAA, and then New England, Mid-Atlantic, South Atlantic and the Commission. Maybe there are other folks that should be in there too, but just thinking about the governance structure that might want to be thought about a little bit. Then the final thing I wanted to offer was about the idea of the different versions of how to set up the transition, I guess I'll call it.

There was a couple of options that were offered. Option 3 was kind of, it reminded me of the Albatross to Bigelow type approach. Then 4 is just nope, it's just going to be a new survey and once it gets enough years, we'll be able to move forward with it. I was thinking about the transition that we made from the Albatross to Bigelow, and the amount of effort that went in, and the great science that occurred on that calibration.

It served a really useful purpose for an interim period of time. But what has happened snice then is we've; I think all of the assessments that I've been associated with at least, have now adopted, you know Albatross is one survey, Bigelow is the second survey. They are kind of now separate, they developed their own queues and all of that stuff within the assessment.

I was wondering if there might be some hybrid option between Options 3 and 4, with regard to this where you do some level of calibration work, but probably don't invest the amount of effort and time that you did with the Albatross, the Bigelow. One, so you've got something that can get you through a couple of years, while the time series for the new IBS builds up.

But now with anticipation that you're going to be calibrating these things forever. Just some thoughts for consideration. Maybe folk have talked about this, and maybe I'm way off base, but I thought I would offer them. Thank you.

CHAIR CIMINO: I think that covers that agenda item. Next up on the agenda is noncompliance findings, we don't have any, fortunately.

OTHER BUSINESS

CHAIR CIMINO: So, we'll move into Other Business. I would like to start with Pat, you had an item for us.

AMERICAN LOBSTER PROCESS ISSUE

MR. KELIHER: Yesterday at the Lobster Management Board, we took up the issues of the Mitchell Provisions as they relate to our current FMP for minimum size. Then during those conversations, I raised the issue of, where does that leave us with the maximum size, so we amended the motion and included that language. Staff has since reviewed that and reviewed the FMP, and it would take an amendment instead of an addendum in order to address that.

I think we have to decouple that, and what I would recommend is we decouple the maximum piece from that motion, it would revert back to the original motion the way it was made, and then we continue to revisit this issue at a future Board meeting. I don't want to lose track of this conversation, but I would be hesitant to ask for an amendment for just that small piece. There is some other work, our Area 2 and 3, trap reductions. Maybe we just hold that maximum size conversation off, and address it at a later date.

CHAIR CIMINO: Thanks, Pat, this is important. I think Pat covered that very well, but you know there was an intent by the Lobster Board, and within that

motion we now realize that part of that would have to be done differently. That discussion on the amendment process will have to happen at a later date for that Board.

Since we do have Policy Board here, I'll just open it up if there are any questions or concerns with what we're thinking here. I don't see any. Good, thanks, Pat, I appreciate that, for you covering that for us. We have one other item, and then I would like to bring it to ACCSP staff. But I'm going to go to Chris Wright on the Horseshoe crab petition. Chris, if you're still there.

HORSESHOE CRAB ESA PETITION

MR. WRIGHT: We received a petition from Friends of Animals to list Atlantic Horseshoe Crab as threatened or endangered under the Endangered Species Act back on December 21, 2023. The petition also requested that critical habitat be designated for the species in the Atlantic waters. We're currently reviewing the petition under Section 4 of the ESA, to determine whether or not the petition presents a substantial scientific or commercial information threshold.

Once we conclude that we'll announce a finding after 90 days, which is approximately March 19, whether or not we accept it and will move forward, or whether or not we'll reject it. We just wanted to let folks know about that. I did send the petition to Bob and Toni, so if you want a copy it. I believe it's also posted on their website, Friends of Animals, and I think it should be posted on our website soon. But our point of contact is Jean Higgins at our Greater Atlantic Office, so if you have questions, you can ask Jean about the process or where we are in that.

CHAIR CIMINO: Thanks, Chris, I mean this impacts a lot of us. We'll make sure that we get that petition out to all Commissioners. I know some of us have received that already, but we'll make sure that through Bob, we send that out to everyone. Thanks again.

MR. WRIGHT: Great, thank you.

MRIP QUERIES

CHAIR CIMINO: I want to get Geoff White a minute here to talk about some ACCSP stuff on what they've done, as far as the MRIP queries.

MR. GEOFF WHITE: I appreciate the momentary, the ability to give you guys a brief update. Earlier this week MRIP did post an e-mail out that they are going to be presenting the wave-based data again on their website. I know that is exciting news for those doing assessment and management that have access to that data on their website.

We've been, of course, partnering and working with MRIP over the years for both state conduct of some of the APAIS and FHS surveys, and also being ACCSP is a partnership of 23 agencies to help you guys out. We've been working over several months to update the ACCSP public and log-in data warehouse, relative to the recreational queries. We've added in the cumulative and fishing year options that MRIP began presenting last year, and we've been able to maintain the wave level data through the ACCSP website of the MRIP estimates.

That has been adjusted and it's available today via the ACCSP website, so if you're interested or your staff are interested, please go ahead and let them know that that is there. There will be some outreach coming out in the coming weeks to expand on that information, but thank you for your time.

CHAIR CIMINO: Gee, Geoff, I think that's great and I appreciate that. Yes, obviously it was, I think very important news to see that, and rather exciting for some of us. I mean take an example like striped bass, where we put in emergency regulations midyear, and not knowing at that wave level what was actually happening is very challenging.

Exciting news, I appreciate that. Thank you.

ADJOURNMENT

CHAIR CIMINO: With that, unless there are any other items to come before this Board, I think we can adjourn. I'll take a motion for that. I see Pat and then Cheri as a second. We are adjourned.

(Whereupon the meeting adjourned at10:35 a.m. on
Thursday, January 25, 2024)

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Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: March 28, 2024

To: Council

From: Hannah Hart, Staff

Subject: Northeast Trawl Advisory Panel Progress Report for the Industry-Based Survey Pilot Project

On Wednesday, April 10, 2024, the Mid-Atlantic Fishery Management Council (Council) will receive a progress report on the draft Industry-Based Survey Pilot Project. Background information and a list of materials are provided below for the Council's discussion of this agenda item.

Background

At the October 2023 Council meeting, Northeast Fisheries Science Center (NEFSC) staff provided an update on recent performance of federal fishery independent surveys in the Northeast region. The presentation highlighted recent challenges with the multispecies bottom trawl survey (BTS) conducted aboard the NOAA ship *Henry B. Bigelow*. The BTS monitors fishery stock abundance and distribution on the Northwest Atlantic continental shelf from Cape Lookout, North Carolina to the Scotian Shelf and is one of the longest fishery-independent time series in the world. In recent years the survey has experienced losses of survey days and/or reduced sampling coverage due to vessel mechanical issues, staffing shortages, weather, and other challenges. Most notably, the spring 2023 survey lost 43 of 60 sea days and was only able to sample 70 of the 377 planned stations due to staffing shortages and vessel mechanical issues.

During the October presentation to the Council, NEFSC staff described efforts underway to develop four potential options for contingencies in the event the Bigelow is not available for the BTS. The four options include using 1) the Bigelow's sister ship, the *Pisces*, as a back-up ship, 2) a different NEFSC vessel calibrated to the Bigelow, 3) an industry vessel calibrated to the Bigelow, and 4) a parallel industry-based survey that operates complementary to the Bigelow. As a result of the presentation and subsequent discussion, the Council passed a motion requesting that the NEFSC develop a white paper further outlining option 4, an industry-based survey that is complementary to the BTS. The New England Council had passed an identical motion during their meeting the month prior.

In response to the Councils' requests, the NEFSC worked with a newly formed working group of the Northeast Trawl Advisory Panel's (NTAP) to develop a white paper titled "Draft Proposed Plan for a Novel Industry-Based Multispecies Bottom Trawl Survey on the Northeast U.S. Continental Shelf." The white paper was presented to the New England and Mid-Atlantic Councils at their January and February 2024 meetings, respectively. After reviewing the white

paper, both Councils passed motions recommending that NTAP develop a pilot project to test the viability of an industry-based survey as described in the white paper and provide a progress report of the draft pilot project to the Council at the April 2024 meeting.

The full NTAP met after the February Council meeting on February 8, 2024, and the NTAP Bigelow Contingency Plan working group met on February 29, 2024, to continue its discussion of the Industry-Based Survey Pilot Project. The following is a summary of recommendations resulting from those discussions:

- Survey should be able to operate in wind farms.
- Develop a list of data elements collected in the trawl survey, identify which elements are sensitive to standardization.
- Develop a biological sampling protocol for the pilot project that targets sampling needs.
    - The working group emphasized that survey-specific age-length keys are useful.
- Address who will process biological samples.
    - *Note: for the pilot project it is likely that the NEFSC will be able to; however, for a shelf-wide survey this will need to be addressed depending on the volume of sampling needed.*
- Consider some level of overlap between the industry-based survey and bottom trawl survey.
    - When there are multiple indices and data sources it is best to make sure there is overlap so that the model can better address the multiple surveys/data sources.
- Use a restrictor rope in the pilot project.
- Use the same gear as the Bigelow.
- Incorporate any re-stratification of the survey done on the Bigelow.
- Use the same electronics and mensuration gear across vessels.
- Sample in more than one of the 4 major areas for proof of concept.
- Reduce depth limit to 130-150m. Investigate minimum depth required before loss of data required for individual stock assessments versus ecosystem-based assessments.
- Host a follow up meeting to discuss net mensuration value, need, and similarity across different systems.
- Host a follow up meeting with existing survey programs to discuss sampling stations.
- Host a series of public meetings to gather industry feedback. Similar to what was done for pilot hook and line survey.
- Host a workshop with vessel owners to discuss feasibility and/or limitations.
- Have someone ready to help with System for Award Management (SAM) registration so vessels are able to bid on the project in a timely fashion.

Meeting Materials

Materials listed below are provided for the Council's consideration of this agenda item.

1) NTAP meeting summary from February 8, 2024
2) NTAP Working Group Summary from February 29, 2024

Northeast Trawl Advisory Panel Meeting

~ NOTES ~

Thursday, February 8, 2023
9:00 AM - 5:00 PM

I. Executive Summary

The meeting was held in-person on Thursday, February 8 in Arlington, VA. Attendance was high with most attendees joining virtually. The meeting covered a range of topics including updates on the Northeast fisheries Science Center (NEFSC) and NEAMAP fall surveys and spring preparations. **All fall surveys were successful though gear interference in Gulf of Maine (GOM) remains a concern for Bigelow and NH/ME surveys.** Presentations by NEFSC and School for Marine Science and Technology (SMAST) included an update on the restrictor rope research which will soon be submitted to a journal for peer review. **The restrictor rope did not cause significant changes to species composition or size classes in the area studied. Multiple NTAP members supported expanding the range of restrictor rope research into the GOM.**

Bigelow contingency plans as well as the industry-based survey (IBS) white paper was discussed. Option 1, using the Pisces as a primary backup for the Bigelow, was the preferred short-term plan. Some members expressed doubt regarding the viability of this option and its effectiveness but there was **strong support for continuing to plan and fund the necessary upgrades to the Pisces and ensure it could be used as backup for the Bigelow.** In the context of developing an IBS complementary to the Bigelow (contingency option 4), there was support for exploring this idea though members had some reservations about the viability of this option. Under this option, NTAP had a general consensus around keeping the net and sweep the same as the Bigelow and modifying certain standards (i.e., doors, wire, sweep, auto trawl) to ensure a wide variety of vessels could be considered (more details are provided in the white paper). There was also consensus for maintaining the Bigelow survey as the region's "backbone."

However, since initiating the IBS discussions with the understanding that the survey would start a new, standalone time series, there was **interest in considering an IBS survey not strictly as a Bigelow contingency** (the Pisces is a better contingency option, so use an IBS in a different way). NTAP supported broadening data collection, using gear/protocols that result in more stable net spread and head rope height that is more capable of sampling flatfish, and that can sample inside of wind farms. There is interest in using restrictor ropes but caution about applicability in the GOM. **There was also interest in splitting the survey area into 2 and using different sweeps in each area.** The areas are generally described as being divided by Cape Cod. There were different opinions about what elements of standardization are crucial (e.g., wire diameter). Many NTAP members supported not utilizing auto trawls if the captain is skilled. There are differences in opinion about vessels' ability to sample in wind farms though consensus at this time was that mobile gear will be incompatible of sampling within floating wind farms. There were differences in opinion related to sampling daylight hours vs. 24 hours.

The NTAP working group will meet next to continue discussions on an IBS pilot study. The next full panel meeting will be in summer 2024.

II. Participants

A. NTAP Members:

Name	Affiliation	In attendance
Kathryn Ford	NEFSC	x
Phil Politis	NEFSC	x
Anna Mercer	NEFSC	x
Tim Miller	NEFSC	
Dan Salerno	NEFMC Member Co- Chair	x
Jameson Gregg	MAFMC Scientist	
Jim Gartland	MAFMC Scientist	x
Dan Farnham	MAFMC Member	x
Peter Whelan	NEFMC Member	x
Wes Townsend	MAFMC Member Co-Chair	
Terry Alexander	MAFMC Stakeholder	x
Emerson Hasbrouck	MAFMC Stakeholder	x
Chris Parkins	ASMFC Representative	x
Pingguo He	NEFMC Scientist	x
Vito Giacalone	NEFMC Stakeholder	x
Mike Pol	NEFMC Scientist	x
David Goethel	NEFMC Stakeholder	x
Sam Novello	NEFMC Stakeholder	
Michael Hiller	MAFMC Stakeholder	x
Bobby Ruhle	ASMFC Representative	x

B. Other Participants:

Name	Affiliation
Katie Burchard	NEFSC
Hannah Hart	MAFMC
Alexander Dunn	NEFSC
Andy Jones	NEFSC
Catherine Foley	NEFSC
Angelia Miller	UMASS Dartmouth SMAST
Jainita Patel	ASMFC
Jessica Blaylock	NEFSC
Joe Grist	MAFMC
Chris Moore	MAFMC
GF	*unknown*
Rebecca Peters	ME Department of Marine Resources
Sefatia Romeo Theken	MA Department of Fish and Game
Catalina Roman	UMASS Dartmouth SMAST
Gareth Lawson	CLF
Kiley Dancy	MAFMC
Jon Hare	NEFSC
Russell Brown	NEFSC
Scott Curatolo-Wagermann	Cornell Cooperative Extension
Ron Larsen	Sea Risk Solutions LLC
Michelle Duval	MAFMC
Alex Mercado	Cornell Cooperative Extension
Andy Lipsky	NEFSC
Renee Reilly	ROSA
Michael Pentony	GARFO
Scott Olszewski	RI Department of Environmental Management
Brad Blythe	BOEM
David McElroy	NEFSC
Katie Viducic	NEFSC
Josh H	*unknown*

III. Notes by Agenda Topic:

Welcome, Introductions, Logistics (D. Salerno)

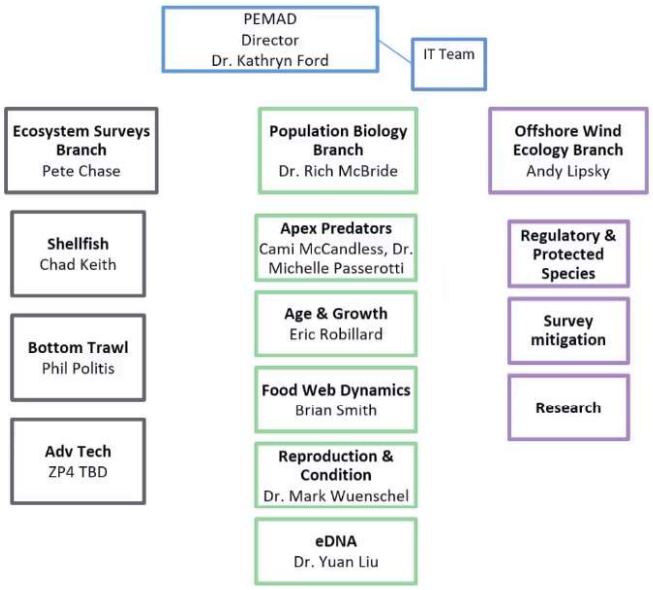
- Round Table Introductions

Center Updates (K. Ford, A. Mercer, K. Burchard, A. Dunn)

- Update on action items from last meeting; actions taken on all items. Outstanding: waiting on OMAO guidelines regarding transiting through wind farms (NMFS has reached out to OMAO; they do not have a policy at this time; commanding officers have discretion for both transiting and trawling).
- Correspondence since last meeting
- Funding Update
    - NTAP funding received to support ~2 years of in-person meetings.
- **Bottom Trawl Survey update (Phil Politis)**
    - Fall 2023
        - This marked the 60th year of the NEFSC Bottom Trawl Survey (BTS).
        - Completed 335 trawls of 377 planned.
        - 107 bongo samples of 116 planned.
        - Some weather impacts during leg 1 in September, made up time on following two legs.
        - Significant fixed gear encountered Downeast Maine, Stratum 039. Fixed gear is a bigger problem in the fall.
    - Spring 2024
        - On track to begin as scheduled, currently preparing.
        - Planning for 60 days, 3 legs.
        - Tentative schedule: March 6 - May 15.
        - 377 stations planned.
    - One NTAP member requested additional details related to what stations were not completed and reasons why in future NEFSC update presentations.
- **Gulf of Maine Bottom Longline Survey Update (Anna Mercer)**
    - Completed 100% of stations (45 total) in fall 2023.
    - This marked the 10th year of the Bottom Longline Survey (BLLS).
    - Highlights:
        - Strong catches of groundfish, including haddock, pollock, and cod.
        - Strong catches of hakes (white hake and red hake).
        - Strong catches of large barndoor skates.
        - Two small halibut caught in the eastern strata.
        - One golden tilefish (6kg) caught in the eastern strata.
        - One blue shark (35kg) caught and sampled for the Apex Predator program.
    - Lowlights: High spiny dogfish catches made for a challenging workflow.

    - Data recently used for Atlantic cod, barndoor skate, red hake and thorny skate stock assessments.
        - On track to contribute indices of abundance for 5 additional stocks in 2024.
    - New webpage (https://www.fisheries.noaa.gov/new-england-mid-atlantic/science-data/gulf-maine-bottom-longline-survey)
- **NEAMAP surveys (Jainita Patel, NEAMAP Coordinator)**
    - **MA DMF Fall Trawl Survey**
        - 88% station completion (91 of 103)
            - 100% stations in GOM 514.
            - Combination of vessel staffing issues related to family medical situation and prolonged poor weather were issues for second half of survey.
            - Lost a station in Muskeget Channel due to Vineyard Wind avoidance area around unprotected cable.
        - High catches of Spotted Hake, Red Hake and Silver Hake.
        - Scup is still the dominant species in southern stations.
        - Continued decline of Little Skate and Winter Skate.
        - Spring 2024 planned as normal. No major changes.
    - **Maine New Hampshire Inshore Trawl Survey**
        - Spring 2023
            - 97 tows completed out of 120 planned.
                - Missed tows were due to bad weather at start of survey and mechanical issues combined with bad weather at end of survey.
        - Fall 2023
            - 78 tows completed out of 120 planned.
                - Missed tows were due to fixed gear and bad weather.
            - The number of tows dropped because fixed gear increased again in the last two years.
        - State still communicating with fixed gear fishermen to try and reduce loss of stations.
    - **Mid Atlantic/Southern New England Nearshore Trawl Survey**
        - Spring 20023
            - 150/150 stations completed.
            - Completion in 35 calendar days.
            - Top species by count: Scup, Butterfish, Longfin Squid.
            - Notable: Three field employees departed our workgroup prior to/during the spring trip, including two chief scientists, one of which was the Chief of Trawl Operations.
        - Fall 2023
            - 150/150 stations completed.
            - Completion in 29 calendar days.
            - Top species by count: Spot, Scup, Butterfish.

        - Notable: Passing of Capt. Jimmy Ruhle just prior to survey departure. It was amazing to complete the survey after Jimmy's loss in only 29 days after a major unexpected delay to the beginning of the trip.
    - 2024: Trip departure should be within a few days of April 20th weather pending. No major changes or additions.
- NEAMAP/SEAMAP Trawl Vessel and Gear Calibration Workshop
    - Objective: develop a best practices guide for gear and vessel calibrations across the NEAMAP/SEAMAP trawl surveys; 3-day online workshop held in mid-January.
    - Next Steps: have operations committee review 1st draft of the best practices document.
- **Communications update (Alex Dunn and Katie Burchard)**
    - Communicating NTAP research
        - Stock assessment schedule.
        - NOAA Fisheries event calendar.
        - Research track stock assessment webpages.
        - Rockhopper Catch Efficiency Study result in assessments.
            - Dashboard shows assessments using the study results.
            - 2023 used in: red hake, summer flounder and northern stock of windowpane flounder.
            - NTAP member comment/question: Can the dashboard show adjustments made by Tim Miller to the results?
            - Web feature currently a work in progress.
    - Research to rule infographic:
        - Working with a graphics team to create a new infographic to show the path/steps of a potential new source of data has through the assessment and catch advice processes; planning to highlight phases when industry can be involved.
            - Reach out to Alex (Alexander.dunn@noaa.gov) or Katie (Katie.Burchard@noaa.gov) if interested in helping.
- Reorganizing of PEMAD: New Offshore Wind Ecology Branch.



    - Offshore Wind Ecology Branch (OWEB) joined as a new branch in October 2023.
- Wind Update
    - Block Island (5 turbines) and CVOW Pilot (2 Turbines) – Operational.
    - South Fork (12 turbines), Rev Wind (65), and Vineyard Wind (62) are under construction.
    - Integrated Science Plan for Offshore Wind, Wildlife, and Habitat in U.S. Atlantic Waters (effort by RWSC).
    - BOEM and NOAA Fisheries released North Atlantic Right Whale and Offshore Wind Strategy.
    - Fisheries monitoring plan development (effort by ROSA)
    - Other resources: Mid-Atlantic Council wind website (https://www.mafmc.org/northeast-offshore-wind)

IBS Survey + Bigelow contingency plan next steps (K. Ford)

- Presentation covered background on NEFSC Multispecies BTS, need for Bigelow Contingency Plan due to performance concerns in last several years.
- Contingency planning
    - September 2023: NTAP working group started developing a plan.
    - Draft Contingency Plan was developed, considering multiple options:
        1. Pisces
            - Progress update: Readiness plan has been drafted and is being refined with NMFS and OMAO.
        2. NEFSC vessel calibrated to Bigelow
            - Progress update: Drafted memo about pursuing this option, started identifying potential vessels. Lots to still figure out including funding and calibration.
        3. Industry based vessel(s) calibrated to Bigelow

        - Progress update: no progress (but can be informed by Option 4 conversations)
    4. Industry based survey (IBS) not calibrated to Bigelow (parallel, separate survey)
        - Progress update: white paper provided to Councils and presented at Jan/Feb ASMFC, NEFMC, and MAFMC meetings.
- Presentation reviewed the IBS as described in the white paper.
- Following the presentation a similar motion was made at each of the meetings.
    - ASMFC Motion 1/25/2024: made by Mr. Reid and seconded by Mr. Keliher. Motion carried by consent.
        - *Move to recommend to task NTAP and the NTAP Industry Based Survey (IBS) Working Group to develop an outline detailing a proposal to conduct an IBS Pilot Program to test the viability of the program as presented in the "Proposed Plan for a Novel Industry Based Bottom Trawl Survey" white paper with a particular focus on adapting Section 2 "Survey Design Elements" to current Industry platform capabilities. Delivery date for the outline should be in time for further discussion at the Spring 2024 meeting cycle for the Commission and both the Mid-Atlantic and New England Councils in April 2024.*
    - NEFMC Motion 1/30/2024: made by Mr. Salerno and seconded by Mr. Pappalardo. Motion carried by consent with one abstention by NMFS (Mr. Pentony).
        - *Move to recommend to task NTAP and the NTAP Bigelow Contingency Working Group to develop an outline detailing a plan to conduct a multi-vessel IBS Pilot Program to test the viability of the program as presented in the "Draft Proposed Plan for a Novel Industry-Based Multispecies Bottom Trawl Survey on the Northeast U.S. Continental Shelf" white paper with a particular focus on refining Section 2 "Survey Design Elements," considering NEAMAP protocols and current Industry platform capabilities. A progress report on the draft plan should be presented in time for further discussion at the April 2024 meetings of the NEFMC and MAFMC, and the spring 2024 meeting of ASMFC.*
    - MAFMC Motion, 2/7/2024: made by Mr. Hughes and seconded by Mr. Rhule. Motion carried by consent.
        - *Move to recommend to task NTAP and the NTAP Bigelow Contingency Plan working group to develop an outline detailing a plan to conduct a multi-vessel IBS pilot program to test the viability of the program presented in the "Draft Proposed Plan for a Novel Industry-Based Multispecies Bottom Trawl Survey on the Northeast U.S. Continental Shelf" white paper with a particular focus on refining section 2 "Survey Design Elements", considering NEAMAP protocols and current industry platform capabilities. A progress report on the draft plan should be presented in time for further discussion at the April 2024 meetings of the NEFMC and MAFMC, and the spring 2024 meeting of ASMFC.*

- Next Steps
    - Finish the contingency plan.
    - Explore connections with offshore wind.
    - Plan out a pilot survey to be on the water in FY2025.
    - Give a progress report on the draft plan at the April/Spring Councils and Commission's meeting cycle.

Discussion and Questions:

- What is the objective? An industry-based survey that improves on the Bigelow/adds information that the Bigelow isn't collecting, or a contingency for the Bigelow (trying to match the Bigelow)? Would it be a standalone time series or calibrated to the Bigelow?
  A: *The white paper describes an approach that is a contingency for the Bigelow; it would be a standalone time series.*
- Want to create a survey that doesn't have to wait 5 years before the data can be used. Something you can use in the short term.
  A: *data streams from the IBS that could be used more quickly were outlined in the white paper. Oceanographic data and age data could be incorporated in a short time scale.*
- Can we use swept area biomass in assessments, efficiency?
  A: *Analytical assessments are a model-based assessment using Bigelow data as relative abundance. Empirical assessments (i.e. monkfish) use the trend. Some of our empirical assessments calculate swept area biomass. Taking area, the catch, and catch efficiency and calculating swept area biomass. Description of catch efficiency studies and how catch efficiency is used in stock assessments.* Jon Hare will follow up with the Population Dynamics Branch and get back to Vito.
- What is the status of the Pisces?
  A: *Conversations have begun, we have a scoping plan with the Pisces. We are on track for 2026 and 2027, not on track to have it ready for this Spring.*
- Status of a new NEFSC research vessel.
  A: *In an ideal world we would have estimates in a year. But there are a lot of variables outside of the Science Center at play that can influence timing.*
- If the Pisces isn't ready to fill in for the Bigelow, are there any considerations to postpone the refit of Bigelow?
  A: *There is currently some uncertainty with currently scheduled refit. As far as timing, there are plans for each ship to be the replacement for each other, but that could shift depending on funding availability.*
- What is the status of the restrictor rope study? When will it be submitted for peer review?
  A: *Not long, it is currently going through NMFS internal review and then will be submitted for peer review in a couple of months.*
- We need to split the IBS and contingency plan issues. The first issue is the contingency plan for the Bigelow and the options that go along with that. The second issue is then to develop the IBS pilot project to get on the water ASAP. Test out the unknowns (12/24-hour sampling days, 20-min tows, etc.).

- Are there plans to calibrate the Pisces to the Bigelow? Are the physical characteristics similar enough to not calibrate? When the IBS is considered, does this mean that two vessels with similar tonnage and length will not need calibration either (or three vessels that are physically similar enough)?
  A: *Calibrating between the Pisces and Bigelow as a part of the contingency plan has not yet been decided. Need to understand the characteristics of the vessels that could do this work.*
- Pisces has already filled in for our time-series. Maybe some assumptions that calibration is not needed? Sister ships should be the same, what are the similarities/dissimilarity of vessels that would require calibration?
  A: *NEFSC agrees that calibration may not be needed. We will also be limited to some level. We have not had the chance to calibrate Pieces and Bigelow yet, but it may be identified as a priority.*
- Does the Pisces cost $56,000/day?
  A: *That is the standard day rate; but the impact on NEFSC budget is not $56,000 per day.*
- Example given of the scallop survey – redundancies were available at reasonable costs when the research vessel was unavailable. The only way to ensure data is redundant.
- Keep in mind "cold start" problem; consider potential ways around that – splitting time or season across the vessels. Adds a tremendous amount of resilience if done right.
- Interesting to get feedback on whether we will be able to trawl in wind farms? Should we assume we cannot trawl there? May help us answer questions.
- Description of the cod IBS - make it so that anyone could do the work on the go. Cod survey uses 4 different boats, bottom sensors, the Notus System, and anything outside the parameters got thrown out. Most tow were completed using the same nets, same doors. Not worried about wire size, as long as net configuration and door configuration was the same. Ideally restrictor rope will be used in the IBS and will lessen concerns related to consistent door spread, etc.
- It's easy to take things away from a survey but harder to add. I think we can accomplish both an IBS and a calibration if we used the 400x12 on multiple vessels based on strata. Doesn't make sense to use vessels best suited for deep water to sample inshore. Survey overlap is crucial. Wire to wire is all that is important. Different vessels fit different criteria. Appropriate vessels to pull gear through GOM. Use industry vessel to fill in data gaps.
- With wind energy areas, significant holes will appear in our survey. Whatever we build as an IBS survey needs to be able to operate and maneuver in wind farm areas. GOM different windmills. But for southern New England/mid-Atlantic could an IBS still operate in those areas?
- We need more information about these wind farms to know who and what can tow there. Also, need additional details on how they will be cabled. Crosshatched? Buried? Block Island Wind farm is currently having trouble keeping their cable buried. I do think we still need to flesh out IBS. Restrictor rope work getting published gives us the answer. Standardize wing spread and have the best doors and be happy with your catch. There will always be uncertainty.
- Discussion about tow time: power take off hydraulic system vs. a haulback and the catch rate you'd encounter. NEAMAP protocols call the tow time at the initiation of trawling mainly because we are in shoal water. The survey tow time is from the time it starts until haulback. Technically it can still catch fish coming up. Tried minimizing that variance by stopping everything at the end of the tow.
- Discussion about restrictor rope, multiple vessels, and introduction of uncertainty.

- Cod IBS used 4 different vessels similar size and horsepower. Didn't use any sort of calibration but standardized gear. Minimizing variation via standardization.
- It is not ideal to use multiple vessels but may be needed. How can we conduct a multi-vessel survey without needing to calibrate but doing all that we can to eliminate as much of the potential variation as possible.
- Standardize wingspread, recognizing equipment differences. Could never calibrate all boat variables, need a way to minimize variation. It's a rabbit hole. If you change net ends you get different geometry, there is no way to get it perfect. We have to design something that will do the best job possible. I fear trying to design something perfect and never coming out of the rabbit hole.
- Bigelow wire size was too big.
- Need to be cautious we don't standardize the wrong thing. Better served to standardize performance metrics and geometry. Anything beyond that just creates problems for availability of vessels. You want to put bounds on the boat but don't focus on what is irrelevant to the application of the gear. Industry knows the implications of changes to gear. Wire size has no impact on catch. As long as spread isn't disrupted the door could be upside down and would not impact what is being caught.
- What was the added value of having an auto trawl on the Bigelow? Albatross didn't have it. I have never heard any justification related to why it is so important.
  A: *Auto trawl balances the tensions between the two warps. Comes into play when the current is pulling more on one side. Also, in high wind conditions the wind can start pushing the vessel to one side or the other relative to the gear. In this type of situation, the auto trawl will balance out the tension between the two warps. An auto trawl improves the consistency of tows and therefore the data collected. Also added benefit to when you hang minimizing gear damage. There is literature that has studied these elements.*
- Leave Bigelow survey alone we don't want to mess up that time series. How important is it that these vessels are similar to each other and/or similar to Bigelow, given it will be a stand-alone/complementary data set? Is there flexibility in how we design the IBS?
- If the IBS data will be treated differently, will data coming off say 4 boats need to be as close as possible or can we have more vessel differences and deal with the data analytically? There are advantages to having different vessels operate according to the area being fished.
- As far as the vessel effect goes, it's not only towing speed and net geometry there is inertia from heavier boats so boats would need to be similar in size and horsepower. Vessels could be a class of vessels. The "cart" should be standardized but the "horse" should be similar in size and class. But the subtlety and variability in vessels will help us better cover geography, depth, and bottom.
- There are a number of ways to compare a new net and an old net. What's important is whatever you are doing. We need to be open and aware of where you are holding your nose as to where you are willing to accept variation and where you aren't. A net maker can make the same two of the exact net and one will catch differently than the other.
- Captain experience to deploy gear ensures consistent performance so that data is the highest we can get. To design an IBS, we'll lean on captains with experience. How do we leverage experience and maintain consistency? Experienced captains mean less need for auto trawls. It would be good to

get expertise from NTAP captains to ensure metrics across vessels could be valuable to all multi-vessel surveys.

[The following points were presented at the end of the meeting and placed here due to relevance to this section.]

- Edits are needed in Section 2.3 sampling gear. We never talked about using a chain sweep or considered it for use in a survey, we talked about the chain sweep efficiency factor not the chain sweep itself due to degradation of size. The cookie sweep has the least amount of variability.
- Endurance, nowhere you can't make port in several hours. 7 days is enough. 10 days with a single crew could weigh on them rather heavily.
- Need to know about the boat before building out the plan.
- There are portable acoustic units that could work for acoustic requirements. Boats have to have acoustics to see in front of them. Now-a-days we all have sounders.

Action: We need to think about at least 1-2 working group meetings to discuss metrics important to have consistency across vessels before April. Hannah will organize a doodle poll.

Survey redesign & mitigation (C. Foley, Fay, M. Hall, A. Mercer)

Presentation by Catherine Foley (NEFSC)

Current stratification is a problem. Oversamples some strata and under samples others. Currently, NEFSC is looking at reducing the number of strata by condensing existing strata into "superstrata" or using a spatially balanced sampling design such as Generalized Random Tessellation Stratified (GRTS), which is adaptable to change. The presentation provided some examples. Also looking at impact of wind energy areas. If there is no sampling inside of wind farms, are we able to estimate what's going on inside by sampling outside? Perimeter sampling was representative of the biomass for small wind areas. This declines with the increase in size of wind areas.

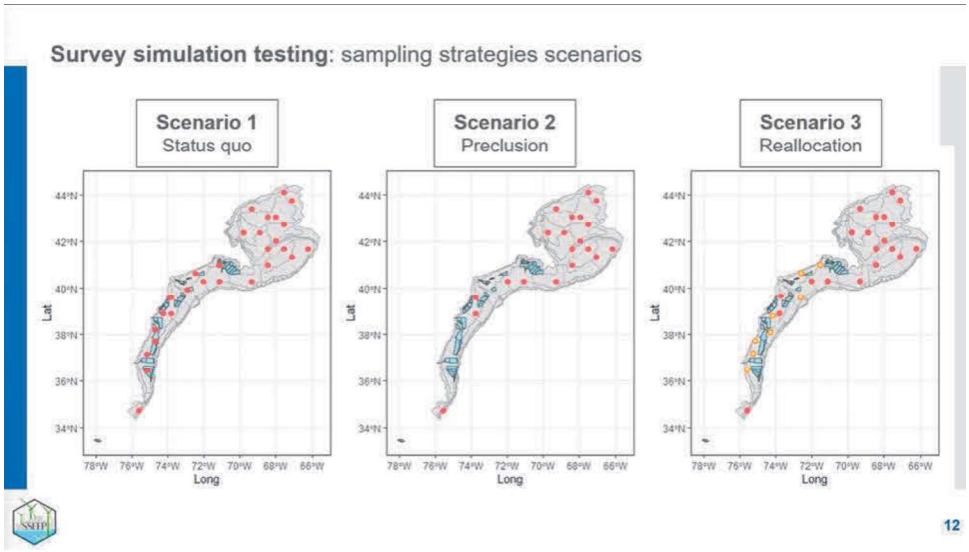
Next step is a collaboration with Ocean Science and Technology NOAA Head Quarter's Distribution Mapping and Analysis Portal (DisMAP), using our data as well as others to develop species distribution maps for every species we're interested in. We can start to assess different sampling designs and which species are most affected by perimeter sampling.

Presentation by Gavin Fay (SMAST)

Survey Simulation Experimentation and Evaluation Project (SSEEP) update. Goal: can we quantify likely changes of effort reduction associated with offshore wind? If supplemental sampling is done, what approaches might be better than others? Guided by two stakeholder workshops in 2022.

First part of project: Doing analysis using existing trawl survey data to look at the potential impact of survey effort reduction to sampling numbers and abundance indices. We looked at removing stations in wind farm areas. There was a change in the abundance index for summer flounder.

The second part of project: Using species distribution models for summer flounder and mackerel to test different sampling strategies.



Presentation by Madison Hall (NEFSC): Survey specific mitigation plans

Offshore wind will impact multiple surveys conducted by the NEFSC. There is a Federal Survey Mitigation Strategy that includes developing survey specific mitigation plans. Nineteen plans are being developed, including for the BTS and the BLLS. These are going through an internal and external review process.

Progress on drafts and reviews was presented.

It is unclear if the BLLS will be able to operate in floating wind areas in the GOM. Could reduce gear length if turbines adequately spaced; could do paired sampling between short and traditional gear to calibrate new approach.

BTS can't sample in wind farms; still evaluating impact of doing perimeter sampling. New approaches include smaller vessels to sample inside wind farms, passive gear, and remote sensing.

Discussion and Questions:

- There will be loss and exclusion for surveys in wind energy areas. What is the impact on abundance estimates? Is the change due to lost stations or will this reflect actual rise/lower stocks in wind areas? Do some of the simulations address estimates?
  A: *Very much at the front of our minds. SSEEP was designed to address these questions. We can use the simulator to test different spatial patterns. Won't tell us why the patterns are changing. Using species distribution models helps us determine what would happen if catch rates increase within these areas and we aren't able to survey them. We can the test assumptions that catch rate will be higher in wind farms in one simulation and the opposite where the catch rate is lower in wind farms. Pull those simulated predicted catch rates and distribute across the grid. Starting to get at how to*

incorporate those. It's also important to be careful to think about how we combine data streams if different surveys are covering wind areas.

- What are the expectations for the developers for the new mitigation requirements?
  ***A:** No answer yet. We're in the beginning phases of this conversation with Revolution Wind. The options Madison presented are some of the options we'd give to developers.*

Presentation by Anna Mercer (NEFSC): Pilot hook and line survey

Project goal is to develop and test the methodology for a new hook and line survey to provide data continuity for multiple resource species in complex habitats and alongside offshore wind turbines. Assuming we won't be able to conduct current trawl surveys in wind farms. This is a pilot project, not year 1 of a new survey. Trying to identify if this type of survey is worth the resources it would take to fully develop a long-term survey. Not a species-specific survey. Intended to target a wide range of species. The pilot is meant to inform how close to the turbines we can get.

Presentation provided specifics on gear and vessel recruitment (14 vessels applied, 3 were selected).

Discussion and Questions:

- Lures or bait setup?
  ***A:** Baited using squid*
- How are the sites selected? By bottom or depth?
  ***A:** Working with Catherine and Madison to select stations for smaller, pilot survey. Range of stations will encompass the entire survey area with structured bottom. Final decision not yet made, should be made by end of next week.*
- Will any stations be chosen specifically in the wind farms,
  ***A:** Yes, include areas around the VA and RI/MA turbines.*

Restrictor Rope Research (A. Jones)

Presentation by Andy Jones (NEFSC)

- Conclusions:
  - We observed limited impacts of the restrictor rope on catches.
  - Worth considering the positive impacts of the restrictor on standardizing gear performance when surveys in wind energy areas are being developed.
  - Specifically, in scenarios where standardizing net geometry is likely to be more important (e.g., when a large depth range is covered by a survey, or multiple survey vessels may be used).
  - One caveat is that we do not have enough data to definitively say that there is no effect of the restrictor rope for all species, but we have some confidence based on the diversity of species sampled through this research.

- Next steps and questions
    - Incorporating edits received from panel members.
    - Will likely target fisheries journal such as ICES Journal of Marine Science.
    - Work to be presented at World Fisheries Congress in Seattle in March.
    - Present work to NEFMC/MAFMC?
    - Work with other groups (e.g., ROSA) to provide guidance on the application of this gear to new surveys?
        - What would this look like?
        - Who would like to be involved?
        - Wait until after peer review is complete?
    - Create Decision Matrix to describe recommendations for restrictor rope use.
        - Survey Types:
            - New wind impact survey
            - New science survey
            - Existing wind impact survey
            - Existing science survey
        - Survey conditions:
            - Multi-vessel?
            - Spans large depth range?
            - Data used for assessments?
            - Data used for region/cumulative impacts?
            - Species overlap with experiment?

Discussion and Questions:

[Limited discussion time was available.]

- Happy to see this work reach a wider audience.

Brainstorming next research project

- summary of previous discussion - slides outline potential project ideas and considerations to make when prioritizing.
- Follow up on items raised during the meeting.
- Review previous materials - research recommendations from research track assessments.
- Goal: 3-5 titles of research projects NTAP would like to see funded.

Discussion and Questions:

Wide ranging discussion about priorities and needs.

- Multiple NTAP members supported expanding the range of restrictor rope into the GOM. Maybe there's more flexibility in using this if we use a boat without the historical data set. There is also

value in reaching out to the ICES group that has better data on the positive effects of the restrictor rope. Andy Jones offered to solicit a presentation from that group. If there's no problem using a restrictor rope in GOM, then we can bring in other boats without calibrating them. (A. Jones will send restrictor rope draft to Terry Alexander).

- One member indicated he was a big proponent of acoustics.
- Calibration and standardizing across many surveys in the wind areas is needed. Need to take into account working in impact zones. Linkages between new gear development (e.g., acoustics) and sampling in wind areas.
- Expand NEAMAP – extend sampling further offshore. If this is done to cover wind energy areas, keep in mind that 15-20 miles around wind areas should also be sampled to better understand how they will change fish distribution.
- For Bigelow contingency, there is at least one large industry vessel with an auto trawl. Bobby Ruhle offered to get more information.
- GOM will be a new ball game for surveying. Pilot jig study is interesting, though many species don't take jig. How to manage groundfish with floating offshore wind. We don't know what the anchoring system will look like, maybe 12" diameter cables? No towing or gillnetting will be possible. How to address in GOM is difficult. No footprint yet, either. Sample as much as we can and sit on it and use it to establish a baseline. Get as many data collections tools as possible on the water to see what's there first.
- ROSA is hosting meetings about developing a common database, part of the ROSA work plan.
- Unsure if sampling can occur with trawling inside of wind farms; uncertainty if some areas can be left for sampling. It would be good to get these questions on paper to ask the wind industry (turbine spacing, cables, electric stations, heat generation).
- If perimeter sampling has any value, it would be useful to have studies that establish spatial coherence at a very fine scale, say over a scale of miles. This would entail sampling in the vicinity of the boundaries. Before-After-Gradient (BAG) type studies do this. However, in the context of future monitoring, such information could be used to establish the correlation between observation from outside the area to unsampleable areas within the area. Species with fidelity to structure would not necessarily be amenable to this approach. Example black sea bass hanging around rock piles.

Discussion also covered funding. Currently there is no specific funding identified, but resolving the challenge of sampling inside of wind farms is a priority so there will probably be avenues for funding available through wind.

A general theme came up several times regarding the different objectives of adding an IBS and doing an IBS as a Bigelow contingency. NTAP can make their own recommendations for priorities that they think are important. A real need is to determine if we can sample in wind farms. The SMAST wind farm sampling program is assuming they'll be able to sample within 500 meters of foundations.

Discussion about data, developing standards and a common database. NEFSC described a small project where they're working with scallop research set aside partners to deliver data in a format NEFSC can use

more efficiently. At least one NTAP member was supportive of developing this kind of capacity, another indicated that data sharing is a high priority for wind developers.

Maybe worth updating the NTAP charter to include wind. Ideas like a Bigelow shadowing survey, NEAMAP expansion are all clearly within the NTAP remit, but the wind area work gets away from the charter.

Conversation covered concerns about BOEM as a regulator not listening to NMFS, lack of clarity regarding how NTAP can move the needle on some of these issues, regulatory issues such as letters of acknowledgement for fisheries surveys in wind farms.

IV. Wrap up & adjourn

- Scheduling next full panel meeting
    - This summer, considering June/July. Location/date TBD and details will be provided at a later date.
        - Location will likely be in New England
            - NEFMC meeting in June 24-27 in Freeport, ME
            - Scheduling NTAP meetings right after/before Council meetings can be easier for scheduling, booking rooms, etc.
            - MAFMC meeting will be in Riverhead in mid-June.
            - ASFMC meeting is planned for August.
            - Note: Holding the meeting in conjunction with the Council meeting was viewed as successful, but only because it was the winter meeting which has a light agenda. Coupling NTAP with Council meetings should consider the length and agenda of the Council meeting and may only work for Council meetings of shorter length (1-2 days) and limited agendas.
- Scheduling next working group meeting
    - A doodle poll will be sent out.
- Topics for next meeting
    - Please provide to the co-chairs

Northeast Trawl Advisory Panel
Bigelow Contingency Plan Working Group Meeting- Virtual

Thursday, February 29, 2024
9:00 AM - 12:00 PM

-- NOTES --

Working Group Attendees: Anna Mercer, Daniel Salerno, David Goethel, Eric Reid, Jameson Gregg, Kathryn Ford, Philip Politis, Sam Novello, Tim Miller, Vito Giacalone, Wes Townsend.

Other Attendees: Dave McElroy, Gareth Lawson, Katie Burchard, Hannah Hart, Will Poston.

Meeting purpose: Discuss next steps for Industry based survey.

Meeting minutes:

9:00-9:15 a.m. Welcome, Recap

Timeline of events

July 2023: NTAP formed Bigelow Contingencies Working Group (WG).

Sept 2023: Working group kickoff, 4 contingency options:

- Pisces
- NEFSC vessel
- Industry Based Survey (IBS) calibrated to Bigelow
- IBS not calibrated to Bigelow (parallel, separate survey)

Sep/Oct 2023: Council motions to develop Option #4 as a white paper.

Jan 2024:

- Working group meeting (Jan 12).
- White paper delivered to the Atlantic States Marine Fisheries Commission (ASMFC), MAFMC, NEFMC (Jan 18).
- Presentations to ASMFC (Jan 25), NEFMC (Jan 30), and MAFMC (Feb 7).
- Jan/Feb Council/ASMFC motions made to develop an IBS pilot project.

Feb 8, 2024: NTAP Full Panel meeting

- Discussion around supporting Pisces development and developing IBS pilot project.

Feb 29, 2024: WG meeting to discuss IBS and next steps.

April 2024: Progress report at MAFMC and NEFMC Council meetings.

9:15-9:45 a.m. Options 1-3

Status updates

1. Pisces
    a. Proposal with needed improvements submitted to OMAO.
    b. SEFSC agreement that Pisces can be primary backup to Bigelow.

    c. Next steps
        i. Specific plan and funding for improvements.
        ii. Discussion needed of when to “trigger” Pisces.
2. NEFSC vessel calibrated to Bigelow
    a. Proposal provided to NEFSC Director, being discussed at NMFS HQ.
3. Industry vessel calibrated to Bigelow
    a. No progress.
4. Industry-based survey
    a. White paper completed, submitted and presented to Councils.

Lots of energy on 1 and 4, options 2 and 3 still need to be fleshed out. However, it may be wise to continue to put our effort into developing options 1 and 4.

Councils’ February 2024 Motion: *Move to recommend to task the NTAP Bigelow Contingency Plan working group to develop an outline detailing a plan to conduct a multi-vessel IBS pilot program to test the viability of the program presented in the “Draft Proposed Plan for a Novel Industry-Based Multispecies Bottom Trawl Survey on the Northeast U.S. Continental Shelf” white paper with a particular focus on refining section 2 “Survey Design Elements”, considering NEAMAP protocols and current industry platform capabilities. A progress report on the draft plan should be presented in time for further discussion at the April 2024 meetings of the NEFMC and MAFMC, and the spring 2024 meeting of ASMFC.*

Discussion/comments:

Where is the Pisces home ported?

A: *Mississippi, would take multiple days to get up to New England*

Need to be on standby right from the get-go. Would be two weeks best case minimum to get the boat up here from Mississippi.

Another thing that is concerning is that this vessel doesn’t trawl often, should be exploring having the vessel ready.

After white paper we have a lot of support for moving forward with the pilot. Today we need to put more meat on the bones to really start developing how this survey would run. New time series for the science center in addition to Bigelow and NEAMAP.

9:45- 10:45 a.m. Industry Based Survey (option 4)

- What are the key goals for a pilot?
    - Should it operate inside wind farms? Can we replicate survey tows inside of a wind farm?
    - Questions to address in a pilot: 12/24-hour day, vessel size, crew size, ops protocol, bio sampling protocol, gear incl. use of restrictor rope, towing across cables/proximity to fixed structures.

Discussion/comments:

- Context from NEFSC: Next biggest threat is wind farms. Assumption that the Bigelow will not be able to be in or tow within a wind farm. If we are losing those windfarm

stations, especially since wind farms are going to cause a change in habitat this is a big problem.
    - Wind farm surveys not designed for a long-term solution with time series needed.
    - Developing an IBS that can operate in wind farms, or determining now if it should, would be helpful.

Operating in wind farms

The group discussed the need for the IBS to operate in wind farms and for a pilot to be designed to test operability of different sized vessels in wind farms. No clear consensus - some felt that existing fisheries monitoring work and commercial fishing activities once farms are built will tell us what we need to know about what kind of vessels can fish mobile gear inside of the wind farms. Others recommend determining vessel requirements and feasibility of operations within wind farms as a goal of the IBS. Other comments:

- We're having two different conversations: pilot that an industry or pair of industry vessels can sample in a complimentary way to the Bigelow. We are going to have a pretty good idea how different size vessels will operate in a wind farm development anecdotally via wind farm monitoring currently being conducted without having to incorporate this into the pilot.
- We're not going to bring someone in if they are not willing to go into a wind farm area.
- Not going to be a difference in ability between different sized trawlers (100-foot vs 50 foot) to fish in the fixed platforms. In the Gulf of Maine (GOM) all of them will be floating. Still don't know what the logistics are going to look like.
- Insurance coverage to tow in the wind farms could be a problem. Should check with insurance companies on coverage. Set up an IBS outside of the windfarms. For the pilot, insurance might be unique for the project; will be affected by the number of people on board the vessel.
- There could be value in knowing the capacity - operation on deck of different vessels. What level of catch volume can be handled; number of staff need.

24 vs 12-hour sampling

- If the decision is to do 1 boat for 24-hour days, pool of capable vessel is going to be smaller.
- Two vessels operating a 12-hour day will require a smaller vessel/smaller crew, less insurance and more availability. Going to 24 hours per day is not a good idea as it will raise expenses and there are fewer capable/willing vessels.
- Catch handling and biological sampling requirements will be better managed on two smaller vessels working 12 hours per day. Will also provide more options on crew.
- Are there any cons to doing two smaller vessels with a 12-hour shifts that we aren't thinking of? Two vessels: one running during the daytime and one nights. Or overlap option: half-darkness, half day? The overlap option would have 24-hour day coverage but split duties. Getting more granularity is important.
- Under the overlap option, Vessel 1 would fish noon to midnight and vessel 2 fishing midnight to noon. Have the vessel not conducting the tow shift figuring out where the next two should be.
- More vessels will be able to bid on the contract if it's a 12-hour shift. Be more efficient with less people needed. Using a large vessel would be a sole source contract. If that vessel breaks down, we're in the same situation as the Bigelow.

- There are cons from a standardization standpoint and managing a survey that uses a fleet of vessels makes it more complicated.

Gear

- Use the gear package that is currently being used on the VIMS NEAMAP survey (ground cable and ground gear)?
- Bigelow uses rockhopper, VIMS NEAMAP uses cookie. Bigelow has wider cod end to get additional length. Differences in mesh sizes in side panels.
- Two workgroup members emphasized that being similar to the Bigelow survey should take precedence and that the Bigelow gear should be used in the pilot. They pointed out that NTAP research has provided information comparing rockhopper and cookie.

Communication needs?

The group discussed how to best plan for the pilot study. Should we conduct workshops similar to those conducted for the hook & line survey? Is an operations workshop needed and/or visiting vessels?

- Questions about solicitation for scallop vessels: What did that solicitation look like? How much interest did you get?
  A: *There were several vessel visits gauge folks interest in registering with the System for Award Management (SAMS). Fair amount of interest. The scallop solicitation was different because it's an existing survey. Pilot IBS study may need to follow a different process. But we don't currently have someone to lead this effort. The hook and line effort conducted a series of meetings down the coast to help with their design.*
- The hook and line meetings were very helpful. It was helpful to have predefined questions we wanted discussion on. Definitely suggest having a point person dedicated to this effort. The meetings were a good platform for recruiting vessels, giving them information about requirements, and for responding to solicitations. A mix of in-person and virtual scoping workshops would be beneficial.
- Having someone in the office help with registration so the vessel can bid on the project would be beneficial. Including answering questions related to inspections, insurance requirements, etc. Starting earlier is better. Would likely need 9-12 months lead time.
- Also need to keep in mind deadlines for large contracts too. That will impact the timing and timeframe for setting the schedule. **This year the $250K- 5M deadline is May 13th.**

Design elements

- Be adaptable to potential loss of survey area. Incorporate any re-stratification of the survey done on the Bigelow.
- Do we want to do exactly as Bigelow does or incorporate some previous industry recommendations such as 30-minute tows and re-stratification of deep-water strata?
- Where would this pilot occur? Southern New England? At what depths?
- Three or four areas required to figure out. Mid-Atlantic, Southern New England (SNE), George's Bank (GB), GOM. Pilot should cover three areas for a proof of concept. Potentially SNE/Mid-Atlantic, GB, and GOM. The pilot doesn't have to occur in each region at the same time and vessels could share gear.
- Is sampling all the way to 200 fathoms worthwhile? Staying within 130-150 fathoms should be better. The deeper depths may be more important in different regions (e.g.,

monkfish, white hake). From one working group member: Gulf of Maine out to the 140's is solid American plaice, witch flounder and monkfish habitat. So, 150 fathoms would be safe maximum depth for final IBS design.

- How much money are we going to need? How much gear are we going to need? Spare nets if there is space on each vessel? We need to figure out basic things like that to determine cost. Everyone must have the same electronics and net menstruation systems and safety equipment.
- We're not trying to replicate an ecosystem survey we are trying to provide data for stock assessments. What is the maximum depth need before we lose data for stock assessment versus for ecosystem assessment?
- How far inshore would we want to go to overlap with other state and NEAMAP surveys? Some gaps in coverage in the 60-90 ft range. May be a good starting point in addition to some of the deeper areas where NEAMAP currently samples so there is some overlap.
- Recommend that for pilot there is a focus on overlap with the Bigelow to determine if the survey could work, should stick with where Bigelow goes, and then can modify from there. Post pilot need to determine what was done well vs. what needs to be fixed.
- For pilot target mid-depths, cut out deeper depths because they're more expensive to do (need larger wire, cost more comparatively). It's easier and less expensive to go shallower than deeper.
- Discussion about ratio of wire out; Bigelow and NEAMAP use depth-dependent ratio, NEAMAP also considers net geometry, commercial vessels operate similarly (shorter wire out in deeper water). Use pilot to determine scope for a longer-term survey. Gear needs to be on the bottom and fish with proper net geometry. If using a restrictor rope may not need to worry about this. With restrictor rope you'd use bigger doors, and the rope would be the restricting factor so that net geometry is held consistent. Would simplify entire question.
- Consider sampling water chemistry. Also, acoustics, plankton, etc. (where/if possible). At least to understand if these could be part of pilot/longer-term survey.
- Tow speed and tow time need to be defined.
- Don't require auto trawl (several working group members agreed, but others see value in auto trawl at least long term).
- Do we need to standardize net mensuration gear? Might need a separate meeting on this. Differences of opinion about value of net mensuration gear.
- Would be useful to survey vessels to get a sense of what electronics are already used/on industry vessels (depth).
- What are the costs of the sampling electronics/workstations? Can we build standard workstations that will work across multiple vessels? Portable FSCS is a good option, on boats would need servers, barcode scanners, etc. Talking about at least $30K (other working group members estimated much more, a scale alone can cost $9k). FSCS has been used in the past on industry vessels.
- Also need to define what needs to be supplied to these stations - hydraulic, mechanical, electrical? Darana R. only provides electricity (110V). Understanding the reality of moving these stations from boat to boat is a need. Need 110V inside too to run servers. Would need at least 2 scales, 1 fish board, 1 scanner, display(s), computer(s), calipers etc. per station.
- Would be beneficial to have a follow-up meeting with those that have used these systems to talk through all the different options and potential needs. Have this meeting

prior to a public workshop, so at the public workshops the message could be relayed and vessel owners/operators would have an understanding of what would be needed/required. At public workshops should already have a clear idea on specifics about set up, workstations, power requirements, space, and sampling equipment.
- Consider a follow-up discussion on the data management process.
- Consider length of time required for a pilot - 10 day vs. 5 days, etc.
- *Reminder: there are currently no funds available for this work, capacity of Center funding is limited and is currently struggling to fund the surveys that already exist.*

Summary of recommendations:

- Ensure survey can operate in wind farms.
- Develop a list of data elements collected in the trawl survey, identify which elements are sensitive to standardization.
- Develop a biological sampling protocol for the pilot that targets sampling needs. (Point made that survey-specific age-length keys are useful.)
- Address who will process biological samples. (For the pilot it is likely this can be done by the NEFSC. For a shelf-wide survey the volume of sampling will need to be addressed.)
- When there are multiple indices and data sources it is best to make sure there is overlap so that the model can better address the multiple surveys/data sources.
- Use a restrictor rope in the pilot study.
- Use the same gear as the Bigelow.
- Host meetings like done for hook and line survey.
- Have someone ready to help with SAMS registration so the vessel can bid.
- Incorporate any re-stratification of the survey done on the Bigelow.
- Use same electronics, mensuration gear across vessels.
- Sample in more than one of the 4 major areas for proof of concept.
- Reduce depth limit to 130-150m - look at how deep we go before we lose data for stock assessment versus for ecosystem assessment.
- Meet about net mensuration value, need, similarity of different systems.
- Meet with existing survey programs to discuss sampling stations.
- Have workshop with vessel owners to discuss feasibility, limitations.

Notes from the slides as edited during the working group meeting:

Should it operate inside of (fixed foundation) wind farms?	Yes (ideally)
Questions to address in a pilot: 12/24-hour day, vessel size, crew size, ops protocol, bio sampling protocol, gear incl. use of restrictor rope, towing across cables/proximity to fixed structures	2 boats sampling 12-hour periods over a 24-hour day (noon-midnight/midnight-noon); use restrictor rope. For the pilot, bio sample as much as possible, consider processing needs (who is doing it, what is their capacity); how/if CTD and plankton sampling is done, acoustics. Learn from other wind farm monitoring surveys and commercial activity in wind farms.

	Use pilot to develop a scope table for optimal spread; consider impact of using restrictor rope (spread won't be dependent on scope).
Workshops like hook & line survey? Operations workshop?	Workshops useful - Confirm the gear we're moving forward with (gear used on Bigelow for consistency); make sure they're structured; describe process clearly (i.e. scallop survey; include specs as early as possible); fall better.
Connection to wind farm trawl surveys, will that answer questions around towing across cables/proximity to fixed structures?	(Skipped this - covered under 1 and 2)
What are key stat design questions - how does that matter for a pilot?	Spatial overlap with other surveys. Future-proof survey designs, being adaptable to potential loss of survey area. Incorporate any re-stratification of the survey done on the Bigelow. More discussion of key elements of the survey design - consider if there is anything the pilot should examine - 20/30 min tow time, for example, tow speed.
Where will the pilot occur?	The 3 areas: MA-SNE, Georges, GOM. Include multiple areas ideally. Pilot doesn't have to occur in each region at the same time, vessels could share gear. Depth: using wire on the vessels will be less expensive; what would we miss stock assessment-wise 130-200 fathom (e.g., white hake); pilot focus on same strata as Bigelow, but truncate depth if needed to accommodate existing wire lengths; future need: overlap with NEAMAP/state surveys - include 60-90 ft range gap between NEAMAP and Bigelow.

- Auto trawl - do not require this for the pilot.
- Mensuration - identify specific measurements needed; not necessarily a specific unit (keep data management complications in mind, though)
- Electronics - can use what is on the vessels (needs more exploration based on data management needs)
- Horsepower - 20 min tow at 3 kt.
- Sampling workstations - portable FSCS; costs are >$30k; need to specify space and electrical needs.

10:45-11:30 a.m. Next Steps

- Develop cost estimates - back of the envelope we're in the $750K to $2M range.
    - Also need to consider how to handle the funds (maybe ASMFC).
- Co-chairs will provide an update at Councils' upcoming April 2024 meetings.
    - NEFSC staff will provide briefing materials to support Council meeting updates.
    - MAFMC briefing book is due March 29.
    - NEFMC briefing book is due April 5.
- Plan for a follow-up Working Group meeting following the April Council meetings prior to June meetings.
- Provide NTAP full panel meeting minutes and WG meeting summary. Prior to summer NTAP meeting, prepare any memos or background info required and share slides with MAFMC staff a day ahead of meeting.

Atlantic States Marine Fisheries Commission

Guidelines for Resource Managers on the Enforceability of Fishery Management Measures

Developed by ASMFC's Law Enforcement Committee

Sixth Edition
2024

Vision: Sustainable and Cooperative Management of Atlantic Coastal Fisheries

INTRODUCTION

The Law Enforcement Committee (LEC) of the Atlantic States Marine Fisheries Commission (ASMFC) first prepared the *Guidelines for Resource Managers on the Enforceability of Fishery Management Measures* (*Guidelines)* in 2000. In keeping with ASMFC direction to periodically review and update the guidelines, the LEC revised this document in 2002, 2007, 2009, 2015, and now this sixth edition, effective July 1, 2024. The core of the new *Guidelines* is an enforceability matrix for fishery management measures. The matrix table was developed from the responses to a survey of LEC members. The enforceability ratings cover a variety of management strategies that are employed in marine fisheries management programs. We include ratings for these strategies based on overall, dockside, at-sea, and airborne enforceability. The LEC strongly encourages managers to consider the enforceability of all management regulations that are developed. We believe the *Guidelines* can support and strengthen the effectiveness of the Commissions efforts to conserve our marine fisheries resources.

Compliance with natural resource regulations helps ensure sustainable fisheries. Many factors contribute toward compliance, including but not limited to the perceived legitimacy of the regulations/process, moral norms, voluntary compliance, enforcement, and enforceability.

Acknowledgements

The LEC gratefully acknowledges our current and past members who contributed time and expertise to the *Guidelines.* We thank NOAA Fisheries Northeast Division of the Office of Law Enforcement, NOAA General Counsel, and United States Coast Guard Districts One and Seven, authors of the *Enforceability Precepts for Northeast Regional Fishery Management Councils (June 2013),* for sharing their publication with us and allowing us to incorporate selected material from that document. We thank Toni Kerns, Tina Berger, and Madeline Musante for their assistance in updating this document. We also acknowledge the opportunity afforded to our committee by the commissioners and staff at ASMFC to revise the 2015 *Guidelines*, and to make them available for routine use and reference.

HOW TO USE THIS DOCUMENT

The *Guidelines* are organized into five sections for ease of reference.

SECTION ONE (Page 3)
This section provides a statement on **general enforcement operations** that should be considered when implementing new management options or strategies.

SECTION TWO (Page 3)
This section presents **enforcement tools** that should be considered when implementing new management options or strategies.

SECTION THREE (Page 4)
This section provides general guidance in the form of **general enforcement precepts** that should be considered when evaluating fishery management options or strategies. These precepts apply regardless of the species or area under consideration.

SECTION FOUR (Page 6)
This section presents the relative **enforceability ratings** of specific management options. Using a matrix table, readers may quickly identify the relative enforcement characteristics of the management strategies, including their overall, dockside, at-sea, and airborne ratings.

SECTION FIVE (Page 9)
This section provides details regarding the **enforcement strategies and recommendations** for the management measures covered in the *Guidelines*.

SECTION ONE

General Enforcement Operations

Enforcement operations, whether they are at-sea, dockside, or airborne, are resource intensive. Available enforcement resources are maximized by enacting regulations that can be enforced at more than one point during fishing activity.

Regulations that can only be enforced dockside through the monitoring of offloads are particularly time consuming. Law enforcement agencies will never have sufficient personnel to monitor more than a small fraction of the total fish landed. This is mitigated in certain fisheries where enforcement can use electronic monitoring technologies such as vessel monitoring systems (VMS), electronic logbooks, and pre-landing notifications to monitor the fishery remotely and improve directed tasking of available resources.

Law enforcement relies on state and federal partnerships for at-sea patrol, and inspection efforts. Officers work with these partners to provide effective at-sea enforcement of state and federal regulations, particularly those involving area, gear, and prohibited species restrictions. Traditional aircraft, as well as drones, may be used with limitations in the enforcement of marine fishery regulations. Many states lack these types of resources and, for those that do have a program, budget and or policy may limit use of said resources for this enforcement application.

SECTION TWO

Enforcement Tools

Enforcement tools are management measures that are not specifically designed to limit catch or effort but to aid in the enforcement of other management measures that do so. Enforcement tools such as electronic reporting, pre-landing notification, and VMS have improved the effectiveness of certain regulations by allowing enforcement staff to focus effort on high priority areas. These tools do not replace traditional enforcement but rather complement patrol work and inspections. The requirement for some of these tools should be considered essential for effective enforcement of some management measures (e.g., VMS requirement for closed areas). New and emerging technologies such as cameras, ropeless fishing and others should continue to be explored.

SECTION THREE

General Enforcement Precepts

SIMPLICITY

The most enforceable regulations are those that are simple, realistic, easy to understand, and presented in an accessible way to the regulated community.

Simple, straightforward regulations are easier for the regulated community to understand and remember, which is critical for voluntary compliance. They are also more enforceable because violations of simple regulations are easier to detect and to prove. For example, a simple regulation such as “possession of an undersized fish” stands on its own. A violation of this regulation would apply regardless of where the fish was taken, how it was harvested, or any other regulatory variable. Conversely, complex regulations are more susceptible to confusion, misunderstandings, and differing interpretations among the regulated community, law enforcement personnel and the court system.

The proliferation of regulations frustrates industry as well as law enforcement personnel. Cumulative, piecemeal modification of regulations to address fishery or environmental changes inevitably leads to more complex and occasionally even contradictory regulations unless the entire suite of regulations for a particular species is carefully reviewed in its entirety when modifications are made.

Every effort should be made to write regulations in simple, plain language that avoids jargon or technical terminology. And, where possible, all related regulations for a given species should be bundled or linked together in the appropriate regulatory format.

CONSISTENCY

Regulations should make every effort to minimize exceptions and exemptions. Wherever possible, managers should adopt the same management measures among different fishery management plans, across different state boundaries, and between state and adjacent federal waters. When considering modes of fishing, consistent regulations within specific sectors creates better compliance. For example, when regulations offer a different size and possession limit for a specific user, based on means of fishing or a specific location of fishing, this creates confusion among the users and regulators, reducing the effectiveness of a regulation.

Anytime you have an exception to a regulation, such as under a conservation equivalency, you have potentially made the regulation more difficult to enforce. The LEC recognizes that conservation equivalency is a useful tool for fishery resource managers working within the collaborative structure of ASMFC. However, to the extent possible, states should make every effort to work within a regional or coastwide regulatory framework. This is especially important where

two or more states share contiguous waters or concentrated fishing areas. When individual states choose conservation equivalency, this document should be used to select management measures that are the most enforceable.

To the extent possible, there should be consistent definitions of terms for management measures, gear types or use, measurement standards, regulatory areas, and between federal and state waters.

STABILITY

Regulations should avoid frequent changes. When this occurs, there must be a concerted outreach and educational effort to adequately inform the public. This principle especially applies to recreational angling, where bag or size limits that change from year to year diminish enforceability and increase the likelihood of unintentional violations.

Enforcement personnel may require several years just to provide adequate training or to get the equipment necessary to implement new or modified regulations. More frequent changes in regulations might result in little effective enforcement during those short regulatory periods.

EFFECTIVENESS

In general, the most effective regulations from an enforceability perspective are those based on controlling effort (closed area or season) and not the outputs (catch quota, trip limits). Effective regulations promote rather than hinder voluntary compliance. Development of effective regulations must consider and reflect available enforcement staffing, funding, technologies, and equipment.

In addition to adding complexity, the proliferation of new regulations often requires new or significantly enhanced enforcement resources. If added resources are not provided, enforcement will need to shift effort from what is currently being enforced. This can result in an arbitrary prioritization of enforcement effort that may or may not correspond to the conservation needs of the species affected.

Certain management measures can enhance effectiveness. For example, regulations that can be enforced through more than one means, or at more than one point during fishing operations, allow enforcement some flexibility in using available resources in the most efficient way possible. Regulations that strengthen documentation and labeling of fish and fish products would enable law enforcement personnel to track products back more effectively to the harvester and/or the initial purchaser and to intercept unlawful seafood at various points between harvest and final sale for consumption.

SAFETY

Regulations should be designed such that they do not create an unintended safety-at-sea issue. For example, specified allowable days for fishing may increase pressure to go out to sea when weather conditions are unsafe. Likewise, establishment and design of closed areas should consider safe and direct transit needs of fishers when weather conditions change rapidly.

SECTION FOUR

Enforceability Ratings

The 2024 *Guidelines* included a survey of 20 voting members of the LEC who numerically rated the enforceability of 27 management measures based on three categories: dockside, at-sea, and airborne enforceability. The enforceability of each management measure was rated on a scale of one to five (1 = least enforceable, 5 = most enforceable) for each of the three categories. An average of at-sea and dockside ratings from the survey is also presented.

It is important to note the survey indicated limited applicability for airborne resources in the enforcement of most management measures. Therefore, the Airborne value was only included in the average rating when it increased the average value of the management measure. The LEC stresses that this does not imply that airborne resources are ineffective. While airborne enforcement may be restricted in applicability, there are clearly times and places when it is the most effective means of enforcement, thus an important enforcement tool.

The results of the updated survey are presented below in a visual matrix. Management measures were arranged in descending order of their average rating from the survey. Responses receiving a score of greater than or equal to 4 are color coded green, those with an average score greater than or equal to 3 but less than 4 are color coded yellow, and those less than 3 are color coded red.

Table 1. Enforceability of Marine Fisheries Management Measures

Management measures are ordered based upon the average of dockside and at-sea ratings. The enforceability of each management measure was rated numerically on a scale of one to five (1 = least enforceable, 5 = most enforceable) for each of the four categories. If the airborne rating increased the average rating, the inclusive average is indicated in parentheses.

Management Measures	**Avg Dockside & Sea (avg w/Airborne)**		Dockside	At-Sea	*Airborne*
Permits	**4.61**		4.53	4.68	*1.53*
Slot Limits	**4.61**		4.68	4.53	*1.11*
Prohibited Species	**4.55**		4.53	4.58	*1.37*
Bag / Possession Limits (Low Volume)	**4.55**		4.63	4.47	*1.16*
Maximum / Minimum Size Limits	**4.53**		4.63	4.42	*1.21*
Closed Seasons	**4.18**		3.89	4.47	*3.21*
Tagging, Labeling, or Marking of Species	**4.00**		4.26	3.74	*1.11*
Bycatch Prohibition	**3.97**		4.21	3.74	*1.26*
Trophy Fish Allowance	**3.89**		4.11	3.68	*1.21*
Vessel Monitoring System	**3.82**		3.63	4.00	*2.74*
Daily Trip Limits	**3.82**		4.32	3.32	*1.26*
Gear Marking requirement	**3.50**		2.68	4.32	*1.95*
Gear Regulations (excluding method of take)	**3.42**		2.89	3.95	*1.89*
Method of Take	**3.37**		2.53	4.21	*2.11*
Closed Areas	**3.26 (3.58)**		2.11	4.42	*4.21*
Catch and Release Fishing	**3.24**		2.95	3.53	*1.58*
Aggregate Trip Limits	**3.16**		3.42	2.89	*1.26*
Electronic Reporting	**3.05**		3.68	2.42	*1.11*
Gear Restricted Areas	**3.05 (3.14)**		1.84	4.26	*3.32*
Bycatch Limits by use of Weight or Volume	**3.00**		3.42	2.58	*1.05*
Days at Sea	**2.87**		2.95	2.79	*1.74*
Annual Quotas	**2.84**		3.32	2.37	*1.05*
Bycatch Limits by % of Total Catch	**2.76**		3.32	2.21	*1.05*
Harvest Tolerance by Weight, Volume or %	**2.74**		3.11	2.37	*1.26*
ITQ / IFQ / LAP	**2.69**		3.28	2.11	*1.06*
Limited Drag or Soak Time	**1.89**		1.11	2.68	*1.84*
Targeting Prohibition	**1.87**		1.63	2.11	*1.16*

SECTION FIVE

Enforcement Strategies and Recommendations

This section provides information about each of the management measures that were considered in the *Guidelines.* Included is a brief definition of the measure, its numerical ranking based on the survey results, and some thoughts for consideration when drafting regulations. For ease of organization, the management measures are listed alphabetically.

ANNUAL QUOTAS

Definition: A specified amount of a particular species is allowed to be landed per fishing year (or fishing season). Typically, a quota is established for the entire fishery, and occasionally is subdivided by region or time. Quotas are not usually employed for recreational fisheries.

Average Overall Rating: 2.84

Recommendations:

- A straightforward opening and closing of fishing to meet quota objectives is preferred over measures that will extend fishing, such as trip-limit triggers or progressive area closures, which complicate enforcement efforts.
- Incentives to under-report or not report are greater, so available enforcement resources must always be considered to ensure proper accounting of catch.
- Requirements for electronic reporting, timely reporting, and on-board monitoring, or tagging regulations can aid the enforcement effort.
- A well-designed catch documentation scheme to track fish from harvest to offloading, and through the processing and shipping phases, adds transparency and effective accountability.

BAG/POSSESSION LIMITS (low volume)

Definition: A specified amount of a particular species is allowed to be landed per trip, per fisher or per vessel. Low volume limits are established as some number of fish that is easily counted on board. They typically apply to recreational fisheries. In some cases, commercial fishers may also be subject to low possession limits.

Average Overall Rating: 4.55

Recommendations:

- This is considered among the more straightforward and enforceable regulations, at least as it would apply to small quantities of catch.
- Bag and possession limits should be consistent across state and federal boundaries, as well as modes of fishing. The standard of measurement should be clear if the limit is based on weight.

- A possession limit is superior to a landing limit and allows for at-sea as well as dockside enforcement.
- Requiring fish to remain intact facilitates identification. Particularly for large party charters, processing at-sea or filleting out catch onboard complicates enforcement. Where processing at sea is allowed, enforcement staff should be consulted. Supporting regulations requiring that skin must remain on filets, counting two filets as one fish regardless of size, or requiring retention of "racks" may aid enforceability in specific circumstances.
- Enforcement personnel find that frequently changing bag limits, either by mode of fishing or time of year are difficult for fishers to follow. Maintain limits for a minimum of 3 years to ensure consistency of enforcement and greater compliance.

BYCATCH LIMIT (Weight/volume)

Definition: Bycatch limits restrict, but do not prevent, the incidental harvest of non-targeted or otherwise protected species during legal fishing activity.

Average Overall Rating: 3.00

Recommendations:

- These limits, especially when there may be large quantities on board, are difficult to enforce and even more difficult to prosecute.
- Enforcement would be enhanced if bycatch were required to be segregated from the targeted species. Accurate count of catch onboard cannot easily be done at-sea due to species mixing, loading, icing, and the safety of boarding party in accessing the fish hold, etc.
- Typically, enforcement of bycatch limits are time and labor intensive.
- Bycatch limits and measurement standards should be consistent across jurisdictions.
- A possession limit is superior to a landing limit and allows for at-sea as well as dockside enforcement.

BYCATCH LIMIT (percent of total catch)

Definition: Bycatch limits restrict, but do not prevent, the incidental harvest of non-targeted or otherwise protected species during legal fishing activity.

Average Overall Rating: 2.76

Recommendations:

- These limits, especially when there may be large quantities on board, are difficult to enforce and even more difficult to prosecute.

- Enforcement would be enhanced if bycatch were required to be segregated from the targeted species. Accurate count of catch onboard cannot easily be done at-sea due to species mixing, loading, icing, and the safety of boarding party in accessing the fish hold, etc.

- Enforcement is very time and labor intensive to verify the percentage of the catch that is bycatch, and to successfully document excessive bycatch volumes.
- Bycatch limits and measurement standards should be consistent across jurisdictions.
- A possession limit is superior to a landing limit and allows for at-sea as well as dockside enforcement.
- Regulations should specify how much target species catch is required to justify retention of bycatch species and in what amounts. This is necessary to prevent a bycatch species from becoming the target species.

BYCATCH PROHIBITION

Definition: Incidental retention or possession of non-targeted or otherwise prohibited species caught during normal fishing operations is prohibited. Any bycatch must be discarded immediately. It may not be retained.

Average Overall Rating: 3.97

Recommendations:

- A bycatch prohibition is the most effective enforcement measure for bycatch.
- The enforceability of a bycatch prohibition is reduced if adjacent or nearby jurisdictional waters allow limited bycatch quantities (weight, volume, or percent of catch).
- Because of perceptions of waste from discarding bycatch, other regulations (gear specifications, soak times, area restrictions, and/or landing flexibility) may be implemented to minimize the likelihood of catching incidental or non-targeted species in large quantities. Enforcement challenges presented by these other regulations may negate the enforceability advantage of a full bycatch prohibition.
- Clearly identify when possession of a prohibited species is restricted (i.e., returned to the sea as soon as practicable).

CATCH-RELEASE FISHING

Definition: A fish or marine organism cannot be retained and must be immediately released at the site of capture without any unnecessary harm or destruction. This is typically applied to certain recreational fisheries. Temporary possession may be allowed for proper identification, photographing, or determining compliance with applicable regulations.

Average Overall Rating: 3.24

Recommendations:

- Regulatory language should clearly specify the conditions for any temporary possession of a catch and release species onboard (Identifying, measuring, photographing).

CLOSED AREAS

Definition: Fishing in a specified area is prohibited.

Average Overall Rating: 3.26 (3.58)

Recommendations:

- It is critical to have clearly defined areas. Use exact latitude/longitude and straight lines with regularly shaped areas as much as possible. Avoid general descriptions such as distance offshore, or a center point and radius. Do not use depth contours to define closed areas.
- Closed areas are more likely to be understood by fishers and result in less unintentional non-compliance, if they are regular in shape and, where possible, are oriented north-south and east-west in concert with latitude/longitude boundaries.
- While clearly defined, regularly shaped and large areas simplify enforcement, advances in tracking and monitoring technology are mitigating factors that might allow for smaller, irregularly shaped closed areas, especially when such areas are more likely to garner support and compliance, enhance safety at sea, or better protect fish and habitat.
- Successful prosecution of violations must include the capability to conduct vessel monitoring, aerial, and at-sea surveillance. Even with VMS capability, law enforcement may need to document the violation at-sea or via airborne detection to gather sufficient evidence for prosecuting the violation.
- Depending on the fishery and gear type, restrictions on only certain activities within a closed area may require at-sea boarding to document a violation.
- The more complete the closure to all fishing activity, the easier it is to enforce and successfully prosecute violations.
- Large, contiguous areas are preferable to numerous, smaller areas.
- If possible, the area should be closed to transit with fishing gear onboard. If transit is allowed, regulations should clearly specify the proper stowage of fishing gear during transit through the closed area. Transit must be specified as continuous, direct, and expeditious. If an allowance for loitering or stopping is included in regulations, there should be a mandatory call-in or reporting requirement.
- Gear closure areas or regulated mesh areas are difficult to enforce. If regulations only prohibit the use of a particular gear type within a closed area, possession of that gear within the closed area should be prohibited.

- Emergency, temporary, or short-term rolling closures are difficult to enforce and increase the likelihood of unintentional violations because communicating the requirement to the fishing fleet can be challenging. In addition, shifting closed areas within a season increases the confusion of enforcement officials on the status of an area.

CLOSED SEASONS

Definition: A specific fishing activity is prohibited during certain times of the year.

Average Overall Rating: 4.18

Recommendations:

- It is important to clearly define the date and times of seasonal closures, even to the minute.
- Describe what activity is allowed to occur before, during, and after the closure. For example: "all gear must be hauled in prior to the closure and gear may not be set prior to opening the closed area."
- For high-value, short-duration fisheries, fishing for other species with the same or similar gear should be prohibited for at least 72 hours before and after the established closed season.
- Minimize exemptions or exceptions to prohibited activities during the closed season. If possible, avoid the allowance of gear placement or transport prior to the opening of a closed season.
- Enforcement is enhanced if retention, possession, purchase, and sale of species included in a seasonal closure are all prohibited. Violations could then be inferred if a covered species is encountered in the market during a closed season and would prompt an investigation into the origin of any fish or product encountered and how it got to market.
- Fisheries in which smaller vessels participate are more difficult to monitor during closed seasons. Small quantities of fish can be more easily hidden in the marketplace or sold outside of normal market channels or dealers when the season is closed.

DAYS AT-SEA

Definition: A specified number of days that are allotted for fishing for a particular species. Days at-sea are typically allocated to individuals or groups.

Average Overall Rating: 2.87

Recommendations:

- In its simplest form, days at-sea, without any exceptions or exemptions, is enforceable. However, it is labor intensive unless VMS or other electronic tracking is implemented.
- Additional complicated regulations, such as associated trip limits, should be avoided.

ELECTRONIC REPORTING

Definition: Data transmission, electronic logbooks or other digital recording systems are used to record harvest activity on a vessel. Enforceability is based primarily on use in commercial fishing operations.

Average Overall Rating: 3.05

Recommendations:

- Reporting systems should be established to record and transmit data as soon as possible after actual harvest activity occurs.
- Delayed reporting should be specified to occur on a daily or weekly basis. Lengthy delays between harvest activity and required reporting intervals reduce the effectiveness of enforcement monitoring.
- Data storage systems should be readily accessible to enforcement personnel in the field or on the water.
- Regulations should include provisions requiring tamper-resistant and tamper-evident electronic monitoring units.

GEAR MARKING

Definition: Regulations require specific marking of gear to identify the owner or permittee, to mark the location of gear that may not be visible at the surface, or for other identification purposes.

Average Overall Rating: 3.50

Recommendations:

- Regulations specifying the marking of gear should be clear and unambiguous as to the exact markings to be used, tags or tag placement, information included on any markings, visibility requirements or size of markings, and all other marking details to ensure standardized criteria can be enforced.
- Exceptions or exemptions to any gear marking requirements hinder overall enforcement efforts.
- To the extent possible, markings should be required to be located where enforcement personnel can easily and quickly inspect them both when deployed and while onboard awaiting use.

GEAR REGULATIONS (excluding method of take)

Definition: Specific gear types or gear modifications are restricted or prohibited. “Gear” might include not only the primary methods and tools to harvest the resource, but also the vessel, horsepower, number of traps, mesh size, and other such variables. In some cases, gear regulations might stipulate a

particular type or design (e.g., bycatch reduction devices, number of pots on a trawl, or escape panels on traps, etc.).

Average Overall Rating: 3.42

Recommendations:

- Limitations on the maximum length of line, number of fixed gear/hooks, traps or pots are extremely difficult to enforce and labor intensive to monitor on the water.
- Regulations stipulating how gear is to be deployed (e.g., soak time, net, or trawl depth) are difficult to enforce because of inspection requirements once the gear is deployed or being actively worked.
- Monitoring and checking gear require specialized equipment and training, and enforcement agencies may incur liability costs while handling gear.
- If a gear limitation is employed to restrict or control catch, an associated catch limitation should also be implemented. For example, a mesh size restriction to control the size of fish caught should have a companion minimum or maximum fish-size regulation.
- Standardize gear requirements, measurement procedures, equipment, and techniques across all appropriate jurisdictions and time periods.
- Trap limits are more enforceable in conjunction with trap tags being required on all traps at-sea (i.e., not transferable from trap to trap while underway).
- If a specific type of gear is prohibited for use in a fishery, then carriage of the gear type should also be prohibited.
- When considering specific gear restrictions within the recreational sector, such as terminal tackle in a hook and line fishery or prohibited use of a "gaffing" type device to retrieve a specific species of fish, officers must prove use of said equipment. The possession is not typically a violation unless possession on board a vessel or possession while fishing is articulated in the regulation.

GEAR RESTRICTED AREAS

Definition: Areas where the use of specific fishing gear is prohibited. Regulations may also prohibit the possession of such gear in the specified area.

Average Overall Rating: 3.05 (3.14)

Recommendations:

- These are labor intensive regulations to enforce. A gear restricted area often requires a boarding to determine if specific gear is legal, such as nets of a specific mesh size.
- In general, gear prohibitions are more enforceable than gear restrictions. Areas prohibiting nets are more enforceable than areas restricting certain net mesh sizes. Trap prohibitions are more enforceable than restrictions on certain trap types or sizes.

- Prohibit possession of restricted gear, rather than prohibiting "use" in a gear restricted area.
- Do not allow the use of similar gears within the area. Law enforcement assets may be able to differentiate between a trap boat and a dragger from a distance but will have to conduct a boarding to differentiate between two types of draggers.

HARVEST TOLERANCE (weight/volume/percent)

Definition: A catch is allowed to exceed a legally defined limit of allowable harvest by a defined amount. This may allow retention of over or undersized animals or retention of a defined number of harvested species over a specified landing limit.

Average Overall Rating: 2.74

Recommendations:

- Tolerances are often applied to large catches or landings, and so they may require extensive time and labor to verify the weight, volume, or percentage of the catch that exceeds a specified limit.
- Additional tools or equipment may be required to assess amounts of catch exceeding a specified limit.

ITQ / IFQ / LAP

Definition: Individual or vessel transferable fishing quotas and limited access programs where a specified amount of the total allowable harvest of a species is allotted to that individual or vessel. Such individual allotments may be taken over the course of a fishing season or year. This management measure is considered as it applies to commercial fishing operations only.

Average Overall Rating: 2.69

Recommendations:

- Enforcement is limited by the ability to monitor and verify individual quota limits and reported harvests under that quota. Real-time access to landings information is essential and it often requires cross-agency 24/7 communications.
- Regulations must limit the number and location of authorized landing points to ensure proper harvest monitoring and dockside enforcement.
- Specific call-in procedures should be established to maximize dockside enforcement capability.
- Monitoring and enforcing individual quotas are labor intensive. Because of variable and extended times during which an individual could fish, it is difficult to focus enforcement efforts for maximum effectiveness.

LIMITED DRAG OR SOAK TIME

Definition: This management measure limits the amount of time between deploying and hauling back the gear, normally to allow for live discards of bycatch. This management measure is considered as it applies to commercial fishing operations only.

Average Overall Rating: 1.89

Recommendations:

- Ensuring that specified time limits are followed requires close, at-sea enforcement of fishing operations, and/or onboard observer capabilities.
- Electronic reporting, onboard video monitoring, and vessel monitoring systems provide needed additional support for enforcement monitoring.

MAXIMUM/MINIMUM SIZE LIMIT

Definition: Possession of fish below/above a specified size is prohibited. *See also "Slot Limits"!*

Average Overall Rating: 4.53

Recommendations:

- This type of regulation is considered among the more straightforward and enforceable regulations, at least as it would apply to small quantities of catch.
- Standardized measurements, procedures, equipment, and techniques must be used across jurisdictions to be effective.
- Exceptions allowing at-sea or onboard processing hinder enforceability. There should not be any allowable filleting at sea. Measurement standards should stipulate head and tail intact.
- Maintain size limits for a minimum of 2-3 years to maximize compliance.
- Clearly explain in the regulation exactly how a species is to be measured (e.g., total length, curved fork length, fork length, etc.).
- Specified size tolerances are not necessary and complicates officer discretion in dealing with individual violations.

METHOD OF TAKE

Definition: A regulation stipulating a particular type of gear or fishing operation for legally harvesting a species. *See also "Gear Regulations (excluding method of take)."*

Average Overall Rating: 3.37

Recommendations:

- If a certain gear type is prohibited, that gear should not be allowed onboard if otherwise legal fishing gear or operations are being employed.
- Regulations should specifically prohibit the possession of any net with prohibited mesh sizes from being onboard the vessel. Similarly, if a net, pot, longline, or other gear type is required to be modified to reduce bycatch, then the possession of any gear not properly modified should be prohibited, not just prohibited from use.
- When considering specific gear restrictions within the recreational sector, such as terminal tackle in a hook and line fishery or prohibited use of a "gaffing" type device to retrieve a specific species of fish, officers must prove use of said equipment. The possession is not typically a violation unless possession on board a vessel or possession while fishing is articulated in the regulation.

PERMITS

Definition: Fishing (usually for an identified species) is only authorized by the issuance and possession of a permit.

Average Overall Rating: 4.61

Recommendations:

- This is considered among the more straightforward and enforceable regulations.
- Successful enforcement depends on real-time access to permit-holder databases.
- Technologically sound permit tracking systems should be implemented or already in place for any permit requirement.
- Laws or rules should provide for permit suspension and revocation upon successful prosecution of fishing violations.
- Permit numbers should be required to be displayed on commercial fishing vessels. Permits must always be in the possession of the fisher or vessel.

PROHIBITED SPECIES

Definition: Possession or retention of a particular species or group of species is prohibited.

Average Overall Rating: 4.55

Recommendations:

- This is considered among the more straightforward and enforceable regulations.
- For difficult-to-identify species, it may be necessary to include species groupings in a prohibition, or to ensure adequate identification training and tools for both fishers and enforcement personnel.

- Prohibitions should be restricted to a species or group of species across the board. There should be no exceptions for where it was taken or how it was harvested.
- Any permitted species kept on board must remain in a form easily differentiated from similar prohibited species.

SLOT LIMIT

Definition: Retention and/or possession of any species outside of a specified size range is prohibited. A slot limit may prohibit possession between a certain size range, or it may prohibit possession above or below a certain size range. *See also "Maximum/Minimum Size Limit"*

Average Overall Rating: 4.61

Recommendations:

- Regulations should clearly stipulate the range of the slot size and measurement standards should be consistent across all appropriate jurisdictions.
- Provisions allowing onboard filleting of fish or other processing of animals hinder enforcement of slot limits.

TAGGING, LABELING OR MARKING OF MARINE SPECIES

Definition: The act of placing an approved manufactured tag, label, or a manipulation/alteration of the respective marine species for the purpose of marking a marine species for a management purpose.
Average Overall Rating: 4.00

Recommendation:

- The tag should be an approved device that is identifiable, traceable, and tamper proof.
- The tag should be placed on a marine species in a location that will cause least harm to the species whether alive or dead.
- When any alteration to a marine species (i.e., fin clipping, v-notching or other) the requirement should be consistent among all jurisdictions.
- Improved documentation and labeling of fish and fish products would enable law enforcement to track such products back to the harvester and/or the initial purchaser and to intercept unlawful seafood product at various points between harvest and final sale for consumption.

TARGETING PROHIBITION

Definition: A regulation that prohibits the act of fishing for a particular species, to the exclusion of effort to catch other species.

Average Overall Rating: 1.87

Recommendations:

- This management measure is the least enforceable of the 27 considered in the *Guidelines*.
- Enforcement would require a level of physical observation and surveillance beyond the scope of most agencies.
- Any regulation that requires law enforcement to prove the "intent" of a fisher is less enforceable and difficult to prosecute.

TRIP LIMITS (daily)

Definition: A specified amount of a species is allowed to be caught and possessed onboard or landed by weight, volume, or number, daily. In most situations this applies to commercial fishing regulations. It is a form of possession limit intended to slow down the rate of harvest in a commercial fishery.

Average Overall Rating: 3.82

Recommendations:

- Enforcement is typically restricted to dockside and requires adequate measuring capability while offloading. Checking and verifying a trip possession limit at-sea is extremely difficult.
- A "possession limit" as opposed to a "landing limit" would allow better at-sea enforcement.
- There is a considerable time and labor commitment to enforcing such limits, even at dockside.
- When daily trip limits are implemented a limited number of designated landing points and pre-landing reporting would enhance enforcement.
- Limit any at-sea processing to ensure accurate identification of species subject to trip limits at dockside.
- The trip limit or possession amounts should be consistently defined and used across all appropriate jurisdictions, along with any measurement standards and techniques that are to be applied.
- Allowance for multi-jurisdictional trip limits (landing flexibility) should not be considered without an adequate cooperative management program to provide for responsible fishers, clearly labeled and segregated trip limits, and sufficient sanctions for a violation of the program rules.

TRIP LIMITS (aggregate)

Definition: A specified amount of a species is allowed to be caught and possessed onboard or landed by weight, volume, or number, covering a specified duration of time. In most situations this applies to the commercial sector. It is a form of possession limit intended to reduce bycatch, provide for safety at-sea while also considering the economics of the fishing industry. Aggregate limits allow a vessel to remain at-sea fishing, rather than having to come to port with each day's possession limit. An aggregate possession limit allows for a vessel to catch a multi-day trip limits in one shortened trip but requires this vessel to stay out of a fishery for the remaining period. This type of allowance is typically based on a one- or two-week duration.

Average Overall Rating: 3.16

Recommendations:

- Most of the difficulties or concerns with enforcing daily trip limits would still apply to aggregate trip limits.
- It is even more difficult to enforce an aggregate trip limit at sea.
- This type of regulation allowing for a vessel to remain at sea and catch multiple daily trip limits precludes any significant at-sea enforcement.
- This type of aggregate program or a multi-jurisdictional trip limit (landing flexibility) program should not be considered without an adequate cooperative management program to provide for responsible fishers, clearly defined rules, and sufficient sanctions for a violation of the program rules.
- This type of program should require both a vessel monitoring system and timely electronic reporting.

TROPHY FISH ALLOWANCE

Definition: Usually applied in recreational fisheries. It allows retention of one or more fish over a specified maximum size or slot limit.

Average Overall Rating: 3.89

Recommendations:

- Any allowance for filleting or processing at-sea hinders enforcement of such provisions.
- Measurement standards should be consistent across all appropriate jurisdictions.

VESSEL MONITORING SYSTEM (VMS)

Definition: A requirement to keep a positioning transmitter (transponder) onboard a fishing vessel. The transponder transmits position and movement information at specified time intervals to the management agency.

Average Overall Rating: 3.82

Recommendations:

- As VMS use is expanded, it should incorporate data transmission regarding gear onboard and the fish being targeted. It can increase the efficiency and effectiveness of enforcement patrols and inspections but does not replace on-the-water or dockside enforcement requirements.
- VMS should be considered for any large-scale fishery that is conducted in remote waters or offshore where at-sea and airborne enforcement is difficult or inefficient.