Atlantic States Marine Fisheries Commission

American Lobster Management Board

May 3, 2021
1:00 – 3:30 p.m.
Webinar

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 (*D. McKiernan*)	1:00 p.m.
2.	Board Consent • Approval of Agenda • Approval of Proceedings from February 2021	1:00 p.m.
3.	Public Comment	1:05 p.m.
4.	Consider Technical Committee Recommendation on Management Strategy Evaluation Options for Gulf of Maine/Georges Bank and Southern New England American Lobster Fisheries *(K. Reardon)* **Possible Action**	1:15 p.m.
5.	Update on Development of Draft Addendum XXVII on Gulf of Maine/Georges Bank Resiliency *(C. Starks)* • Provide Guidance to PDT on Draft Management Options	2:00 p.m.
6.	Discuss Vessel Tracking for the Lobster Fishery (*C. Starks*) **Possible Action** • Update on Tracking Projects *(A. Webb and W. DeVoe)*	3:00 p.m.
7.	Other Business/Adjourn	3:30 p.m.

The meeting will be held via webinar, click here for details.

MEETING OVERVIEW

American Lobster Management Board
May 3, 2021
1:00 p.m. – 3:30 p.m.
Webinar

Chair: Daniel McKiernan (MA) Assumed Chairmanship: 02/20	Technical Committee Chair: Kathleen Reardon (ME)	Law Enforcement Committee Representative: Rob Beal
Vice Chair: Dr. Jason McNamee	Advisory Panel Chair: Grant Moore (MA)	Previous Board Meeting: February 2, 2021
Voting Members: ME, NH, MA, RI, CT, NY, NJ, DE, MD, VA, NMFS, NEFMC (12 votes)		

2. Board Consent

- Approval of Agenda
- Approval of Proceedings from February 2, 2021

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. Consider Technical Committee Recommendation on Management Strategy Evaluation Options for Gulf of Maine/Georges Bank and Southern New England American Lobster Fisheries (1:15-2:00 p.m.) Possible Action

Background

- The ASMFC Management and Science Committee (MSC) formed a subgroup during the ASMFC 2019 Annual Meeting to develop a proposal for Management Strategy Evaluation (MSE) work on ASMFC-managed species. American lobster was identified as a priority candidate species for an MSE in the immediate future.
- In February 2021, the Board discussed a prospective work plan to outline potential focal areas, resource needs, and associated workload tradeoffs for a management strategy evaluation (MSE) of the lobster fishery. The Board agreed an MSE could allow environmental and economic factors to be more effectively incorporated into management. They tasked Technical Committee to identify timelines and cost estimates for developing an MSE for both stocks with several potential focal areas, including recommendations from the SNE stock assessment **(Briefing Materials)**.

Presentations

- Management Strategy Evaluation Options for American Lobster by K. Reardon

Board Actions for Consideration at the Meeting

- Consider initiating a formal process and forming a steering committee to develop lobster management goals and objectives and an MSE work plan

5. Update on Development of Draft Addendum XXVII on Gulf of Maine/Georges Bank Resiliency (2:00-3:00 p.m.)

Background

- Addendum XXVII was initiated in 2017 to proactively increase resilience of the GOM/GBK stock but stalled due to the prioritization of Atlantic right whale issues. After accepting the 2020 Benchmark Stock Assessment for American lobster, the Board reinitiated work on the draft addendum in February 2021, with a focus on developing a trigger mechanism that would automatically implement management measures to improve the biological resiliency of the GOM/GBK stock if the trigger is reached.
- The Plan Development Team (PDT) and Technical Committee have met a number of times to discuss the development of management options for the draft addendum. Both groups highlighted a need for additional guidance from the Board on the priorities and objectives for issues in the addendum **(Briefing Materials)**.

Presentations

- Update on the Development of Draft Addendum XXVII by C. Starks

Board Actions for Consideration at the Meeting

- Provide guidance to PDT on draft management options

6. Discuss Vessel Tracking for the Lobster Fishery (3:00 p.m.-3:30 p.m.) Possible Action

Background

- In October 2020, the Board reviewed the results of the electronic vessel tracking pilot program, which was initiated through Addendum XXVI. Recognizing that electronic tracking could significantly improve the information available to fishery managers and stock assessment scientists, the Board supported an expanded pilot project and future work on data integration and hardware testing.
- Massachusetts and Rhode Island have collaborated on a pilot project integrating cell-based tracking with ACCSP's SAFIS eTRIPS mobile trip reporting application. Five devices were tested, and the pilot demonstrated that tracks can be tied to trip reports. Additional work is being done to create trip viewers within SAFIS eTRIPS online.
- Several Board members have expressed the critical need for electronic tracking to characterize spatial and temporal effort of the lobster Jonah crab fishery. In particular, there is an acute need for electronic tracking in the offshore fishery. Enhanced spatial and temporal effort data is needed to address a number of challenges the fishery is currently facing, including protected species interactions, marine spatial planning for renewable energy, and enforcement of regulations **(Supplemental Materials)**.

Presentations

- Review of Electronic Vessel Tracking Benefits and Needs by C. Starks
- Update on Tracking Project by A. Webb and W. DeVoe

Board Actions for Consideration at the Meeting

- Consider writing a letter to NOAA Fisheries to recommend requirement for vessel tracking in federal waters

7. Other Business/Adjourn

American Lobster and Jonah Crab TC Task List

Activity level: High

Committee Overlap Score: Medium

Committee Task List
Lobster TC • Spring 2021: Provide recommendations on MSE focal areas, timelines, and costs • Spring-summer 2021: Provide analysis for development of Draft Addendum XXVII • Annual state compliance reports are due August 1 *Jonah Crab TC* • Spring-Summer 2021: Develop recommendations on initiating Jonah crab stock assessment • Annual state compliance reports are due August 1

TC Members

American Lobster: Kathleen Reardon (ME, TC Chair), Joshua Carloni (NH), Jeff Kipp (ASMFC), Kim McKown (NY), Conor McManus (RI), Chad Power (NJ), Tracy Pugh (MA), Burton Shank (NOAA), Craig Weedon (MD), Somers Smott (VA), Renee St. Amand (CT)

Jonah Crab: Derek Perry (MA, TC Chair), Joshua Carloni (NH), Chad Power (NJ), Jeff Kipp (ASMFC), Conor McManus (RI), Allison Murphy (NOAA), Kathleen Reardon (ME), Chris Scott (NY), Burton Shank (NOAA), Somers Smott (VA), Corinne Truesdale (RI), Craig Weedon (MD)

PDT Members

American Lobster: Kathleen Reardon (ME), Joshua Carloni (NH), Corinne Truesdale (RI), Allison Murphy (NOAA)

DRAFT PROCEEDINGS OF THE

ATLANTIC STATES MARINE FISHERIES COMMISSION

AMERICAN LOBSTER MANAGEMENT BOARD

Webinar
February 2, 2021

These minutes are draft and subject to approval by the American Lobster Management Board.
The Board will review the minutes during its next meeting.

Draft Proceedings of the American Lobster Management Board
February 2021

TABLE OF CONTENTS

INDEX OF MOTIONS

ATTENDANCE

Board Members

Pat Keliher, ME (AA)
Sen. David Miramant, ME (LA)
Cherie Patterson, NH (AA)
Ritchie White, NH (GA)
Dennis Abbott, NH, proxy for Sen. Watters (LA)
Dan McKiernan, MA (AA)
Raymond Kane, MA (GA)
Sarah Ferrara, MA, proxy for Rep. Peake (LA)
Jason McNamee, RI (AA)
David Borden, RI (GA)
Eric Reid, RI, proxy for Sen. Sosnowski (LA)
Colleen Bouffard, CT, proxy for J. Davis (AA)
Bill Hyatt, CT (GA)
Maureen Davidson, NY, proxy for J. Gilmore (AA)
Emerson Hasbrouck, NY (GA)
John McMurray, NY, proxy for Sen. Kaminsky (LA)
Joe Cimino, NJ (AA)
Tom Fote, NJ (GA)
Adam Nowalsky, NJ, proxy for Sen. Houghtaling (LA)
John Clark, DE, proxy for D. Saveikis (AA)
Roy Miller, DE (GA)
Craig Pugh, DE, proxy for Rep. Carson (LA)
Mike Luisi, MD, proxy for B. Anderson (AA)
Russell Dize, MD (GA)
David Sikorski, MD, proxy for Del. Stein (LA)
Pat Geer, VA, proxy for S. Bowman (LA)
Shanna Madsen, VA, proxy for Sen. Mason (LA)
Allison Murphy, NMFS
Mike Pentony, NOAA

(AA = Administrative Appointee; GA = Governor Appointee; LA = Legislative Appointee)

Ex-Officio Members

Kathleen Reardon, Technical Committee Chair
Grant Moore, Advisory Panel Chair

Staff

Robert Beal
Toni Kerns
Maya Drzewicki
Kristen Anstead
Lindsey Aubart
Pat Campfield
Emilie Franke
Lisa Havel
Sarah Hylton
Chris Jacobs
Jeff Kipp
Laura Leach
Savannah Lewis
Sarah Murray
Mike Rinaldi
Julie Defilippi Simpson
Caitlin Starks
Deke Tompkins
Geoff White

Guests

Karen Abrams, NOAA
John Almeida, NOAA
Jennifer Anderson, NOAA
Nathan Andrews, RI DEM
Michael Asaro, NOAA
Pat Augustine, Coram, NY
Richard Balouskus, RI DEM
Peter Benoit, Ofc. of Sen. King, ME
Dave Bethoney, CFR Foundation
Alan Bianchi, NC DENR
Karen Bradbury, Ofc. Sen. Whitehouse
Delayne Brown, NH F&G
Emily Brown, ETHS Foundation
Jeff Brust, NJ DEP
Mark Capone, NOAA
Joshua Carloni, NH F&G
Beth Casoni, American Lobstermen
Patrick Cassidy
Joe Cavaluzzi
Mike Celestino, NJ DEP
Yong Chen, Univ. Maine
Matthew Cieri, ME DMR
Heather Corbett, NJ DEP
Nicole Lengyel Costa RI DEM

Guests (Continued)

Jessica Daher, NJ DEP
Justin Davis, CT (AA)
John DePersenaire, RFA
Greg DiDomenico, Lund's Fisheries
Renee DiPippo
Steve Doctor, MD DNR
Chair Dollar, DBF
Tim Donovan, NOAA
Michelle Duval, MAFMC
Wes Eakin, NYS DEC
Aubrey Ellertson, CFR Foundation
Julie Evans
Catherine Fede, NYS DEC
Lynn Fegley, MD DNR
Marianne Ferguson, NOAA
Cynthia Ferrio, NOAA
James Fletcher
Rick Frenzel, Black Tree Inc
Erica Fuller, CLF
Jack Fullmer
Alexa Galvan, VMRC
Jim Gilmore, NY (AA)
Angela Giuliano, MD DNR
Sonny Gwin, Berlin, MD
Jon Hare, NOAA
Amelia Harrington, Univ. ME
Marin Hawk, MSC
Heidi Henninger, Offshore Lobster
Jay Hermsen, NOAA
Helen Takade-Heumacher, FL FWS
Cameron Hodgdon, Univ. ME
Asm. Eric Houghtaling, NJ (LA)
Rachel Howland, NC DENR
Peter Hughes, Atlantic Capes
Bob Humphrey
James Jewkes
Ellen Keane, NOAA
Adam Kemberling
Noah Khalsa, Univ. ME
Richard Klyver, Blue Planet Strategies
Rob LaFrance, Quinnipiac Univ.
Wilson Laney
Charles Lynch, NOAA
John Maniscalco, NYS DEC
Dan Marrone, NOAA
Gregory Mataronas
Patrice McCarron, Maine Lobstermen
Kim McKown, NYS DEC
Conor McManus, RI DEM
Nichola Meserve, MA DMF
Alicia Miller, NOAA
Pat Moran, MA OLE
Jerry Morgan
Brian Neilan, NJ DEP
Kennedy Neill
Jeff Nichols, ME DMR
Scott Olszewski, RI DEM
Gerry O'Neil, Cape Seafoods
Derek Orner, NOAA
Danielle Palmer, NOAA
Ruth Pelletier, UNE
Derek Perry, MA DMF
Mariah Pfleger, OCEANA
Nick Popoff, FL FWS
Tracy Pugh, MA DMF
Jill Ramsey, VMRC
Jocelyn Runnebaum, TNC
CJ Schlick, NC DENR
Eric Schneider, RI DEM
Alicia Schuler, NOAA
McLean Seward, NC DENR
Burton Shank, NOAA
Kara Shervanick, NOAA
Thomas Sminkey, NOAA
Somers Smott, VMRC
Erin Summers, ME DMR
Pam Thames, NOAA
Wes Townsend
Marisa Trego, NOAA
Corinne Truesdale, RI DEM
Beth Versak, MD DNR
Jesica Waller, ME DMR
Megan Ware, ME DMR
Anna Webb, MA DMF
Craig Weedon MD DNR
Zach Whitener, GMRI
Kelly Whitmore, MA DMF
Angel Willey, MD DNR
Chris Wright, NMFS
Sarah York, NOAA
Phil Zalesak
Erik Zlokovitz, MD DNR
Renee Zobel, NH F&G
Chao Zou, NOAA

The American Lobster Management Board of the Atlantic States Marine Fisheries Commission convened via webinar; Tuesday, February 2, 2021, and was called to order at 8:30 a.m. by Chair Daniel McKiernan.

CALL TO ORDER

CHAIR DANIEL McKIERNAN: Welcome to the American Lobster Management Board. It's February 2, 2021, and I am Dan McKiernan from the Commonwealth of Mass, and I'm the Board Chair.

APPROVAL OF AGENDA

CHAIR McKIERNAN: First on the agenda would be the approval of today's agenda. Are there any recommended changes to the agenda? Toni, I will ask you to keep an eye opened for raised hands for me.

MS. TONI KERNS: Yes, I don't see any hands.

APPROVAL OF PROCEEDINGS

CHAIR McKIERNAN: Next on the agenda is Approval of the Proceedings from the October 19, 2020 meeting. Are there any recommended changes or any discussion needed on that proceedings?

MS. KERNS: I see no hands.

PUBLIC COMMENT

CHAIR McKIERNAN: Next is Public Comment. We have a very lengthy agenda today, but if there is anyone who would like to speak on an item that is not on today's agenda, we would give you a few minutes to speak. Raise your hand and let us know, if you have any other business this morning.

MS. KERNS: I don't see any hands, Dan.

CHAIR McKIERNAN: Obviously, today's meeting is going to be very much heavy on recent federal actions and the issues that are before the states, as a result of a lot of ongoing federal activities, especially this Large Whale Take Reduction Plan. That is the first thing on the agenda this morning. We all know that the Large Whale Take Reduction Team met almost two years ago.

We're very busy working with our fellow partners, especially back in my home state, as we deal with devising proposed regulations to address the risk of entanglement with northern right whales in the crab and lobster trap fisheries.

REVIEW AND DISCUSS PROPOSED RULE AND DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR ATLANTIC LARGE WHALE TAKE REDUCTION PLAN PROPOSED MODIFICATIONS FOR 2021

CHAIR McKIERNAN: Today we have a presentation from Jen Anderson, to examine the proposed rule, and take some clarifying questions on that. Why don't we get right to that? I'm sure her presentation is going to be very enlightening. Is Jen cued up, Toni?

MS. KERNS: She got booted out. It says she's offline. I know she said she might lose power.

MS. JENNIFER ANDERSON: Okay, I think we're good.

CHAIR McKIERNAN: Welcome, Jenn.

MS. ANDERSON: Good morning. I can't tell if I'm getting through.

MS. KERNS: Jen, we can hear you.

MS. ANDERSON: (Lost words, poor reception)… Northeast Fisheries Science Center, along with Ellen Keane, who keeps her efforts on the batched biological opinion. When we get to the Q and A process, they should be able to chime in, and hopefully get us over the hump. I do have a pretty good storm going, so if I drop you guys, I'll do everything I can to jump back on as quickly as possible. My Wi-Fi is a little intermittent this morning.

As I mentioned, we're going to be doing the Take Reduction Plan I'll review, and then the Section 7 Consultation Review. Just to give a sort of road map of how we'll go. I'll provide a brief recap of the

measures being proposed in the proposed modification to the Atlantic Large Whale Take Reduction Plan.

The Proposed Rule and the Draft Environmental Impacts came out and were released for review and public comment on December 31. The purpose of the Atlantic Large Whale Take Reduction Plan is to reduce the impacts of incidental injuries and deaths in commercial fisheries on North Atlantic Right Whale, humpback, and fin whales.

However, modifications you have over the years has been focused on reducing serious injuries and mortalities to right whales, which is the most endangered of the listed large whale. The scope of the current action is focused on the northeast American lobster and Jonah crab trap pot fisheries in state and federal waters.

I'll also be discussing the draft Batched Biological Fisheries Opinion. Section 7 of the Endangered Species Act requires federal agencies to ensure that any action taken by a federal agency is not likely to jeopardize the continued existence of listed species, or destroy or adversely modify critical habitat.

Today's presentation is intended to provide an overview to help you review and provide input on the Draft Opinion, which is due by February 19, just a few weeks out. As I'll review, this consultation considers federal waters fisheries in the Greater Atlantic Region under the Magnuson-Stevens and Atlantic Coastal Act. That is just an overview we're kicking off first with the Environmental Impact Statement and the Proposed Rule.

First, just a little bit of history on the rulemaking process. The Take Reduction Team had started meeting back in 2008, but didn't have a consensus about the level of risk reduction that was needed to achieve the potential biological removal and uncertainty regarding how to compare risk reduction proposals. Starting in April, 2019, we provided some updates, NMFS did to try and help the process. First, we created a target risk reduction level, to better characterize the size of the risk reduction needed to achieve potential biological removal. Based on what we knew about documented entanglements and related serious injuries and mortalities, we determined that a 60 percent risk reduction was needed to reduce those injuries and mortalities to fewer than one per year. Because many mortalities occur unobserved, we also provided an upper goal of an 80 percent reduction. To help us evaluate and compare how different measures work toward achieving that goal, our Science Center created a decisions support tool, to help compare among the management measures.

However, at that April meeting in 2019, we were able to bring in our staff who could use the decision support tool to model the risk reductions of both targets that were being proposed by team members. This allowed us to determine how much those measures reduced risk relative to the 2017 baseline risk. I also need to acknowledge at this point that the target we provided to the team included assumptions that were not accepted by all team members

The decision support tool, as used in April, was still in development. But both were subsequently, or it was subsequently peer reviewed in late 2019, and the target was considered to be reasonable, given the data that we had available, and the input from the peer review has subsequently been used to continue to improve that model over the last year and a half.

We gave a final piece of advice to the TRT related to the scope of the recommendations that they would need. Because of the urgent need for management measures we focused our efforts initially on the northeast lobster and Jonah crab pot fisheries, because they account for around 93 percent of the vertical lines that occur where right whales are found.

The framework that the Take Reduction Team provided us was not directly translated into regulations. Some measures required further clarification. For example, one group committed to rapid research in development of measures to approve that 50 percent target, and one jurisdiction

indicated that they needed stakeholder input before they could confirm the agreed upon measures.

Additionally, just like the Council and the federal process that I think most of you are familiar with. Through NEPA we conducted broad public scoping, in spite of development of the Draft Environmental Impact Statement. In addition to considering the teams recommendation to use the input we received through our scoping process and input from the states. We also followed a number of basic principles, starting with the April recommendations and our commitment to demonstrate at least a 60 percent risk reduction.

Further, we followed the team's recommendation to broadly apply reduced line and weak rope measures across the board, to develop measures that spread that risk reduction across jurisdictions throughout the northeast. We recognize that the need to adapt the diverse fishing positions across the region, that included the first consideration of the states proposals, which were also informed through stakeholder engagement.

We also collaborated with the American Offshore Lobstermen's Association, who offered options to achieve that 60 percent risk reduction among the LMA3 fishery. I think, if you look up there, we provided an overview of the maps of those areas. I believe you guys know that very well. In the end is a preferable time that NMFS developed, and that we are proposing in the Rule considers the Team's direction, with some modification of gear which will apply the most protection for the areas of predictably high seasonal aggregations of right whale, substantial risk reductions across high co-occurrence with fishing lines, and we apply the precautionary measures everywhere across the region to be resilient to ecosystem changes and associated changes in right whale distribution. As determined by the decision support tool, these measures were estimated to achieve at least a 60 percent reduction.

During its April, 2019 meeting, the Team created a near consensus risk recommendation, with all but one attending team member agreeing that NMFS should move forward on a framework of measures designed to achieve at least 60 percent. The Team's recommendation relied upon a broad application of buoy line reductions, and weak rope measures that were distributed evenly across jurisdiction.

Extensive scoping was done during the summer and early fall of 2019, and each New England state also conducted extensive scoping. Given the broad differences in how people fish, and how the fishery is conducted and managed by states across this large area. The states proposals were considered, along with other information received during scoping, including the American Offshore Lobstermen's Association.

The tools we used and why. Before we kind of go any further, I just want to touch on this. In order to select the measures and assess whether those measures might then get us to above our 60 percent risk reduction target. We used the decision support tool that was developed by NMFS, that I mentioned earlier.

This tool was first used at that April, 2019 meeting, and was of course then peer reviewed. Overall, the preferred alternative is an effort to reduce the co-occurrence of vertical lines in right whale paths by approximately 69 percent. Every line would get weaknesses introduced into them, which in total is about 30 percent of all line in the northeast.

The baseline map on the left, shows areas of co-occurrence according to current measures, or darker colors correlate to the higher co-occurrence in the dark red up there. The map on the right show's changes in co-occurrence with the implementation of the new measures we are proposing. The darker colors showing greater reductions in co-occurrence, so that one on the right with the dark blue.

We also used percent reduction in buoy lines as a proxy for the reduction in the likelihood of entanglement. Fewer lines in the water, particularly in areas of high whale occurrence, should lead to fewer entanglements. To look at the potential impact of conversion to weak line measures, a portion of all line that would be converted to full weak line or its equivalent.

The preferred alternative, this is just an overview, and I'll go into each one of these a little further. Each measure is the sum of all the measures leads us to, of course inserting weak links and maximum breaking strength at 1,700 pounds. We also achieved risk reduction by reducing the overall lines in the water, including trawling up and seasonal restricted areas. In the blue box you'll see the snapshot of the measures that go beyond just the thorough regulations, in addition to what we considered in ours, we're also looking at what the states have done. Those will be considered as going towards the overall risk reduction, and helping us achieve that 60 percent. This is just for the lay of the land. The first thing we did, of course, was the line reduction measures. We used these proposals that we had received to develop trawling up measures from the states, and the TRT as we recommended the preferred alternative changes the number of traps per trawl, based on distance from shore, as well as lobster management area.

In order to accommodate the proposed trawl up measures in LMA3, the maximum amount of groundline allowed would need to be extended from 1.5 to 1.75 pounds. We also are proposing seasonal restricted areas. It would reduce the amount of persistent buoy line in the water in those two areas during months where higher aggregations are more likely.

Here the current restricted areas are in blue, and the newly proposed areas are in yellow. Each of these restricted areas would be modified to allow locals fishing with an exempted fishing permit. A permit will be required to use ropeless gear in these areas, until the lobster regulations are modified to remove surface gear marking requirements.

The preferred alternative also contains state regulations that delay the reopening of state waters within the Massachusetts area into May, until they can confirm that the whales are no longer in the area. The two new restricted areas were identified as potential hot spots, so persistent buoy lines would be restricted under the proposed rule.

The one that you can see is south of Nantucket, and that would run from February through April, and the other is of course up around on the border between LMA1 and LMA2. That one would run from October through January. There are also two additional co-proposals that we are looking for input on, that will get included in the proposed rule.

The first co-proposal would have no restricted area, so would implement neither of those yellow boxes. The second would only implement if certain restrictions or determinations were met. The weak rope regulations were primarily from state proposals, all the lines that would be regulated out of the proposed rule will be weakened to some extent. Most proposals included weak inserts at specific points along the vertical line depending on the distance from shore.

To evaluate weak rope, any proposal that proposed using inserts that were not necessarily a full length of rope, or equivalent, which is considered to be insertions every 40 feet. We used two approaches for those to evaluate the risk reduction. For the lower bound we calculated the proportion of the proposed number of inserts, to the equivalence of full weak line.

We did that using average depth and number of inserts, and the expected scope ratio within each area. We then corrected for risk reduction, as though we were using full weak line according to that proportion. The upper bound is risk reduction considered in the depth of the lowest weak insert is equal to the proportion of risk reduction achieved.

For example, if the lowest insert is halfway down the line, the risk reduction is half of that for a full weak line. In LMA3 full weak line or the equivalent would be

required only on the buoy line up to the top of the 75 percent, allowing for full strength line to be used on other buoy line. Then we of course included gear marking, which is pretty straightforward, Maine, New Hampshire, Mass, Rhode Island in LMA3, will each get their own color. Most of these I think in some places are already being implemented. To summarize for the overall risk analysis affects. If you have listened into the Atlantic Large Whale Take Reduction Team's meetings, or participated in any way, you'll know that we have these sessions recorded.

You can certainly get more information via webinar through our Atlantic Large Whale Take Reduction Plan website. You can also learn a lot more about the full biological and account of the sex analysis that was performed not just for the preferred alternative, but also for the non-preferred.

The March, 2020 version of the decision support tool was used to sort of get us to that 66 percent reduction, and although we used that, we also used a co-occurrence model to help assess the impacts in DEIS. That was done, because at the time we were formulating everything, the decision support tool was still undergoing peer review, and our analysis wasn't quite ready for both.

We wanted to make sure that we had something to sort of benchmark against, so the co-occurrence estimated that we would have approximately a 69 percent reduction. Comments on the Proposed Rule and DEIS were due on March 1st, to be submitted to regs.gov, so finally we already received, I think around 6,000, so those are definitely coming in. Around 300 attendees have attended our sessions, 15 sessions so far, I will be kicking off public scoping meetings in the coming days.

To wrap up on this portion, the economic impacts, these are provided in millions of dollars, and it's just, this slide is just associated with the proposed measures. The first column looks at cost during the first year, and then again at six years. The first-year costs were estimated to be between 7 and 15 million, or between 1 and 2 percent of the estimated 2019 value of the fishery, which is down there at the bottom a little over $600 million.

Year 6 costs were estimated to be between 28 and 61 million or 4.5 to 10 percent of that $600 million value. We struggle a little bit to be able to give more precise cost estimates, because we can't be certain of how some costs will be borne out. For some things it is obviously very easy to estimate the cost of new gear, or sort of concrete things.

But it's a little more difficult to estimate those reductions when it goes towards what might be lost, in terms of catch over time, and so that is where you see the wide variance there. We'll do the Biological Opinion up next, just sort of an overview of what we'll get into for this one. First off, why are we discussing the Bi-Op today, and why does this have to be done? The federal agencies have to consult with NOAA Fisheries, which in this case would mean the Sustainable Fisheries Division, this consults with my division, the Protected Resources Division.

If any action might affect an ESA listed species or critical habitat. Unlike the TRT process that we just covered, which is focused more on reducing mortality and serious injury caused by fisheries. The Endangered Species Act considers all of this, so it's not just entanglements, but for example vessel strikes. To list species, even if they don't result in mortality or serious injury. Actions that may affect ESA listed species fall into two broad categories. The first are actions that may affect a species, but are not likely to adversely affect. Those would be more on the insignificant, or could be on the beneficial side of things. The second type of actions are those that may affect, or are likely to adversely affect. Those are expected, and not discountable, insignificant, or beneficial.

That is the kind of thing that triggers a formal consultation, which is what we're looking at and discussing today. Just a couple of definitions to be familiar with, that you can come back to and check on, as we go through this. Obviously, to jeopardize the

continued existence of a species would be an action that reasonably would be expected to appreciably reduce the likelihood of survival of an animal or species.

Destruction of adverse modification habitat would be diminishing the value of critical habitat, as it says up there, and then the Opinion of course is what we're talking about today, and that is what we produced, and is the conclusion of our formal consultation. This just goes over the various fisheries that we cover through this action.

It includes eight federal FMPs, and of course then the two, Jonah crab and lobster, that are covered by the Commission. The action area extends from Maine through Florida, because some of the species, I believe bluefish doesn't spawn south of Florida. The consultation includes the New England Council's Omnibus Habitat Amendment, and the Right Whale Conservation Framework.

We'll discuss both of those a little bit more when I get into the presentation. The consultation does not include the sea scallop FMP, the tilefish, Atlantic Herring, or surf clam and quahog FMPs, those were done under other different actions. This is just a list of what is current in terms of species. There are 11 likely to be adversely affected by the fisheries, including large whales, sea turtles, and listed fish.

Affects from interactions with gear and strikes by vessels as it turns it to and from a fishing grounds are considered. With respect to vessel strikes, we've preliminarily determined that the only species likely to be affected by that is sea turtles. However, interactions with gear are anticipated for all the species that you see listed on a slide there.

Gears that are considered in the opinion include both mobile and fixed season fisheries, and while today is more focused of course on the right whales, we will provide information at the end of your questions more, and want to dig into some of the other species that are also covered by the opinion. We'll talk a little bit more about this as we go through it.

Based on the analysis, we've determined that the proposed action is not likely to jeopardize a species, or destroy or adversely modify critical habitat. The opinion includes an incidental take statement, this is a statement that specifies the anticipated level of incidental take due to the authorization of the fishery.

They are covered by the opinion. Take specified in the ITS is exempt from the take prohibitions of the Endangered Species Act, and its implements and regulations. The Opinion also includes reasonable and prudent measures in terms and conditions, which are designed to help us minimize the impact of take. From here on out we'll focus more on the right whales, but I just wanted to kind of give that overall preview. First, we'll just run through sort of just the overview. We'll go through the mortality and serious injury that have been assigned to federal fisheries. The development of a conservation framework, the analysis that is used and our determination in the draft opinion.

First up is the mortality and serious injuries that are caused by fisheries, which are really simple to the analysis that we conducted. For federal fisheries, we first estimated total mortality to be the vessel strikes and entanglements. Natural mortality is not included, because there is very little evidence showing the natural mortality is a cog that might tell mortality except at the past stage.

Using data from 2010 through 2019, we estimated that on average annually, approximately 20 mortalities or serious injuries to right whales occur. That includes those that are both unobserved, but an estimated for what we'll call cryptic mortalities, from the papers you will see. In some cases, we know whether an action occurring in the U.S. were in Canadian waters, but unfortunately in many cases we do not have that information.

When the country is known, we assigned the case to a country. In those cases where it is unknown,

however, we followed the approach used by the Take Reduction Team, which is to split those mortalities and serious injuries at a 50/50 rate between the U.S. and Canada. That split was applied to all mortalities with countries unknown regardless of the cost.

Based on this, we estimated that 45 percent or approximately 9 right whale mortalities or serious injuries are occurring each year in U.S. waters. It's important to note that the interactions in Canada are also considered in this opinion, and provides some context of how our analysis is conducted. We'll jump into that a little bit in the next slide.

Next slide, just to look briefly at the serious injuries and mortalities. As I mentioned in the last, there are two pieces of information that we need to attribute to mortalities and serious injuries in the U.S. These are the cause of the mortality and injury and where it occurred. Like I said, when both are both available that is pretty straightforward.

However, since it's often not available, and we don't know where the incident occurred, we've had to divide them evenly between the U.S. and Canada. Following the TRTs approach, when we do not know the cause, like when our carcass is not recovered, or we can see the carcass but we can't get any gear, or it's so decomposed we just don't know what happened.

We use the entanglement to vessel strike ratio from cases with a known cause. In those cases, we assign 74 percent to entanglement, and to the various categories this results in 37-74 percent of the cases with missing information being assigned to entanglements in the U.S., and that is that last column on the slide. Finally, we have to apportion those mortalities in U.S. waters between the state and federal fisheries.

That is necessary, because the biological opinion is assessing the effects of the fisheries when fishing in federal waters only. In this part of the analysis, we assume that the low number of gillnet interactions occurred in federal waters, as we do not have information available to partition that between federal and state waters. For the pot trap fisheries however, we use the decision support tool to estimate where. Given it's a vast majority of vertical lines, it was greater than 99 percent. In the action area of all pot trap lines, we assume that entanglements in U.S. waters in gear that could not be identified occurred in pot trap gear.

The decisions support tool indicates that 73 percent of the risk is in federal waters, therefore we've assigned 73 percent of the entanglements to the federal fisheries. This gives us an estimate of almost 5 right whales per year suffering mortalities or serious injuries in the U.S. federal fishery. As I mentioned earlier, the analysis here considers all affects, and therefore we needed to estimate the total number of entanglements that occur, not just those from serious injuries, but also from non-lethal entanglements, which are called sub-lethal effects.

Those are the kind of effects that can reduce an animal's health, including its reproductive ability. To estimate those total entanglements, we use scarring rates from a 2019 study that the New England Aquarium conducted. That study estimates that 30 percent of the population is entangled each year.

Although that's not broken out by country by the New England Aquarium, we applied that 50/50 split, and then further split that rate down between state and federal waters, which results in the approximate estimate of 11 percent of the population being entangled in federal waters each year.

Given the mortality and serious injury numbers that have run through, we realize when we looked at this that we needed reductions in mortality and serious injury that went beyond what was being implemented by the Take Reduction Team rules I discussed earlier in this presentation, in order to ensure that the federal fisheries were not likely to jeopardize the recovery of right whale.

To determine the level of reduction that was necessary, we projected the female population over 50 years, with reductions in mortality and serious

injuries ranging from 0 to 100 percent, so we just ran a series of models, our federal model listers of applications. At the time of the analysis, the available data on mortality and serious injury was through 2018, and we had not received any viable population estimate updates.

Through using that information, we determined that a 95 percent reduction at year 10 was needed to put the population on a similar trajectory towards your trajectory that would occur in the absence of federal fisheries. We began to develop a conservation framework, which outlines the reductions needed and our approach for achieving those targets. The framework is basically a phased approach, and it lays out how we intend, or ways that we can achieve the responses, and get to the point where you kind of get past the terrible situation that we've predicted out here.

We first want to note that subsequent to determining an additional 95 percent reduction with having serious injury was needed, data in 2019 became available, so we were able to update it, and we reran those predictions. Some new information got factored in, and that's what's out in the vast biological opinion that you can comment on now. Based on that, we concluded that a reduction in mortality and serious injury had to be at 95 percent, so it didn't change much. However, we did adjust the implementation process for the framework. The conservation framework outlines our commitment to implement measures necessary for the recovery of right whales. The framework is specific to reductions in mortality and serious injury in the fisheries in the opinion.

That is the fixed-gear fisheries in federal waters, it does not apply to state waters. The phased approach describes flexibility and adaptability. We really want to be able to consider new information and make adjustments as appropriate throughout the management portion of this. In addition, the conservation framework does not specify measures that will be implemented.

This should allow us to consider input from our partners, ongoing advances in technology, new information on the distribution and co-occurrence of whales, and any other reductions in mortality or serious injury from other sources, among other factors. Given the limited time the community measures have been in effect, as well as angler changes to the community measures, and for the dynamic nature of them.

We've been unable to assess the benefits of those at this time. However, the framework takes a conservative approach, and assumes no benefit from Canadian measures right now. But we do think that using adaptive management over time, we should be able to better inform our analysis of how things are going in Canada, and we hope to be able to apply those measures to our modeling, and take more credit for those reductions in those.

The framework, as I mentioned, is intended to be adaptable. We broke it into four phases. The first is the current Take Reduction Team rulemaking that is underway right now. The second would address the mortality and serious injury in gillnet and other pot trap gear. Then in the third or fourth phases, we would require reductions in fixed gear fisheries in federal waters, and those would be in any of the fixed-gear fisheries, not limited to trap pots.

After the implementation of Phase 3, we will take complete and comprehensive evaluation, including developing new population projections, based on the information available at that time. This will include actions under other FMPs, or through the TRT, and how they continue to contribute to the goals of the framework.

During this evaluation to offer us any new information on the population and distribution, calving and survival rates, threats, changes to the fisheries and how we apportion mortality or serious injuries to cause and country. Gear mark that we hope will provide more information, and allow us to better

assign cases. The evaluations are built into the conservation framework.

Recognize that certain uncertainties are in the data need to be reconsidered and adjusted as new information becomes available. We have identified criteria for reducing Phase 4, if mortality and serious injury from other sources, as we learn that things are working better than we thought, if we're able to factor in some of those reductions from Canadian waters, then we would be able to reduce the overall mortality or serious injury that needs to be taken in the U.S. waters.

Moving into sort of the final phase of what we looked at from the Bi-Op, how we came to the jeopardy determination. In Section 7, we compare the proposed actions to a scenario without the action. This is a little different from the way no action alternatives would be considered in NEFA. In Section 7, without the action, it is considered what the proposed action is, so if no special federal fisheries were taking place. This no federal fisheries scenario is compared to the proposed action of the fisheries under the ten FMPs and the conservation framework.

In assessing whether there is a likelihood of jeopardy, you would look at the difference between the two scenarios to determine whether there is an appreciable reduction, so that difference between the yellow line and the black line. If there is an appreciable reduction, a determination is made that an action is likely to jeopardize a species. If not, no reduction in determination is made.

To assess the likelihood of jeopardy, we use both quantitative and qualitative analysis. Using the survival and calving data from our 2010 to 2019 timeframe, we projected the female population over the next 50 years. We used the 2010 to 2019 time period, because we felt it was the most appropriate, given the regime change that occurred in 2010, when the whale surge moved, looking for food, and the food shifted north. We believe that is just the most reflective of what the survival and calving rates are going to be going forward in the future.

Under both the no federal fishery and the support action scenarios, the population was declining. As you can see there was the red line on the no federal fisheries, and the blue on the proposed action. However, as described in the last slide, in Section 7 we're looking at the difference between those two lines.

The projections result in a difference of approximately 5 females birthed at year 10 under both scenarios, and it continues into years 10-40. We evaluated the proposed action qualitatively, in addition to looking at the quantitative measures. We also looked at sub-lethal effects that you would expect to be reduced for the conservation framework.

Although we couldn't quantify those to the degree with which serious injury and mortality was quantified, we could qualitatively evaluate, and determine that reductions in sub-lethal effects from entanglement would approve the trajectories of the previous slide. In other words, you know we would see a benefit, hopefully, to the animal's health from fewer entanglements.

Since Phases 3 and 4 will likely require significant reductions in your total occurrence of birth of Atlantic whales, we expect the benefits from reducing sub-lethal effects to be higher, with the implementation of those phases. That should certainly be positive. We also determined that interactions in federal fisheries are not expected to reduce the genetic diversity or results in genetic biomass.

Just ultimately, sort of repeat the determination that I mentioned above. Based on our analysis, which includes the conservation framework, we determined that the course of action would not appreciably reduce the likelihood of survival and recovery of North Atlantic right whale, compared to the no action. Last but not least, sort of just an add on. It doesn't easily fit into our analysis, but I mentioned the Canadian impacts. We know that they are doing things that are positive, and we have a good working relationship

with Canada, and will continue to try and make inroads there, incorporating the measures that they are taking into our analysis. We anticipate that we will be able to do that in the future. Just a note that that is ongoing, and it is one of the things we're working towards.

The information we can reach, you can expect to get more information about the actual documents I've discussed today, but also the points for commenting through regs.gov, in the Take Reduction Team action, or the e-mail feedback for the fisheries Bi-Op. With that I 'll stop and we can take questions.

CHAIR McKIERNAN: Thank you, Jen, that was an amazing presentation. Are there any questions at this time from members of the Board?

MS. KERNS: Pat Keliher.

CHAIR McKIERNAN: Pat.

MR. PATRICK C. KELIHER: Mr. Chairman, I've got comments and questions on both the rule and the Bi-Op, do you want to stay focused on one or the other right now, or is it all right to just go into all of them?

CHAIR McKIERNAN: Jen, would you prefer to cover the Proposed Rule first?

MS. ANDERSON: I think either, anyway, we can take it however you prefer, or we've got staff on standby.

CHAIR McKIERNAN: We'll start with the Proposed Rule first, Pat.

MR. PATRICK C. KELIHER: Proposed Rule first, okay. First Jen, I thank you for the presentation. There is obviously, as you well know, there are a lot of moving parts here. But first I want to take the opportunity to thank NOAA for working with all the states in the northeast. The fact that you've included much of what we have submitted to the Agency, is appreciated. There are two areas that were missed, or not included, not missed, not included within the areas for the Maine Plan.

One specifically, was conservation equivalencies, giving states flexibility to make adjustments. I think that is incredibly important going forward. We will have comments for Maine, regarding zone-by-zone conservation equivalency that you'll see. Could you possibly speak to why you didn't go in the direction of conservation equivalencies? There were indications that it looked like it was going to be included, and then to see it silent within LMA1 was concerning.

MS. ANDERSON: I think I'm going to see if Colleen Coogan can answer this, because I know we did discuss it, but I don't have the detail level that she does. We may have hit on the storm problems of our day, hold on just a second.

MS. KERNS: Colleen, you just have to unmute yourself, and if you're having trouble with that then raise your hand, and I can double check your sound. I think you're listed under Colleen Bouffard.

MS. CAITLIN STARKS: I don't think that she's on the webinar.

MS. ANDERSON: She was. Yes, she is on her phone, called in because of storm issues today, so I think she can't for some reason. She has unmuted her phone, but tells me she can't. For whatever reason it's not unmuting her on the system, I guess.

MS. KERNS: I just need to try to find here. Caitlin, do you see her?

MR. KELIHER: We can come back to it, Toni, if she's able to join later. I think it's the joys of a webinar. We have these types of troubles with webinars. If we were flying, we would all be stuck in an airport. I'm certainly happy to come back to that if possible. Just a last comment on the trawling up scenarios for eight traps, and the concerns about fishing four traps with a single end line. In many, many cases, those are safety requirements.

Fishermen are fishing in areas where due to vessel size or bottom type, fishing eights for those type of vessels becomes a safety issue. No need to comment. I'm not looking for an answer, but just want to stress that whenever we can take vessel safety into consideration, it's important. We'll make further comments on that with our state comments that will be submitted prior to the deadline. I'll withhold the rest of my questions and comments for the Bi-Op discussion.

CHAIR McKIERNAN: Thank you, Pat. Jen, as Chairman, but also as the Mass DMF Director, I also have a comment and a question. I would like to also thank the NMFS staff, especially at the Science Center, and at GARFO, for being very responsive to my agencies request for multiple runs of the risk reduction model, in order for us to finalize some proposals that the staff was extremely responsive, sometimes responding to us within 24 hours, really close to the holidays.

I did have one codifying question, and I'm not sure which slide it was that you showed, but it was an estimate of the number of entanglements that occurred each year, and an attribution of the entanglements to federal versus state waters, where you said that you estimate 30 percent are entangled each year, 11 percent were entangled in federal waters.

I guess that leaves 4 percent have been entangled in state waters. I guess my question is, is that based on a co-occurrence model, or was that just an assignment of those extra entanglements to the presence of vertical lines? I guess I'll reveal, my real question is, I'm surprised that even though I know there are a lot more vertical lines in state waters, I didn't think there were as many whales up against the shoreline. If you could comment on that, that would be really helpful.

MS. ANDERSON: Is that on that maybe Slide 23, the mortality and serious injuries assigned to the entanglements, where we're trying to split out the 50/50? I'm trying to figure out where it's coming out.

MS. ELLEN KEANE: Jen, this is Ellen. I think it's Slide 25.

MS. ANDERSON: Okay.

MS. KEANE: It's that one.

CHAIR McKIERNAN: Yes.

MS. KEANE: I can speak to that. This estimate is actually based on the scarring data that the New England Aquarium pulls together, and so we looked at the percentage of the population estimated entangled annually is 30 percent, and then we applied the 50/50 percent, and then we used the decision support tool to split the U.S. portion of that between state and federal waters.

CHAIR McKIERNAN: Yes. The number of 4 percent entanglements in state waters, versus 11 percent federal waters. That ratio seems a little skewed to me, but thank you for clarifying that. Who's up next for questions? Toni.

MS. KERNS: Dan, I don't see any hands up, but I do have a question, and I think it might be somewhat related to Pat's conservation equivalency question. In some of the discussion that we have had, in terms of the trawling up, and being able to, as Pat had said, do some differences in the number of traps per trawl. NOAA has come back and said it is not possible, because of regulations that are in place in the Commission plan. But the Commission doesn't have any regulations in the number of traps per trawl in our plan. We're just wondering where that is coming from.

MS. ANDERSON: I think we had not indicated. My understanding was we've not said that it wasn't possible, but rather that we wanted to ensure we had the support or ideally would like the support of the Commission. I think GC might have to speak more to the analytics of how we would get there from a rule breaking perspective. But we would certainly be open to working with the Commission. We were primarily

focused on how we have to come together to change the lobster regulations, because we wouldn't take that of course on our own.

MS. KERNS: I guess then my question is, if it's a regulation that's in the rule that comes out, how is that regulation any different than any other regulation that comes out of the rule? I see that Chip has his hand up, so maybe he would be. I don't know if you want me to go to Chip, or if you want to answer that.

CHAIR McKIERNAN: Go ahead, Toni.

MS. KERNS: Chip, if you put your hand back up, I need to find you again.

MR. CHIP LYNCH: Hi everyone. If I don't cut out, I'm experiencing those same wintery conditions. The issue that we are trying to bring up is that we are, as the federal government, we are obligated to support the Commission generally, and that can come in all different manner of doing so. But to the extent that we regulate, we have to make sure that our regulations are compatible with the Commission Plan. What you're hearing from Jen was the concept that we're coming to the Commission, not only as a legal requirement, but also really as professional courtesy. We want to work with you, we want to make sure that to the extent that we go in a direction, where we are regulating, that we don't do so in a manner that oversteps the Commission's Plan.

You know, as we all know, the Commission Plans, as detailed as they are, can be subject to interpretation by various entities, and we want to make sure that as we proceed forward in a way, and we are thinking that we are compatible with you, that we don't at the eleventh hour hear that we are indeed not compatible, which would create a legal sort of dissonance. I hope that answers the question, let me know if not.

CHAIR McKIERNAN: Toni, are you good?

MS. KERNS: Chip, I think I guess I'll follow up with you later. I just don't see how it's different than any other regulation that's in the Take Reduction Plan.

MR. LYNCH: I guess the point I was making is that it's not. When we regulate, we make sure that we check in with the Commission, to ensure that we are acting in a manner that is compatible. Hypothetically, we could act without checking in with the Commission. But we would run the risk.

MS. KERNS: Okay, thanks.

CHAIR McKIERNAN: Toni, are there any other hands up for discussion of the Proposed Rule?

MS. KERNS: I see no other hands, Dan, we have a member of the public, do you want to?

CHAIR McKIERNAN: Yes, certainly.

MS. KERNS: It's Richard Zack Klyver.

MR. RICHARD ZACK KLYVER: Thank you, Dan, and thank you Jen and Colleen for the presentation. I had brought this point up, and I still feel a tremendous amount of concern around the trawling up, and the fact that right whales and humpbacks spend a lot of time deeper in the water column.

In my experience, it's not uncommon for the right whale to dive down 15 to 20 minutes, especially off the coast of Maine, where I've watched them a lot. When they are out in deeper water, if they're feeding, they are diving down. They're spending a lot of time farther down in the water column.

The same with humpbacks when they're feeding. We now have a proposal that suggests that we'll put a weak breakaway at the top of the end line, but you have two-thirds of the end line which will have more risk, because you're adding more traps, and more weight. We know that 1600 entanglements have happened. It's estimated that 20-30 percent of the population get entangled every year. That is not all in the United States, but even at that rate, there is still a significant chance that animals will get entangled in the lower part of the end line, somewhere in U.S.

waters. I'm extremely concerned that we're actually adding more risk here. I am afraid that we're going to ask the industry, the states and all the fishermen that have so much concern over this, to change the way they fish.

Then at the end of the day, we're not going to get where we want to go. We actually increased risk. I think there should be some analysis done that really considers whether we're adding more risk, and more lethality by doing that. Do you have any perspective on that, in terms of how you evaluated that, and thank you very much?

CHAIR McKIERNAN: I think that's a question for Jen.

MS. ANDERSON: Yes, I'm going to see. I think you guys weren't able to get Colleen off of mute, but Marisa is on standby. I think we can speak to that. Toni, I think Marisa raised her hand, if you can see it.

MS. KERNS: She has not raised her hand. Marisa, your hand is raised when the red arrow is pointing down, there we go. All right, Marisa, go ahead, you have to unmute yourself first.

MS. MARISA TREGO: I'll take a stab at that. In terms of increasing lethality. I don't think we have a lot of evidence that over a certain trap trawl size that it increases too much. I think one of the trawl lengths that has been thrown out there is about 20, so over about 20 it might just be similar. But that's also why we incorporated weak points, to add in another level of precaution, so if there is a lot more weight at the bottom of the line, there is some evidence that that could help break the line with that high tension. What was the other portion of your question?

MR. KLYVER: Well, I'm just wondering if you will, you know to me it seems if you're adding a lot more weight. If you're going from 10 or 15 traps to 25, or even 45, and then a whale gets entangled in that lower two-thirds, it's at much more risk, because the breakaway is above. Whales, we know when they get entangled, they roll. They feel tension, they roll, and it's unpredictable, you know how that line is going to assemble itself around that animal. It could quickly wind up carrying a lot more weight, which could cause a more severe entanglement to them.

MS. TREGO: Yes, so there are some areas where we do have longer trap trawls with a higher break point. In LMA3, the weak line actually goes down 75 percent, so there is a little extra protection there. But that is a concern, and that is why we didn't give those areas as high a credit for weak rope, because there is still some risk there.

CHAIR McKIERNAN: Thank you, those were great questions, and I'm sure you'll take the opportunity to formally comment on this proposed rule during this comment period. Toni, is there anyone else in the queue, who would like to ask any clarifying questions of the presentation?

MS. KERNS: We have two additional members of the public, one is Jim Fletcher, and the second is Ruth Pelletier.

CHAIR McKIERNAN: All right, go ahead, Jim Fletcher.

MR. JAMES FLETCHER: As crazy as this may be, I ask, has there been a cost analysis including all of the pot fishermen who trawl for dredge gear equipment. In the early years that I fished, we fished for lobsters just trawl vents. If the whales are so important, shouldn't there be a cost analysis done to switch all of the pot fishermen to either dredge or a trawl net for a period of time, and see how much you can save the whales and the fishing. My question is, has there been analysis for switching all the pot fishermen to either dredge or trawl? Thank you.

MS. ANDERSON: Thank you, Mr. Fletcher. I do not believe that analysis has occurred. I'm not sure if that would be consistent with the Commission's rules, but we can certainly touch on it. However, I do think we had that comment from you, and we've entered it in. We'll be sure to get back to you and address that, as part of the process.

CHAIR McKIERNAN: Next member of the public, Ruth.

MS. RUTH PELLETIER: Hi, I'm a Marine Science student at the University of New England, and I was just curious about the increased risk of ghost traps and pollution from this Protection Act.

MS. ANDERSON: Thank you, meaning concerns that the weaker rope might cause gear to break away and get left out there?

MS. PELLETIER: Yes.

MS. ANDERSON: Okay, I don't know that we have evidence to suggest that is a concern. We did discuss it a little bit of DEIS. We don't know that it's anything worse. No evidence, I guess, to suggest it would be worse than what we already experience. I think that if fishermen lose pots if they lose lines, they clearly want to get that back, because there is a cost associated with it.

It's pretty common for them to grapple the gear and try to recover it. We would expect that to continue. The proposals have been built in a way that would hopefully avoid that. It's certainly not in anyone's interest, the fishermen or the whales for that to happen. But I don't think we have evidence to suggest that it's going to be a greater concern now.

CHAIR McKIERNAN: Let's move on to a discussion of the Biological Opinion. Pat Keliher, I'm going to invite you up first, since I asked you to postpone those comments from earlier.

MR. KELIHER: Jen, my first quick question around the Bi-Op. You stated it is focused on the federal water fisheries. Is the Agency expecting all the states to develop incidental take permits at this point in time?

MS. ANDERSON: No, I don't believe that we are. As you know, we've been working with the state of Maine, and with Massachusetts as some of the legal issues have come forward. But that is not something we are anticipating.

CHAIR KELIHER: Okay, thank you, I appreciate that. A follow up comment, Mr. Chairman?

CHAIR McKIERNAN: Yes, go ahead, Pat.

MR. KELIHER: Jen, try not to be overly critical here, but the Bi-Op was a gut punch. I don't know if there was a single manager sitting around the table that's been engaged that thought that the Biological Opinion was going to go nearly as far as it did, calling for upwards of a 98 percent risk reduction in a ten-year period.

What you're asking us to do is to reinvent the lobster fishery, if not all of the fisheries, at least in the northeast, at a cost of hundreds of hundreds of millions of dollars. I'm not sure how we come out the other side of this. I mean this is the single most valuable species by commercial landings in the country, and the Agency has got the cross-hairs directly on it.

I don't know why the Agency just didn't say, you need to be fishing ropeless in ten years, because it sounds like that is what the result is. Then further compounding my sleepless nights here is, we now have the United States bearing the burden of the actions of another country, in this case Canada.

They have a direct impact on risk reductions, and as such, have a direct impact on our fisheries and the fish survival of our fisheries in the United States. I think you classified the conversations with Canada as productive and meaningful. We don't know that. All we know is that there is consultation. The states need to be brought into those conversations.

We need to be at the table with those conversations, and NOAA needs to be ready to make some major changes with the importation rule that it has at its fingertips, in order to put pressure on that country. We can't be in a position where our fate, even with closed fisheries, as it says in the Bi-Op. Our fate hinges on Canada, and that's just not a great place to be. Not looking for a response on that. I felt like I

needed to put that on the record, thank you very much, Mr. Chairman.

CHAIR McKIERNAN: Jen, I have a question for you. I know that the data that went into the analysis obviously is a little bit dated. I wonder if the 14-calf count that we have going on this winter, and the much-reduced number of carcasses that were detected over the past year, gives you any optimism?

MS. ANDERSON: In terms of personal optimism, absolutely. You know it is unfortunate we can't incorporate those numbers. They are not ripe for going into the assessment, but it certainly makes us feel hopeful. I Think that you know one of the things we leaned on with doing the framework, and structuring that the way we did, was we are hopeful.

We're looking ahead and thinking, and certainly hoping that as time goes on, we're going to keep incorporating things, and seeing larger calf counts, and being able to attribute those, and make adjustments that will bring some of those reductions down, get it as healthy as necessary. Yes, I think that we are overall hopeful that we're on the right track, and that we're moving forward in a positive direction, and certainly hoping that as time comes through and we can adjust, we will be able to continue to have these good years, and factor that in.

CHAIR McKIERNAN: Toni, is there anyone else on the Board that would like to make a comment or ask a clarifying question?

MS. KERNS: Yes, we have Senator Miramant.

CHAIR McKIERNAN: All right, great, go ahead, Senator Miramant.

SENATOR DAVE MIRAMANT: Two things come up, one Commissioner Keliher already addressed, but it's worth repeating. When I believe the notes that say, we can do this, and it still will not have a positive direction. But if Canada is included it will. It starts to sound like my Marine Resources Committee here in Maine. It starts to sound like, you know, let's just do something, because people expect us to do something and the science doesn't even support it.

But I will get reelected if I do it. I just don't expect that to ever get through this Commission with that kind of science. I'm listening closely to the rest of this discussion, and I thought I was one of the strongest environmentalists in Maine, until I started reading this stuff. Thank you, and I can't wait to be educated, but I'm just having a hard time with this one.

CHAIR McKIERNAN: Toni, who's next?

MS. KERNS: It will go to the public next, Dan, but I do have a question myself if that is all right.

CHAIR McKIERNAN: Help yourself.

MS. KERNS: Thanks Jen for the presentation, really appreciate it. Pat started on the question that I was going to ask, but he didn't ask the question, so I am going to follow up. The Biological Opinion potentially could change a little bit and hinge on measures that Canada puts in place, and there have been these discussions between NOAA Fisheries and Canada in the past that the Commission and the states have not been involved in.

It seems very important for this body that manages the lobster fishery to be involved in those discussions, and to be talking to the fishermen who are fishing in the waters just north of us. What will NOAA Fisheries do to bring the Commission into those discussions, because they are vitally important to us.

MS. ANDERSON: Thanks, Toni, I appreciate your question. We, as I noted in my presentation, spent a lot of time talking back and forth through, staff has had communications with Canada. They are actually doing things. If I gave the impression that things aren't going on into that, I'm sorry. There are ongoing measures taking place up there.

The difference is just in how they do the measures, and a lot of time so far what we've seen from them is

a very dynamic approach, where they change on almost an annual basis. We're far more consistent in how we implement things here. It's easier to account for that consistency, and work it into our model. One thing we can do is check. I don't know how or if the ASMFC or states can be involved in the bilateral process, so I think we would have to get back to you on that. But it is certainly a good comment as a question of something we can take back.

MS. KERNS: Thanks, we're looking forward to hearing how that can occur. Dan, we did have David Borden raise his hand during this time, and then Patrice, I do see your hand up, just so you're in the queue.

CHAIR McKIERNAN: Yes, let's go to David first, and then on to Patrice.

MR. DAVID V. BORDEN: I would just like to follow up on this issue of a bilateral discussion. I've participated in various capacities in a number of bilateral discussions with Canada. The thing I think that is being missed somewhat by the current format, is that in those discussions we had a combination of government officials, like Mr. Pentony, and Colleen, mixed in with Council members or Commission members, or even industry members.

There was a lot, from my experience, there was a lot that was brought to the table by the industry representatives. I would even include the environmental groups as potentially being a participant in that. In other words, it's a mix on our side that eventually brought pressure to get agreements. For instance, I chaired the group that negotiated the cod, haddock and yellowtail sharing agreement with Canada.

I would just agree with Pat and Toni's comment. I think we need a different mix of people at the table with Canada, and we can't fix this problem without Canada. They've been good neighbors, and we've collaborated with them on a number of different issues. But somehow, we've got to figure out a really creative way to partner with them, and solve this problem.

CHAIR McKIERNAN: Patrice McCarron.

MS. PATRICE McCARRON: I had a few questions about the model. First, I certainly want to echo Commissioner Keliher's comments and concerns, and David Borden's about Canada, and I would add to that the question of how U.S. Fisheries are also being held accountable for vessel strikes. Does the model itself look at vessel strikes at all?

It looks like it's just dealing with entanglements. How do future reductions in vessel strikes happen and fit into this process, so that we're not being held accountable for that? Then specifically, I had a question on the third model run, which includes Canada doing a parallel exercise to the U.S. which ultimately does increase the right whale population.

I'm just curious, which fisheries in Canada are included in that? Is that just snow crab, is that lobster, is that all Canadian fixed-gear fisheries, and does that address Canadian vessel strikes at all, because that seems to be a very significant source of mortality? Then my last question is just with the baseline data. The Bi-Op itself you said goes through 2019, but it looks like the model only goes through 2018. I know we had ten right whale mortalities in Canada in 2019, and I'm afraid that when you add that year, these scenarios potentially get even worse than they are for us now. That is my bundle of questions, thank you.

MS. KEANE: Thanks, Patrice, this is Ellen, and I can, I think take a stab at those. In terms of the first question, which was how U.S. fisheries are being held accountable for vessel strikes. In our analysis we concluded that the fisheries are not likely to adversely affect large whales from vessel strikes. The only species that we found was likely to be impacted adversely affected by vessel strikes, was sea turtles.

MS. McCARRON: I'm talking about vessels strikes from like the larger Maritime industry. When you look at the observed mortalities, and you assign those to vessel strikes and entanglements. Large shipping

interests are causing additional mortalities that are independent of the fishing industry.

MS. KEANE: You're right, and so those would factor into our analysis in the environmental baseline, and so we considered 2.3 vessel strikes per year in the baseline of the model. Not in terms of what the fishery contributes, but in that overall line. Does that help any?

MS. McCARRON: Yes. My question is, clearly you have a plan to reduce our fishery by 98 percent, which is essentially to eliminate us to solve this problem. How do you get that significant portion of mortality eliminated from the larger Maritime vessel industry, and not have that full burden ride with the fisheries?

MS. KEANE: The Agency did just finish review of the vessel strike regulations, and that review is out now. It was released, I think last week. I would have to check on that. There is an opportunity to provide feedback, kind of going forward, and how to best change the measures, and we can get you that information on where to provide that feedback.

MS. McCARRON: Yes, I've got that, thank you.

MS. KEANE: Then the second question I think was the parallel exercise of Canada, and how we did that. I think this is explained more sensibly in the Biological Opinion, but basically, we wanted to compare apples to apples, and because we are unable to apportion out the vessel strikes and entanglements in fisheries, as we are in the U.S. and Canada, because we aren't able to do it in Canada, because we don't have as much information.

What we did was, we took and calculated what the percent in total reduction from all mortalities in the U.S. is, and then applied that same total reduction to the Canadian mortalities. It wasn't specific to any fishery, as I said. If we reduce in Phase 1 to this level, what is that reduction from all mortalities in the U.S. Then we use that same reduction in Canada. It was a little bit of a different approach.

MS. McCARRON: Okay that's helpful, thank you.

MS. KEANE: Then for the last one with the baseline data. We did use the most recent data from FW, the estimate came up from 2010 to 2019, and we did update our models to do that. I will have to go back and look at the Canada model. I believe that incorporates the 2019 data, but I can verify that. It should be 2010 through 2019. We kind of got the data for last minute, we were scrambling, so they might be mislabeled there.

MS. McCARRON: Okay, so the model that is in the Bi-Op, even though the tables and the documentation say through 2018, it is in fact run with the 2019 data.

MS. KEANE: Yes, so you're talking about the documentation that is the appendices talking about the projections Dan Linden did?

MS. McCARRON: Correct, yes correct that Linden paper.

MS. KEANE: Yes, we had done the model originally with the 2010 to 2018 data, and that report that is attached is the report that underwent CI review with them, just incorporation of their comments on it. However, for the Biological Opinion itself, we did update with the 2010 to 2019 data.

MS. McCARRON: Okay, that is confusing, but thank you for that clarification.

CHAIR McKIERNAN: Patrice, did you ask which Canadian fisheries were being regulated with new restrictions? Was that part of your line of questioning?

MS. McCARRON: No, I was just curious when they applied the U.S. scenario to Canada. We know which fisheries in the U.S. have to take the reductions, but it's unclear which fisheries in Canada would need to take similar reductions to achieve that end. But it sounds like it's just a generic application of Canada,

whatever they decide they would want to take 98 percent of, which probably wouldn't be that much.

CHAIR McKIERNAN: All right, thanks.
MS. KEANE: Those were probably total reductions from both countries.

CHAIR McKIERNAN: All right, Toni, are there any other hands up?

MS. KERNS: Yes, Dan, you have two Commissioners up, Ray Kane had his hand up first, and then Eric Reid.

CHAIR McKIERNAN: All right, Ray Kane.

MR. RAYMOND W. KANE: Yes, good morning. Thank you very much for the presentation. I will concur with Pat Keliher, Dave Borden and Toni Kerns, being how we are the management body that oversees the lobster industry. I believe we should be sitting at the table with the Canadians in this bilateral agreement. Secondly, I didn't get a chance to look at the ship strike paper. My question is, is the cruise line, have they got numbers in that ship strike paper? I'll do my rationale. Are the cruise lines involved in this ship strike paper?

MS. ANDERSON: This is Jen, thanks for your question. I don't have that right at my fingertips, somebody is checking. We think it is probably vessels that are greater than 65 feet, but I'll need to confirm it, so that would catch them, provided they are using AIS, which I would imagine they are.

MR. KANE: Okay, my rationale. In the past five to ten years, we're all aware of the cruise line industry, and how it's taken off. They started with the Alaskan summer cruise lines. I would venture to say, if you look historically at the cruise lines, and the increase of cruise line trips through the Bay of Fundy in the summertime, and we all know cruise lines steam at night. Their clientele, their passengers want to be in ports during the day. You've got a lot of cruise line traffic in the Bay of Fundy, and I think that should be included in that report. That's all I've got to say, thank you very much.

MS. ANDERSON: Thank you, appreciate those comments.

CHAIR McKIERNAN: Toni, who's up next?

MS. KERNS: We have Eric Reid and then Pat Keliher.

CHAIR McKIERNAN: All right, Eric.

MR. ERIC REID: I have two questions, one relates to trawling up, and one is about noise. Are they fair game at this point?

CHAIR McKIERNAN: I guess the trawling up would. I don't know that this plan is addressing noise at all. But let's go with your first one.

MR. REID: Okay, well I look at trawling up in a different context, which has to do with gear interactions in a ropeless fishing with the trawl fleet. I am concerned about the lack of economic analysis on a mobile gear fleet, because it's going to be expensive for us, for sure, when it comes to ropeless fishing.

We addressed that in New England, but I just wanted to put that out now, and Dan, my question about noise has to do with wind power. The noise generated by monopile driving, with equipment that is capable of the hammer strike somewhere in excess of 4,000 kilojoules, really hasn't been analyzed.

There is some analysis at 2,500, but we've got a lot bigger wind monopiles, and a lot bigger pile driving, and I'm concerned that the effect of noise on whales hasn't really been fully analyzed, given the capability of the installation equipment now. Those are my two comments or questions.

MS. ANDERSON: On Vineyard Wind anyway, I believe that has been analyzed. I don't have the Biological Opinion in front of me, but we did complete that, and have looked at those issues. I know that as obviously, some of the larger wind turbines are going up, and different styles and things evolving quickly. I don't

know what that means for future installations. But we have looked at things, and I can get you more information on what our findings were there, and circle back.

CHAIR McKIERNAN: That will be great, Jen. Toni, who's up?

MS. KERNS: Pat Keliher.

CHAIR McKIERNAN: Okay, Pat.

MR. KELIHER: Mr. Chairman, I know we've had a good discussion, and I don't want to end it if there are other comments, but I do have a motion for the Board to consider.

CHAIR McKIERNAN: All right, go ahead, Pat.

MR. KELIHER: I think staff has that motion, if they want to put it up. It's a little Dave Pierce-esque in length, so.

CHAIR McKIERNAN: As long as it fits on the screen, I think you'll be all right.

MR. KELIHER: There it is right there. I kept that as the standard, to fit on the screen. I think it's incredibly important that ASMFC as a body comment on these rules. They are potentially, especially the Bi-Op is potentially economically devastating. I've crafted this motion for consideration.

I would move to recommend to the ISFMP Policy Board that the Commission send letters to NOAA Fisheries, with comments on the proposed rule to amend the regulations implementing the Atlantic Large Whale Take Reduction Plan, and the draft Biological Opinion. The letter should include the following: The implementation of the rule and the Bi-Op should be completed by the end of May to ensure the court does not intervene.

The implementation timeline recommendations that address practical start dates. Supporting trawl equivalency such as 8 traps with 2 endlines equal 4 traps with 1 end line. Support enforcement and coordination with state agencies. Conservation Equivalencies that would allow for modifications related to trawl lengths. Specific to the Bi-Op, a statement that address the burden the U.S. Fishery could bear based on the actions of Canada.

CHAIR McKIERNAN: Is there a second?

MS. KERNS: Yes, David Borden.

CHAIR McKIERNAN: All right, would you like to speak to the motion, or do you think you've covered it, Pat?

MR. KELIHER: I think I've covered it, Mr. Chairman.

CHAIR McKIERNAN: Pat, I have one question in terms of the timing and who would complete the task, since the Biological Opinion comment period closes in less than three weeks. Would you be asking for the Policy Board to review a letter before the end of this meeting week, or to convene separately sometime after the meeting, and before the deadline?

MR. KELIHER: Yes, I think we're going to need probably more than this week to finish the letter, so I think the Policy Board is going to need to reconvene separately. The Policy Board could consider, you know, since the Executive Committee meets annually, the Policy Board could consider allowing that to be kind of the final signoff, as long as it's within line with this. But that is kind of my thinking on that. It's going to take a little bit of time.

CHAIR McKIERNAN: Would Bob Beal or Toni like to weigh in about the ability for the Policy Board to approve such a letter?

MS. KERNS: Bob has his hand up, Dan. Bob, are you there?

EXECUTIVE DIRECTOR ROBERT E. BEAL: Yes, I'm here. The Policy Board can sign off on a letter like this. I think the idea would be to bring it forward to the Policy Board later this week, and get their blessing to draft a letter. Then there are two options, one is what Pat Keliher said, which is the Executive Committee can approve the letter, or we can have the Policy Board

approve the letter via e-mail vote, or something along those lines. There is a little bit of risk in an e-mail vote, if there is multiple wordsmithing of a letter over e-mail, prior to approval.

But you know we've done that in the past. I think getting the Policy Board's agreement to send a letter would be good. Actually, while I'm speaking, the motion refers to letters plural in the first sentence, and then in the second it says the letter singular, should include. We just need to sort out, you know are we sending one letter or are we sending one on the draft regulations and one on the Biological Opinion? Is it more than one letter? But we can sort that out.

MR. KELIHER: Mr. Chairman, if I may, and if it's okay with my seconder for a friendly amendment here. The first bullet, we probably need to remove the implementation of the rule, because it needs to be a final rule, in order to ensure that the Court does not intervene. I think if just remove the first three words in that line on that first bullet, and it should say, the rule and Bi-Op should be completed by the end of May, if David is okay with that change.

MR. BORDEN: Okay.

CHAIR McKIERNAN: All right, Pat, any discussion on the motion from the Board?

MS. KERNS: You have Cheri Patterson.

CHAIR McKIERNAN: Go ahead, Cheri.

MS. CHERI PATTERSON: Pat, I have a question in regards to the third bullet and the fifth bullet. They seem to be saying essentially the same, they are addressing the same issue.

MR. KELIHER: I think there could be other areas that equivalencies could be looked at, so I'm looking just for more, broader statements on the development of conservation equivalencies. I mean for the most part they do focus on trawling up requirements. But as we were drafting this, and kind of catching other people's input on it, we ended up with both of those bullets. I think at the end of the day when we draft this, we could sort that out in the drafting.

MS. PATTERSON: Okay, that sounds good, thank you.

CHAIR McKIERNAN: Toni, anyone else?

MS. KERNS: No other hands, Dan.

CHAIR McKIERNAN: We can vote on this. Is there any objection to the motion? If there is raise your hand, otherwise we'll consider it adopted by consent. Toni, are there any hands up among the Board?

MS. KERNS: I assume he's not objecting, he's probably wanting to abstain, but Mike Pentony has his hand up.

MR. MIKE PENTONY: That is correct.

CHAIR McKIERNAN: All right, therefore with one abstention, this motion is considered approved. I think that covers all of this Item Number 4. Would the Board like to take a five-minute break, before we get into the Benchmark Assessment and Possible Action? I would recommend that. Toni, can we take a five-minute break?

MS. KERNS: Yes, Mr. Chairman.

MS. ANDERSON: Mr. Chairman, this is Jen. I just want to say thank you for having us today, we really appreciate the Commission's interest and your timing, and the good questions and thoughtful input that we received. Just two quick reminders the different cutoff dates for the feedback on the Bi-Op, it's February 19, and the Proposed Rule and the DEIS go to March 1, so just as you're formulating your response back to us, keep those in mind, please.

CHAIR McKIERNAN: Thank you. All right, we'll reconvene at 10:05, Toni.

(Whereupon a recess was taken.)

CHAIR McKIERNAN: Toni, are we ready to resume?

MS. KERNS: Ready to go, I think. I'm ready anyway.

CONSIDER MANAGEMENT RESPONSE TO THE 2020 LOBSTER BENCHMARK STOCK ASSESSMENT AND PEER REVIEW

CHAIR McKIERNAN: All right, next item is Number 5**,** Consider Management Response to the 2020 Lobster Benchmark Stock Assessment and Peer Review; with a possible action. I think we have a presentation, is that Caitlin's?

MS. STARKS: Yes, let me get my slide up. This is Caitlin Starks; I'm the FMP coordinator for lobster, and I'm just going to go over management response from the Lobster 2020 Benchmark Stock Assessment. To start off, I'll just cover some quick background for the discussion, and then I'll go into a review of the 2020 assessment results, and the recommendations coming out of the assessment and peer review. Then I'll wrap up with some potential actions for the Board to consider moving forward.

At the October meeting, the Board reviewed and accepted the 2020 Benchmark Assessment and Peer Review for lobster for management use, and the stock status determinations that came out of that were that Gulf of Maine and Georges Bank stock is not overfished, and not experiencing overfishing, while the southern New England stock is depleted, but not experiencing overfishing.

REVIEW STOCK STATUS, REFERENCE POINTS, AND ASSESSMENT RECOMMENDATIONS

MS. STARKS: The Board also adopted at that meeting the recommended reference points from this assessment, and then agreed to postpone decision making on a management response until this meeting. As a reminder, in the 2020 assessment, new reference points were developed to account for changing environmental conditions for the stock, and the assessment and peer review put forward three abundance reference points for Gulf of Maine and Georges Bank, which are a fishery industry target, an abundance limit, and an abundance threshold.

The fishery industry targeted the highest of the reference points, and below that level of the stocks ability to replenish itself is not considered jeopardized, but the Stock Assessment Subcommittee felt that falling below this level may indicate degrading economic conditions for the lobster fishery, and the abundance limit is below that level.

Below this threshold, stock abundance is considered depleted, and the stocks ability to replenish itself is diminished. Then finally, the abundance threshold is the lowest of the reference points, and below this level stock abundance is considered significantly depleted, and in danger of stock collapse.

Just as a note, this was the only reference point put forward for the southern New England stock, and that is due to the current condition of the stock, which is below that reference point. For exploitation, two reference points were recommended for each stock, an exploitation threshold, above which the stock is considered to be experiencing overfishing, and an exploitation target, which is calculated as the 25th percentile of the relative exploitation during the current abundance regime.

Just to quickly review where we're at with these stocks, based on the updated reference points the Gulf of Maine and Georges Bank stock abundance is not depleted, and the average abundance from 2016 to 2018 was 256 million lobster, and the fishery industry target, the highest reference point is 212 million lobster, so we're above that level.

Projections for this stock done in the assessment, suggest that there is a low probability of abundance declining below the abundance target over the next ten years. The average exploitation for Gulf of Maine and Georges Bank from 2016 to 2018 was below the exploitation target, so that means it is not experiencing overfishing. For southern New England, based on the updated reference points, the stock abundance is significantly depleted. The average abundance from 2016 to 2018 was 7 million lobster,

which is well below the abundance threshold of 20 million lobster, and the stock projections for southern New England show a low probability of the stock condition changing among the most realistic scenarios that were run. There was a sensitivity analysis conducted for southern New England, which the Board talked about last time.

This shows that in the absence of fishing mortality, reference abundance would be projected to increase, along with recruit abundance to exceed the maximum abundance for the current regime that has been seen. However, it is noted in the assessment that increases in abundance are likely to be limited, because of the projected continuing decline in recruitment. The average exploitation for southern New England from 2016 to 2018, was between the exploitation threshold and exploitation target.

That means it is not experiencing overfishing, but exploitation is not considered favorable, as it does exceed the target. The assessment and peer review also noted some additional considerations when thinking about the southern New England stock. But I wanted to remind the Board, so first recruitment indices are indicating that the stock is not rebuilding, and it is in recruitment failure.

The stock distribution has continued to contract, and it's becoming more apparent also in the offshore portion, as well as inshore areas. Landings from southern New England have continued to decline, and the time series low was in 2018. Disease prevalence also remains high in Rhode Island and Massachusetts water than all four of the temperature indicators that were looked at in the assessment are negative, and environmental stress may also be having lethal and sub-lethal effects.

Then lastly, there is evidence that environmental influences have resulted in a decreasing recruitment rate, and as a result the assessment notes that substantive measures would be necessary to increase adult abundance to improve recruitment success. In terms of recommendations coming out of the assessment and peer review, for Gulf of Maine and Georges Bank, there were no management actions recommended at this time, considering the positive condition of the stock.

But the assessment and peer review reports did recommend that some kind of economic analysis be performed to provide advice on what actions would be appropriate to stabilize the fishery, if abundance falls below the target. For southern New England, the reports did not offer specific advice for management measures. But they did state that if stock abundance falls below the abundance threshold, then significant management action such as a moratorium is recommended, to halt the decline of abundance and increase reproductive capacity and recruitment to the stock.

Recommendations that applied to both of the stocks, included that an annual data update process be implemented, to monitor changes to the stock abundance, that all indicators be updated annually, and that a science-based rule be developed, where certain conditions of those indicators would trigger an earlier than schedule assessment.

They recommended continued use and expiration of the indicators developed in the assessment, to understand the relative merits of indicator-based management, and controlled. They also suggested that a management strategy evaluation could inform appropriate management targets for measures to meet defined objectives. Now I'll transition, talking about some way forward that the Board could consider today.

D**EVELOPMENT OF DRAFT ADDENDUM XXVII ON GULF OF MAINE RESILIENCY**

MS. STARKS: At the October meeting, the Board indicated intent to move forward with the development of Addendum XXVII, which is focused on increasing resiliency in the Gulf of Maine and Georges Bank stock.

For this Addendum, staff is looking for the Board to indicate if they would like the PDT to continue developing the Addendum with a focus only on a standardization of measures across LCMAs, which is the direction it was going before it was put on hold, due to prioritization of whale issues.

The things that were being considered were things like V-notching regulations, gauge, and vent sizes, trap tags for lost traps, and a few others, in terms of standardizing those across the areas, or if the Board is interested, the Addendum could also consider incorporating a trigger mechanism, where abundance falling below the target level from the reference points would trigger a change to management measures.

Based on the assessment recommendations, the appropriate trigger and management measures should be determined through some economic analysis. If the Board is interested in developing a trigger such as this, staff can work on providing the Board with potential analyses, and what information those could provide for consideration at the May meeting.

For southern New England, today the Board could consider initiating a management action to address the depleted status of the stock. The Board could also task the Technical Committee with conducting analyses of some potential management options, to get an idea of their projected impacts on the stock.

With this route, the Technical Committee would need very specific direction, such as a range of reductions or a specific set of management measures to be analyzed. I'll also note that following the 2015 assessment, the Technical Committee did a lot of work like this, analyzing a number of different changes to management measures and their potential impact.

The advice from those exercises is largely still applicable under the current stock condition, so it might be worth seeing what the Technical Committee had already done, in terms of impact analysis. Then lastly, the Board may want to think about the potential impacts of the impending changes that will be made in the fishery, in response to the federal rulemaking on Atlantic Large Whale Take Reduction. With that, I am happy to take any questions, Mr. Chair.

CHAIR McKIERNAN: Thanks Caitlin. I guess one question that I would have is, in the seat that I sit in right now as Director at Mass DMF, I am kind of overwhelmed with the workload that's facing me and my agency over the next few weeks and months on the large whale plan, and also some litigation.

I'm wondering if folks who have similar roles as mine might want to consider not May, but maybe August, because I know the staff that I would be calling on to help me with some of these analyses, could probably use what time I'm going to need them for what is coming up over the next few months. Let's take some questions from the Board on your presentation. Toni, are there any?

MS. KERNS: So far, I don't have any hands up, Dan. You've got Mike Luisi, and then Pat Keliher.

CHAIR McKIERNAN: Go ahead, Mike Luisi.

MR. MICHAEL LUISI: You know, I guess my question would be to staff. We were talking about making changes years ago, and the Board ultimately decided not to. What information is new at this point that would direct some changes? I'm thinking about, you know we went through a long, kind of process of considering changes based on the previous assessment. Is there something new in the information that would suggest that we do something now, as compared to kind of the final decisions that we made under the previous assessment?

I don't know if that makes sense, but I'm just trying to decide if this is something that we need to take on, if we're going to consider changes is there anything new about the information, or are we going to find ourselves considering what, personally I would not support a moratorium. But are we going to go down

that road ultimately to end up in the same position we were in, you know a couple years ago?

CHAIR McKIERNAN: It sounds like a rhetorical question, but let's see if staff have a response.

MS. STARKS: Yes, for the most part it probably is a little rhetorical. My understanding is that there isn't much new information that might change the direction of the Board, in terms of action on southern New England. There was, as I mentioned, the sensitivity analysis that shows that if you remove fishing mortality, there is a chance that the stock could improve.

But there are also changing environmental conditions that we can't necessarily predict or control. I guess, in terms of the Technical Committee's advice, I've been kind of guided in that nothing about the current stock status invalidates anything that they recommended after the last assessment.

Generally, the recommendation is that if you want to see an increase in the stock abundance, large reductions in fishing mortality will still be required. I think that's all I can add at this point. There are some Technical Committee folks on the call today, if we have specific questions for them though.

HAIR McKIERNAN: I would like to keep the conversation focused on southern New England for now, so Pat, maybe I'll invite some of the other southern New England and Mid-Atlantic states to speak first, and we'll get back to you in the north.

MR. KELIHER: That's good, Mr. Chairman.

CHAIR McKIERNAN: Is there anyone else on the Board from that southern New England region would like to discuss this matter.

MS. KERNS: You have Jason McNamee, David Borden, and then I assume Cheri. I don't know if Cheri wants to speak to southern New England or not.

CHAIR McKIERNAN: Let's go with Jason, and followed by David. Jason, go ahead.

DR. JASON McNAMEE: I'll start with, I guess I'll call it a question. You know I'm thinking about the assessment information, and the projections that were done for southern New England. What I'll offer is my interpretation of those projections, and either you, or potentially a Technical Committee member, or somebody who was on the Stock Assessment Team can correct me if I'm off.

You know the projections for southern New England, you could basically decrease fishing mortality down to zero, and that is what you have to do to get any reaction, but the reaction you get from that is really minor. You know that increase, I guess. I know there are a lot of assumptions that go into those projections.

I think the critical one in this case is the recruitment assumption, and I wonder if what was used there is even something, you know we feel really confident in. I guess I yammered a lot there, so just to recap. You know even in the absence of fishing, while there is some recovery in the stock, it is modest at best. Is that a correct interpretation of the projections?

MS. STARKS: Yes. I believe so, and I'm going to call on Kim McKown, who is the SAS Chair and on the Technical Committee, and see if she has anything to add.

MS. KIM McKOWN: As far as the recruitment that is used in the projection. We used the current downward trend in recruitment for one of the runs, and what was based on our recruit covariates, those two were pretty similar. Even with those, we did see an increase. You are right, it is a moderate increase, but there would be some rebuilding. Any other questions?

DR. McNAMEE: Just a couple of other questions/comments, I guess. But thank you for that, Kim, I appreciate it. In the case of southern New

England, we're using this term depleted, and I think you know the reason for that is we believe that environmental drivers are having a larger impact on the stock, and fishing is, looking at one of the plots that Caitlin had up.

It's the exploitation relative to the reference points for southern New England, and I think there is some work we can do that we're kind of bouncing around between the target and the threshold. We are above the target. There is a little bit of work that we can do there to get to or below the target. However, going back to what Mike Luisi said.

I have to say, I agree with him. When I first came onto this Board, we were sort of in the throes of a management action, and we asked the Technical Committee to do just a ton of work. In the end we didn't feel compelled to do much of anything. I don't think we have anything new at this point, and so I guess what I would suggest, and I'll save most of this discussion for later is, I think there are things that we can do. From this point moving forward, looking at the Technical Committee's comments. I'm not sure if it was the Review Committee or the Technical Committee. But management strategy evaluation is something that could provide us some new information, which I think would help move us into actually taking some action, and not just kind of rolling forward with very little new information, and probably ending up in the same spot we did last time.

I'm hopeful that we can get some additional work done, to give us a more comprehensive understanding of what the tradeoffs are, with the different things that we might want to do in southern New England, to better inform that management process, and get us over that hump of actually taking some action in the future. Thanks, Mr. Chair, I went on for a while there. I appreciate it.

CHAIR McKIERNAN: Sure. Dave Borden.

MR. BORDEN: Jason just made the point that I was going to make, but I would add to that. I mean this is a consistent problem that the Commission has across a number of stocks. This isn't unique to just lobster. I mean we've got, and I won't go into which stocks, but we have a number of stocks that we manage that are in this type of position.

I think that we need to do something, Number 1, and I'm comfortable with a targeted management strategy evaluation. We'll get into that under the subsequent agenda item. But I'm happy with that strategy. But I think it really has to be prioritized, and focused on what we think we can do in a reasonable timeframe.

I don't think that we have the luxury, either in southern New England or northern New England, to take a lot of time on this. I think we need to get on with it, and hopefully we can kind of construct a model that would be useful to some of these other stock problems we're having with other species.

CHAIR McKIERNAN: Toni, is there anyone else with their hand up?

MS. KERNS: Jason still has his hand up. I don't know if you have a follow up, Jason. No, he put it down. Everybody else is for, I think Gulf of Maine. You had Pat Keliher, Cheri, Ritchie White, and Senator Miramant.

CHAIR McKIERNAN: Okay. I would like to get the Board's feedback. Would it make sense to have the Management Strategy Evaluation presentation now, and Jason and David Borden had mentioned that they may embrace that, kind of in lieu of an instant response, or do we want to talk about the Gulf of Maine/Georges Bank stock first? I promised we would get back to the Gulf of Maine/Georges Bank stock response after this management strategy evaluation. Pat, what are your thoughts on that?

MR. KELIHER: You are kind of reading my mind, Mr. Chairman. I think we have several items on the agenda that are kind of rolled all into one, and so what I would include on that list is maybe the discussion of the draft Addendum, as far as Gulf of Maine resiliency,

and then the management strategies, because I just want to echo what Dave Borden said.

You know there are some issues that are very time sensitive, I think. But there are also some benefits with MSE that potentially could play out here as well for a kind of more medium- and long-term issues. I would like to hear all of it, and then kind of have a more organic, open discussion about how we may want to proceed.
CHAIR McKIERNAN: Would the other northern New England delegations agree to that?

MS. KERNS: Dan, Ritchie had just said he wanted to comment on southern New England, if you're willing.

CHAIR McKIERNAN: Sure, certainly, go ahead, Ritchie.

MR. G. RITCHIE WHITE: Yes, I don't know how we go forward, but I agree with Dave Borden, and this is a continual kick the can down the road. I can't remember how long ago we met in Rhode Island, and the Technical Committee recommended moratorium, and we did not do it, and we have not done it since.

I'm not saying we should do a moratorium now. But like northern shrimp, I see no way this situation is going to get better. I think we need to, on a Commission level, try to come up with some method of addressing these stocks that regular management is not going to bring them back.

Does it make sense for us to continue regular management, is what we are doing on this stock. Northern shrimp obviously is the moratorium, and the numbers continue to get worse. Anyway, I hate to see us just leave that and we'll be doing this same thing year after year. I don't know what the answer is. But I think we need to take a different tact somehow.

MS. KERNS: Dan, you have some more hands now. Colleen Bouffard from Connecticut has her hand up.

CHAIR McKIERNAN: All right, go ahead, Colleen.

MS. COLLEEN BOUFFARD: I just wanted to echo Jay and Dave's comments, and also the feeling that we should go forward and listen to the Management Strategy Evaluation. We could take a whole lot of different management actions now, that given the effect of environmental factors on recruitment, it might not reap much of a benefit. I think it would be valuable to hear the options that we could look at in the management strategy evaluation, to kind of give us maybe some fresher ideas on how to move forward in southern New England.

CHAIR McKIERNAN: Anyone else, Toni?

MS. KERNS: I'll say this. Pat, Jason, Cheri, and Senator Miramant all have their hands up, and I'm wondering if you would put your hands down if you're okay with moving forward for hearing the MSE presentation, or if you want to speak before an MSE presentation, please leave your hand up. You have Jason and David Borden with their hands up still.

CHAIR McKIERNAN: Okay, Jason.

DR. McNAMEE: After Ritchie made his comment, I just felt compelled, and I'll try to be quick. I think the underlying point, as I interpreted it, of Ritchie's comments I think are fine. You know this idea of wanting to move forward and do something. I just want to, you know the discussion on the moratorium, I guess, is why I felt compelled to speak. This is different than northern shrimp. You remember that lobster, we talk about the separate stocks, but it's a single species, and the species is doing very well to the north. There is a spatial consideration here that I think is really important, but the species is doing fine in parts of the range.

You know when we start talking about moratorium, I think it's really important to remember that., and then this follow on to that, which again will segue way us into the following conversation is, it's really important when you start talking about really draconian measures, or less draconian measures, to understand what the tradeoffs are.

If we take a really draconian measure, or you can take some less draconian measure and end up with a similar benefit. You know that information is important to consider, when developing management. I'll stop there, Mr. Chair, and thanks for giving me another couple minutes there.

CHAIR McKIERNAN: All right, David Borden.

MR. BORDEN: Going back to your question. I would prefer, I would say, to have the MSE discussion, and then circle back to Pat's issue of Gulf of Maine resiliency, and what we do with the southern New England stock. I think we'll have a more informed discussion if we follow that sequence.

DISCUSS POTENTIAL FOR CONDUCTING A MANAGEMENT STRATEGY EVALUATION FOR THE AMERICAN LOBSTER FISHERY

CHAIR McKIERNAN: All right, so I'm going to take us in that direction. Let us go to the Item Number 6, the potential for conducting an MSE for American Lobster, so let's queue that presentation up. Jeff Kipp.

MR. JEFF J. KIPP: I'm Jeff Kipp; I'm the Stock Assessment Scientist on staff, working on lobster here at the Commission. Just to get a little background on this agenda item. The Management and Science Committee met at the ASMFC Annual Meeting back in 2019 up in New Hampshire, and they discussed Management Strategy Evaluation, and using it as a tool for managing ASMFC species.

They tasked the Subcommittee for exploring the development of Management Strategy Evaluation for use in ASMFC managed species, and they did discuss sort of some initial candidate species or stocks to develop MSE work for. American lobster was identified as an ideal candidate.

A smaller subgroup of the Technical Committee for lobster got together with this subgroup from the MSE, and talked about a potential MSE for lobster, whether they thought it was a good fit. Since then, MSE has come up several times. It was noted in the recent benchmark stock assessment as a priority by both the Peer Review Panel and the Technical Committee, as a tool for informing management in the future for lobster. The purpose of today's discussion for the agenda was, we needed to come to the Board and identify the Board's interest in pursuing an MSE, and the priority level of an MSE, given many competing management needs, as we've been discussing here today, to determine whether it would be fruitful to pursue an MSE for lobster.

We felt that that was certainly a critical first step here. You know if this isn't something that the Board sees themselves using to inform a management framework down the road, this becomes certainly a lower priority, given everything else going on. But if there is interest among the Board to use something like this, we felt that that would be really helpful to know, and then we could start exploring and moving on to some next steps to inform how to initiate an MSE.

That's a little background on why this is on the agenda for today, and with that we felt that it might be helpful to give the Board just a brief kind of 10,000-foot introduction to what a Management Strategy Evaluation is, for those that may not be so familiar with this process. I'm going to turn it over to Burton Shank up at the Northeast Fisheries Science Center, and he's going to give us that introduction to Management Strategy Evaluation.

MR. BURTON SHANK: Yes, so as a general introduction, I will try and keep this fairly brief, but provide enough detail to understand what we're discussing. Management Strategy Evaluation is a collaborative process to build a simulation tool for evaluating management actions. The first key step is that stakeholders and managers identify goals, or desired outcomes for a fishery.

The stakeholders and managers then work with a group of scientists to include population modelers, potentially including ecosystem scientists, economists, sociologists, et cetera. This is the first translate these management goals into some measurable quantity that you can capture in a simulation, and then to

identify candidate management actions that are intended to potentially achieve these management goals.

Scientists then run a very large number of these various simulations, and evaluate how different management scenarios perform for achieving management goals. In some ways, some of what we did following the 2015 assessment for southern New England, is sort of a light or simplified version of the management strategy evaluation.

The managers and stakeholders then examine the performance of different management actions under different situations, and select preferred management actions from this. Sort of a road map for all this, it starts clearly with stakeholders and managers, and getting them to identify the objectives and the long-term goal for a fishery.

What do you want this fishery to do over the next 10 years, 30 years, 50 years? Related metrics, how are you going to measure how well a fishery is doing, and if you're achieving your goals. What are the uncertainties? What are the things we don't know, or things that might come up in the future? Then propose management actions or procedures that they would like to entertain at different possibilities. This is then all communicated to a group of scientists, who basically sort of create a virtual reality simulation of the system, and what they attempt to capture within this simulation is the process of data collection, the stock assessment, implementing any harvest rules or management actions. It can include an ecosystem dynamic. Ideally it includes human or fleet behaviors, it can include economic models.

You account for uncertainties, and you record the metrics that come out of this. Initially when this happens, there are a lot of two-way conversations here. Scientists can very well say, here is what we built for the simulation, and the managers can say, no that is not what we meant at all.

Then there is a lot of conversation, understand, so that everyone is getting what they want. Scientists very possibly need clarification on exactly what it was that managers and stakeholders were looking for, and how it can best be implemented. Once this whole set of simulations is done, this is passed back to the stakeholders and managers, and you see how different management actions potentially perform, what the tradeoffs were, how well the metrics seem to work.

There is sort of a second round of feedback that occurs with people going back to the scientist and saying, what you gave us makes no sense. Is there a better way we can look at this, so we can better understand the results? After a series of back and forth then you finally understand what your different management options are, what the tradeoffs are in those, and what you might expect to get back from that.

At that point, managers can either select and implement an action, or you can have a plan or suite of plans that can be enacted in the future under set circumstances. There is a critical early role for stakeholders and managers. The first step is to identify really what they want to achieve, management goals and objectives.

An example, but not constrained to, maximizing landings, giving stable or predictable landings across different years, whether you're interested in maximizing profits or profitability, or maintaining fleet diversity and participation. Then there is the performance metrics, which is the measurements of a fisheries performance.

What is the basis for assessing if a management action was successful? Do you want to track landings, value of landings, resource health, resilience of the resource, et cetera? This is the basis for choosing among different management actions, and is used to demonstrate the tradeoffs among different objectives.

Cases where things work well, a given management action may achieve some objectives well, but not

other objectives as well. Then there is the identification of different management actions to evaluate. What should management do to achieve the objectives? This can be conceptual, or it can be very specific. Some may not be very realistic, but it can be attempted, and then explored.

This forms the foundation for management procedures and actions before simulated. Again, if some of this sounds familiar, it's similar to in many ways what we did following 2015, but on a much more complex level. What the scientist is doing is an interim closed-loop simulation. People have called it things like virtual reality or a flight simulator, sort of an opportunity to play what-if scenarios, in which there is no real-world risk. Thinking of a flight simulator analogy, you can have the reality while you're building something very complex, and you know that you can't capture all this complexity, but you can if you step forward, produce a number of models of this.

Simple simulations, everybody gets to bring their own simulation to the table. You do your best to attempt to build a model, based on what people want for the simulations, and then you can test these models out and step forward, and recognize that some of these models are going to crash, and not perform very well. Others might continue to do well. But you might learn something in the process.

There is a lot in this one to sort of unpack, but this is one concept of what this closed-loop simulation could look like. Actually, I'm going to sort of start bottom center with this, where you have a fishery population and a model. This captures exploitation effects, recruitment and growth, mortality, et cetera.

You can either have a lot of these parameters be static through a time series run, or you could simulate that these population parameters are changing, due to the environment, like ecosystem effects. From this virtual population then, you sample it to get what would look like survey indices, length composition, et cetera, and feed this into a stock assessment model.

The stock assessment model then provides population metrics, and then with the population metrics, like stock status and trends, and economic metrics coming from the fishery. Then you consider this information from the perspective of management strategy. The management strategy can be adaptive, so it can change in response to the metrics coming from the population in the economics, or it can be static.

It can simply not change. You come up with one strategy, and you keep it, no matter what happens with the fishery. Any changes of management strategy then, has impacts on the fishery, and that is captured in the socioeconomic model that looks at fishing effort, strategies, expenses, profits, et cetera for the fishery.

This then feeds back into the next round of the population model. You run the cycle again and again and again for years, and capture the performance of the fishery, and the economics associated with the fishery over that time period. At the end of it, you can come up with a summary of how this given management strategy performed, and repeat this to account for random variations that you expect are in that and then run this again for different management strategies.

For this we would point out that this is one concept of what a closed-loop simulation model could look like. The complexity of this model is really dependent on the complexity of the question, and the measures that you really want to examine. As of right now, we have candidates that could work for the fishery population model. We have a stock assessment model. There is no real socioeconomic model of any complexity available to the lobster fishery at this point. That would need to be built, if we want to entertain some more complex questions. Then there would need to be basically, build a work flow to tie all these different models to each other. This is easiest for single-species management. You can imagine how complex this could be, if the fishermen are choosing among multiple species, and you have the ecosystem affecting different species in different ways.

But this entire process for building and running these models, and providing feedback to managers, is not fast. It takes time to understand. You set them up properly. It takes time to run the simulations. It takes time to consider the output from this. Once the simulations are done, then management has the opportunity to select among the management actions that we entertained.

You are rarely going to find a single optimal action. There are many cases where you would expect multiple different actions might give you different performances on different metrics. You might find a suite of actions that perform similarly. You might find actions that perform better under some circumstances than others.

You can often eliminate options that don't seem to perform well under any circumstances, and can eliminate some obviously bad options. These actions then can be implemented immediately, or held in reserve under future circumstances, so a lot of this can simply be the value of building a plan.

Having thought through a lot of these questions and issues before a crisis happens, so that when things suddenly change and you need to make a decision, a lot of this thinking through has already happened. Then finally, we would have to consider how to scale for the strategic long-term considerations down to tactical short-term realities.

How would you start with a management action, and then actually execute that on the ground? Advantages for performing management strategy evaluation, you have to explicitly consider what your objectives are. There is a certain amount of time spent just thinking about what you actually want out of this fishery.

It does make decision making easier. Everything is sort of in a common set of units that people can discuss, and look at objectively. There is a lot of feedback control that allows the management cycle to be evaluated. There is a lot of focus on uncertainty and robustness, or resilience, not necessarily finding optimal solutions.

You do have a formal system for comparing different options, so again that sort of puts everything in a common currency, and you can look at tradeoffs associated with having multiple different objectives. The down side is, it does force you to explicitly consider what your objectives are.

It is complex, it requires specialized expertise. There is a lot of work involved. The development can be lengthy. Plan accordingly. Expect it's going to take some time to do this, especially if there is any level of complexity that you're interested in. This is not going to give you tactical advice. It is not going to tell you how to do it on the ground. It is still going to give you sort of a broad picture set of results. I think here I can pass it back to Jeff to finish up.

MR. KIPP: Yes, thanks Burton. Moving on more specifically for lobster here. This subgroup kind of got together, and they talked about some ideas on, you know given the major management issues and challenges for lobster, what some really broad focal areas might be for an initial MSE, and maybe future MSEs, to build upon an initial MSE. I'll just preface this slide with a note that a lot of these discussions were with the mindset that this would be something for the Gulf of Maine/Georges Bank specifically, as a sort of proactive tool.

Like Burton was saying, to develop a plan to give us some information and some guidance on how to respond to things that might be coming down the pipeline for Gulf of Maine, as opposed to for southern New England, where I think what we've seen previously in stock assessments and projections.

Those essentially indicate that a reduction in fishing mortality is the action that would be necessary to see any response in things like reference abundance. I just wanted to make that note, given the discussion prior to this presentation on using this for southern New England. But these focal areas, the four that we came up with and included in the work plan that came

out as a memo in meeting materials. The first was stock productivity resiliency.

This ended up being sort of what we recommended for an initial Management Strategy Evaluation, given the tools that are currently available, and datasets that are currently available to inform and MSE focusing on this issue. But broadly, this would be evaluating the performance of management actions in response to changing productivity, as has particularly been indicated by changes in settlement and young of year indices recently in the Gulf of Maine stock, and may not have yet come through the model population in landings.

But some other focal areas included, another was stock socioeconomic resiliency. This one was in response and to address the stock assessment recommendation for socioeconomic analyses, to inform management actions in response to abundance declines below that target that Caitlin mentioned previously in the review of the stock assessment.

Some other probably much more complex issues. There was a lot of time spent this morning talking about whale interactions, and I think this is straightforward here. It would be essentially to incorporate those whale interactions within the evaluation of lobster management strategies. Then another broad focal area that we have discussed was climate change impacts.

This would be explicitly linking environmental drivers to population dynamics within this valuation of management strategies. Something like stock productivity resiliency, the recommended first focal area may include environmental impacts, in the form of potentially declining recruitment in the future.

But that would be implicit in those declining recruitment trajectories, and not necessarily explicitly linked to that recruit. I just wanted to make that distinction there. Then since we've sent out the work plan and meeting materials, another topic that did come up was, you know the development of wind farms, and potential implications of those on the stock. There may be some overlap here amongst these focal areas, and a lot of it will be determined on, as Burton mentioned, the specific objectives that stakeholders and managers want to address with a Management Strategy Evaluation. Some benefits we discussed and saw for a Management Strategy Evaluation for lobster.

As we talked about here, there is the direct stakeholder inclusion in the process. It's not as much of an iterative process through time. They are directly involved in developing objectives, potential management strategies, and identifying things like performance metrics to evaluate the performance of those strategies.

The explicit incorporation of socioeconomic considerations was certainly seen as a benefit here, which is not really something that is coming through in advice from a typical or traditional stock assessment. Then there is the availability of several resources and tools currently, that would really support a lobster Management Strategy Evaluation. The lobster stock assessment model is a well vetted, well established assessment model, and that's a key component of a Management Strategy Evaluation.

Then there are also several projection models that could be used for this operating model or simulation model that simulates the population forward. There would be some work to sort of tie those and link those two components together. But those tools are readily available. Additionally, Canada DFO is developing a Management Strategy Evaluation to manage their lobster stocks, and there has been some communication between lobster scientists in Canada and the U.S.

I think there was seen a potential benefit in collaborating on MSEs for both countries, and the development of tools that could be used to support MSEs for both countries. Then another thing that has come up is the Northeast Fisheries Science Center has brought on a contractor to support the future

development of a Management Strategy Evaluation, in terms of a socioeconomic model and data needs.

That contractor has currently got a one-year contract to start doing some of that work, and so there is already some things in motion for the socioeconomic side of a potential Management Strategy Evaluation. In the work plan, we wanted to include an outline. In the work plan we wanted to include just an outline of what the major resource needs would be for the Board to consider for a project like this.

For the Lobster Technical Committee and ASMFC staff being the ISFMP coordinator, and the assessment scientist, we see this being similar to a benchmark stock assessment, in terms of workload and time. The Lobster Board would be probably more involved directly in this process than in the stock assessment, where they review it at the end.

Their participation would be throughout the process of a Management Strategy Evaluation, and that would be in the form of reviewing progress updates through Board meetings throughout the process, and likely participation in stakeholder workshops, where stakeholders would come and offer input to then form all the components of a Management Strategy Evaluation, so probably more direct participation throughout the process then in a traditional stock assessment. Then there would be the need for several external folks, likely a professional facilitator, to facilitate those stakeholder workshops and effectively elicit input from the various stakeholders that are present and participating in the process.

Then there would be the need for a modeling team, essentially, and this is highly dependent on what the objectives and overall goals of the Management Strategy Evaluation are. But there would need to be modelers for the biological and/or environmental side of the MSE, and then also for the socioeconomic components of the MSE, depending on how involved the socioeconomic side gets in this.

Then there would be the need for travel costs associated with MSE workshops, similar to stock assessment workshop, albeit a larger group of folks, including stakeholders for this type of a process. Those were the major sort of categories of resource needs for a project like this, as Burton mentioned in his overview. It's quite resource intensive, and requires a lot of folks to contribute.
We also felt that it would be important to consider the potential workload tradeoffs, if we were to pursue an MSE. There are several other projects and needs that require personnel on either the Technical Committee, or other groups that are currently working or plan to be working on several of these upcoming projects.

Notably, there is the potential for 2023 Jonah crab stock assessment, which will be discussed at the August Board meeting. There is the development of the Gulf of Maine Resiliency Addendum, there is potential work to support management response to the 2020 lobster stock assessment, which has now been covering potential MSE work, so that kind of all wraps into this. There is the ongoing and future whale interaction work, which again requires several technical folks would likely be needed for this project.

Then there is the next scheduled lobster stock assessment, which would currently be scheduled to be completed in 2025. That brings us to sort of the purpose of the presentation, or the original purpose of the presentation for today, was to generally get some feedback, take the Board's pulse on the potential for a Management Strategy Evaluation for lobster, and determine whether it would be fruitful to pursue sort of the next steps necessary to start developing an MSE.

Those questions are, is there Board desire to pursue and use an MSE for supporting a future management framework? Another question would be, what timeframe would the Board want to pursue an MSE, given all the competing needs and projects that are ongoing. A lot of work that's going to be needed for the whale work and whale interactions, and so then

you get the sense as to whether the Board might think that would be a useful tool.

But given all the things that are going on, it might be more appropriate to try and pursue this a year, or two years down the road, or whatever it may be. Then the last question we hope you can get some feedback on today was, does the Board agree with the recommended focal area that the Subgroup came up with, being stock productivity resiliency? With that, I can stop there and see if there are any questions or discussion about these questions.

CHAIR McKIERNAN: Thanks, Jeff, that was great. Board members, comments and questions.

MS. KERNS: Okay Dan, we have Senator Miramant, Jason McNamee, David Borden, and Colleen Bouffard.

CHAIR McKIERNAN: Okay, Senator Miramant, you are up.

SENATOR MIRAMANT: Thank you, Jeff, that was good. Are you dividing out the difference between the windmill effects of fixed windmill bases and floating windmill, as far as impact with noise and vibration, or do you have information yet, and should I get that sent from the University? We've already proven the concept of floating, but we want to know the effects, if they are not already established. Thank you.

MR. KIPP: Yes, thank you. That issue came up, sort of the last couple of days. That has been very loosely discussed, I think that issue, wind farms, and the details of those. Then also, I think that brings up the whale interactions. Those are seen as longer term MSEs right now. We think that there is going to be considerable complexities that would be required, and so we saw those generally as longer term MSEs that might build upon an initial MSE, focusing here on stock productivity resiliency. But yes, we didn't talk about the specific details of those wind farms, and the implications of those.

CHAIR McKIERNAN: Jason.

DR. McNAMEE: A couple of quick comments on the attributes of MSE. First, to Burton and Jeff, awesome job! I think that was a really well-done presentation, sort of an MSE 101. I thought that was great. I mean you guys have thought a lot about this in the application to lobster. Quickly, for the Board, the notion of explicitly identifying the goals and objectives is such a valuable exercise.

That is a part of this. I can't overstate that aspect of this. It's such a critical part of an MSE. You know I think there are lessons learned from the Atlantic Herring experience with MSE, which was really well done, I think followed the Andre Punt's Best Practices for MSE to the T. But I think they learned a lot, and I think Dr. Deroba did a nice job of kind of debriefing that in particular with stakeholder workshops.

I think the Commission has a good model with, we called it the EMOW, which was a workshop we did, God, it was a long time ago now, but it was a much more controlled workshop, with a facilitator and a smaller workshop. But we got a lot of value out of it for years and years afterwards. I think in the case of lobster, a real important aspect would be the development of an economic model, to be a part of the MSE.

You know I feel like we've got a lot of good tools and information already on population dynamics, and it's the economic and in particular in the Gulf of Maine, I think there is some really important social considerations as well, because you've got some really highly dependent communities in that region on lobster. That would be just a fundamental area of focus. A lot of investment should be made on an economic and a social aspect to any MSE on lobster. Then finally to my question, and it's the last question that you posed here, Jeff. My inclination is to agree with the Technical Folks that this should be the focal area, but I'm not sure I quite grasp the nuance between what this means, versus just that population dynamics aspect to an MSE, like I know you've tried to, Jeff, but to restate what the stock productivity resiliency aspect means, I would appreciate that.

MR. KIPP: Yes, thanks, Jason. I see your point; you know trying to make the distinction between just a standard or traditional population dynamics type approach. I don't think there really is. I think that is another kind of characterization or terminology you could use here. But it was basically the idea was, you know given that we have seen some concerning signals in the young of year and settlement indices that we do have in Gulf of Maine.

The idea was to use MSE if those trends are realized down the road in reference abundance, the population abundance that we model, and in catch levels. What management actions might help prepare for maintaining the stock to a level that it doesn't experience similar things than the southern New England stock, so just continual decline. That was kind of the overarching focal area for that issue.

DR. McNAMEE: Thanks for that, Jeff, and so that clarifies it for me, and I will support what the Technical Committee, this area of focus I support that. I think this is a critical, probably the primary area, and I maybe shouldn't be saying that as a southern New England person. But I think looking and focusing on stock productivity resiliency in the Gulf of Maine, given where that fishery is, trying to protect it from a similar fate. I think that would be hugely valuable, and probably would have some application to southern New England as well.

CHAIR McKIERNAN: I've got David Borden up next.

MR. BORDEN: I generally support the concept here, as I indicated before. A question if I might, Mr. Chairman. Jeff or Burton, how long would this take, if we were to start today? Are we talking two, three, five years? I mean what is the timeline? I realize that depends on what we want incorporated into it. What would you envision, like a range of timelines to do those?

MR. KIPP: I think you hit the nail on the head there with the note that it's highly dependent on what is entailed in the specific MCE we would pursue here. But something like the stock productivity resiliency, where we do have several tools available, and certainly some work that could help support that. We were envisioning something like two-to-three-year timeframe for this MSE. Then you know, for anything like.

MR. BORDEN: Go ahead, Jeff.

MR. KIPP: I was just going to say, for any of these other focal areas, we identified like whale interactions. Those timeframes would become considerably longer, given the additional complexities that would be required, and the potential need for additional datasets that might not be readily available currently.

MR. BORDEN: Thank you. If I might, Mr. Chairman, just a couple of follow up questions.

CHAIR McKIERNAN: Sure, go ahead.

MR. BORDEN: With a Canadian MSE, what is the timing of the Canadian MSE?

MR. KIPP: Theirs is similar. They are working on a two-to-three-year timeframe, and theirs has been initiated, so they've started work, and they are looking at a two-to-three-year timeframe.

MR. BORDEN: Okay, so at least in my case, given the fact that I'm pretty much exclusively involved in right whale issues these days. I would support integrating a whale consideration into this, not only stock considerations. The only reason I say that is, right whales have the potential to override a lot of the work that we might be doing, if we exclusively function on stock resiliency. I think it's incumbent on us to factor in some of those considerations, so that we get joint benefits out of the proposals that might come forward.

Then, I guess my last question, Mr. Chairman is, is it possible to do a scaled down MSE, where we kind of focus on a couple of key issues, and that fills the groundwork for a more elaborate MSE at a later date? Because I'm a little bit concerned about the timeline

of doing this. If we could do it in an iterative manner, it might make more sense, where we could integrate some of these considerations into the resiliency amendment.

CHAIR McKIERNAN: I think that question you are posing to Jeff, and maybe Burton?

MR. BORDEN: Please.

CHAIR McKIERNAN: Do Jeff and Burton want to comment on whether we can do like a scaled back MSE, and then scale it up with time?

MR. SHANK: This is Burton. I think that is the logical thing, is not to expect that an MSE is something that you do once, but like stock assessment, it's something that develops and gains complexity over time. You would start off with a relatively simple model that you could ask relatively simple questions to, and then expect to sort of build that. It's a question of what that first simple model needs to do, and then what our timeline is for incorporating more complex questions.

CHAIR McKIERNAN: I had a clarifying question. I'll get to Colleen next. Jeff, you had mentioned the Canadians were doing an MSE on their lobster fishery. Would that be area specific? Would there be a separate one for southwest Nova Scotia, and a separate one for PEI, or was it Canada wide?

MR. KIPP: That I don't know. Burton, I don't know if you have more details on that.

MR. SHANK: I think that the focus right now is southwest Nova Scotia. This is being primarily driven by the group out of Halifax.

CHAIR McKIERNAN: Okay thanks. Colleen, I've got you up next.

MS. BOUFFARD: Jeff, I was just looking for a clarification. Is it that southern New England would not be a candidate for inclusion in an MSE, or was it just the Management and Science Committee's tasked with looking at the Gulf of Maine/Georges Bank, and the resiliency aspect of the focal area for this one?

MR. KIPP: Yes, I don't think that it was that the southern New England stock could not be a candidate for MSE. I think it was more so we saw, you know the issues with uncertainty on how to respond to something like declining recruitment in Gulf of Maine, and just ran with that as what a very significant issue it would be to pursue an MSE. It wasn't that we didn't feel that southern New England was a good candidate, it was just that the discussion sort of directed towards the Gulf of Maine stock.

CHAIR McKIERNAN: Toni, are there any other Board members that wish to speak?

MS. KERNS: Yes, we have Pat Keliher and Jason, your hand is back up again. I don't know if that was on purpose, and David Borden, your hand is back up again. Is that on purpose, nope. All right, so just Pat Keliher, and then you have a member of the public.

CHAIR McKIERNAN: Yes, and I think I had cut off Senator Miramant and Cheri earlier, because I wanted to move into this presentation, so Pat, why don't you go first, and any of your northern New England neighbors are welcome to join after you.

MR. KELIHER: Great, thank you, Mr. Chairman. Jeff and Burton that was a great presentation, and I appreciated Jason's comment about MSE 101 I think is applicable here. I think there is some additional work that potentially could be done, some of the next steps that you laid out, and particularly around the cost.

The fact that we don't have a budget, it looks like this could be incredibly costly. I think we do need more information around that particular issue. There is also right now, because of whales, and it's been touched on, a high level of stakeholder fatigue. I'm concerned about, you know, getting beyond.

I think, Dan, it goes to your point, not only from a staff perspective, but there is a lot of work that is upcoming. Trying to pull people in from a stakeholder perspective right now, I think we might be asking for a

little bit too much. Down the road, after we get through some of the whale work, that may change.

The tradeoff though that was listed in the slide, in particular the tradeoff for delaying some work around resiliency, is also very problematic for me. We've seen, I'm going to get press calls when I say this, but we're below 100 million pounds this year, or for last year in Maine, for the first time in a long time.
We've seen some trends, as it pertains to settlement into ventless traps. Staff clarifies it as what we're seeing is a soft decline. David talked about this a little bit in his comments, but I don't want to be in a situation where we're too far down the road in the developing of MSE, and not have anything already in place, in regards to a trigger mechanism for resiliency that is there as a backstop. I think there is a need for that backstop while MSE is developed. While I'm commenting about what David said, I mean I have been adamant that I don't want whale conversations mixed into lobster conversations. I guess I'm getting over it. I don't know how we can avoid it, and I can see MSE possibly as a tool. You just have to look at that Bi-Op to see what's going to be changing, to see that we're going to need kind of a very focused effort.

While I've been critical of MSE in the past, I can see some benefits here. I don't want this to be an academic exercise, by any stretch of the imagination. I'm warming up to it. With all that said, Mr. Chairman, I don't know if you want to entertain a motion around this now. I would be happy to make it now, just to further discussion around MSE, or I can just hold a turn and wait for some comments, and then come back to it.

CHAIR McKIERNAN: Is there any other Board members that are seeking to speak at this time?

MS. KERNS: Just Tom Fote.

CHAIR McKIERNAN: Okay, go ahead, Tom.

MR. THOMAS P. FOTE: Yes, I found the presentation very interesting. But I looked at what is required to get the information through here, and I looked at how many stakeholder meetings. We're going to have more, to basically do this. The final product, it's going to be on lobsters. Is it going to be used? Set as a guideline for how we do other species. I mean, I don't see this type of work right now working on say winter flounder, because it's mostly all environmental.
I don't see it happening on weakfish, because we really don't know what's going on. But I do see it, if we really start heating up the water as much as we think we're going to be heating up in the next ten years that you'll see. I remember the comments somebody made before that Gulf of Maine has plenty of lobsters, but southern New England, but it isn't one stock.

Well, we're going to be looking at cobia and other stocks like that from the south moving up north, and how do we deal with it when Florida disappears with cobia, God forbid. But that could happen, and we wind them up with south, so how do we handle that? I see this as a tool for that. But it's a lot of work and it's a lot of money, and that's the only thing that concerns me.

CHAIR McKIERNAN: Pat, back to you. Why don't you bring your motion forward, because I think you had a motion that I think you wanted to present to address the stock assessment, with a possible action. You've warmed up a little bit to MSE, so is there a way that you can put the two into perspective?

MR. KELIHER: I think either Caitlin or Maya may have my motion that they could put it up on the screen. I am making this motion with the understanding that there is some interest around southern New England, this could potentially be of benefit for some of those conversations**. I would move that the Board task the TC and staff with the development of a set of prioritized options, timelines and a draft budget to assist the Board in considering if MSE could be of use for management, for the Gulf of Maine and Southern New England stocks, in as timely a manner as possible. This information shall be presented to the Board at the spring meeting.**

CHAIR McKIERNAN: Is there a second?

MS. KERNS: We have Jason McNamee.

CHAIR McKIERNAN: All right, Jason, any discussion?

MR. KELIHER: If I may, Mr. Chairman, I would just say that I also have another motion for what I'm calling an addendum light on resiliency, that kind of feeds into my earlier comments. Within the motion I'm asking for this information to be presented at the Board at the spring meeting. I'm not sure if that's even possible, but I thought if it was discussed at the spring meeting, it would help us keep some momentum. With that I'll be quiet, thank you.

CHAIR McKIERNAN: Pat, you are basically asking subject matter experts back in the office to convene with the ASMFC staff and their NOAA counterparts, to kind of brainstorm and devise sort of a plan and a budget to develop and MSE for both stocks.

MR. KELIHER: Correct.

CHAIR McKIERNAN: You're not talking about doing the work, you're just talking about kind of scoping out the work.

MR. KELIHER: Correct, yes.
CHAIR McKIERNAN: Any discussion on the motion from the Board?

MS. KERNS: We have Bill Hyatt.

CHAIR McKIERNAN: Go ahead, Bill.

MR. WILLIAM HYATT: I have a question for clarity. Is the intent of this motion for there to be two products coming out of it, one being all this set of prioritized options, timelines, et cetera for the Gulf of Maine, and one having products for southern New England, so that it's not a single product, but two products, understanding that the exercise could ultimately be manageable for one of the stocks but not the other? Is that the intent?

MR. KELIHER: Bill, my intent here was actually specific to the Gulf of Maine, but after having some additional correspondence with other members of the Board, and hearing some of the interest here today. I thought that, and I think either Burton or Jeff might have spoken to it, the fact that the work and the development of MSE for the Gulf of Maine could benefit that conversation for southern New England.

I guess what I would look for is the subject matter experts to make that determination when they come back to us. Is it more heavy on Gulf of Maine, and then we can see some benefits down the road for southern New England, or if it's two different products? I guess I would like to hear from them on what they think it should be.

MR. HYATT: Very good, thank you.

MS. KERNS: Dan, you have Dennis Abbott.

CHAIR McKIERNAN: Go ahead, Dennis.

MR. DENNIS ABBOTT: I'm not sure if this is the exact place to make my comments. But I was interested to hear a moment ago, Pat said that he initially wanted this for the Gulf of Maine, because the southern New England stock, and what we've done in the past has been problematic. I wanted to make some comments regarding southern New England.

Not to pull a Tom Fote, taking us back in history, but we've been dealing with the southern New England stock problem for over 20 years, to my recollection, and I've been there through this whole thing. We were asked that in the very early days to take action to do something to turn things around in southern New England. That is my recollection.

We also spent a lot of money back then. I won't say we spent it, but the government spent a lot of money on researching the problem with southern New England lobster, as it relates to pesticides and whatever in Long Island Sound, I think probably up to $20 million as I recall. Going back in time, in 2003, I

think we came up with Addendum IV to Amendment 3 to deal with the problem of southern New England lobsters.

We talked about vessel sizes, no new permits, trap limits, conservation TACs, gauge sizes, so on and so forth. Whatever we came up with, every time we've come up with something to cure, not cure, but to improve the situation in southern New England, we were met with a lot of resistance. If we suggested that we do a certain percentage to achieve a goal in the plan, it was always chopped down to next to nothing.

If that would have done any good, I don't know. But it seems like through the years, we just beat our heads against the wall, and keep trying to tell ourselves that it feels good. But we haven't been able to get to this problem, and we probably can't. Jason made some comments about northern shrimp, and I sat on that Board for 20 plus years also.

When we declared a moratorium there, we had somewhat of a buy-in from the fishermen there, reluctantly maybe, but they realized that things had gone to hell in a handbasket, and there wasn't any sense in going fishing. With southern New England, do we need a moratorium? You could say on one hand probably yes, but would the moratorium do any good?

I question that it would, and I don't think that I would support it. Are we going to reach a point of taking another management action, and shoveling something against the tide, when it's not going to work? Even going back to 2003, we weren't even considering climate change at that time. I don't know what the answer is, but maybe the answer is just leave southern New England the way it is, and let things play out.

It might be an experiment. Are things going to get better by themselves? Are we affecting things positively, negatively, or whatever? But I really think that spending a lot of time trying to improve the southern New England stock is really, after 20 years, probably a waste of our time, and it is frustrating to the Board members, I'm sure to deal with this over and over and over again, and just watch things deteriorate.

CHAIR McKIERNAN: Well Dennis, I can't disagree with you, it's pretty sobering. You know one of the things that strikes me, in southern New England we've got a massive projected impact, or potential impacts of offshore wind development, not to mention the potential closures of areas in the proposed federal rule. I think those are two big items on the horizon, but I'm guessing those might be, at least the second one, would be completed prior to any MSE being conducted. Who would like to follow Dennis' recommendation in this discussion, anyone?

MS. KERNS: You've got Tom Fote.

CHAIR McKIERNAN: Okay, Tom.

MR. FOTE: Since I've been around a little longer than Dennis, and realize what we've been doing with lobsters for all these years. It's a situation that we can't control. I mean, it's like why am I going to bring surf clams back to off Island Beach State Park, which was one of the heaviest surf clam fisheries we had in New Jersey, when it was worth, back then I think $200 million.

All the surf clams just moved offshore, and further north. There is nothing we can do about it. Dong that unless you stop rising the temperature. I'm tired of spinning my wheels. I look at the cost of staff time, our time, stakeholders time, promising that we're going to do something. Then we do all these meetings, and then just as Dennis says, and we don't do nothing.

I mean we could put a moratorium if we talked about it, but I don't agree with a moratorium, because I don't think it accomplishes anything. It's the same that we did with winter flounder and weakfish. We put a basically almost a moratorium in place, but it hasn't really done any good. I'm not sure of the answers. We're not God, and we can't control the temperatures by ourselves. We can't control the environmental.

There is more than just climate change. We talk about, you know the change of winter flounder was because of stuff we're putting in the Bays and estuaries. You know Jim Fletcher talks about it all the time, and so do I. Basically, screwing around with the sex lives of fish, and lobsters and everything else in here. I'm not sure, sometimes I feel like I'm shoveling against the tide, as Dennis would say.

CHAIR McKIERNAN: One comment I would make is, the southern New England stock is managed with some rather vulcanized sets of rules, with all of the various lobster conservation management areas and teams. I don't know if the MSE could take a crack at that, and try to meliorate some of the differences.

I think that's in part, part of the frustration. I know that in Area 2 that states of Rhode Island, Massachusetts, reduced the traps by 50 percent, and we're in the sixth year right now, and that action has yet to be evaluated. Then of course, the Area 3 fleet cut their traps by 25 percent as well, finished I believe last year. Does Jason have his hand up? I wouldn't mind hearing from Jason at this point.

MS. KERNS: Yes, he does, and then Dan, let me know if you're going to go to the public. You have a couple folks.

DR. McNAMEE: Yes, just I largely will repeat what you just said. You know, I think there is a perception that we've not done anything in southern New England, but I don't think that's true. I think we've done a lot. There was a schedule of gauge increases, you know a while back. I can't overstate the investment in the trap reduction plan that the Area 2 fishermen.

That holds for the fishermen and the agencies to minister that program, so we've not, I guess in my view, been sitting on our hands. We've done a lot, I think. It's correct to say it doesn't appear to have improved stock condition, and I guess that's why I made my comments earlier about I think there is a lot being driven here by the environment, not by fishing.

But just to kind of loop it back to the conversation that we're having here and the motion on the board. It's exactly the point of doing something like an MSE is to kind of look at these things, and how effective was the trap reduction strategy, and you kind of look at that relative to what the stock did, and the cost of that, you know through the economic piece of it.

We can kind of weigh that against other management strategies of having a single management effort, like Chairman just mentioned, you know having kind of a cohesive set of regulations across LMAs, or something like that. I'm not suggesting that is what we should do. I'm just suggesting MSE. Burton put up that slide of the airplane crashed on the ground. You know this is the flight simulator, where we don't have to worry about actually crashing our airplane.

You can look at these things and weigh them against each other, without real world harm. That is the attribute here. That is why I think it's worth the investment. I know people are concerned about the time, but two years goes by pretty quickly. We'll get a lot of good information, and using that information, well that's on us. We have to make an effort to not just use this as a delay tactic, but to use it to give us information with which to act. I commit to doing that, and hope others on the Board do as well.

CHAIR McKIERNAN: Toni, you said we had two members of the public?

MS. KERNS: We now have three, and then at some point, David Borden also just put his hand up. But I think staff is going to need some clarifications if this motion passes. If we could go back to Jeff that would be great at some point as well. You have David Borden, three members of the public.

CHAIR McKIERNAN: Well, why don't we try to get the motion clarified, because that might affect some of the comments that some of the members on the Board and the public are going to make. I'll invite Jeff and Burton to ask clarifying questions of the motion.

MR. KIPP: The clarification I think we're seeking is for the first part, the prioritized options. You know I think we view the priorities as coming from the Board. What are the pressing management issues, what are the priorities for addressing through MSE? I think that was what we were hoping to get from the Board.

Then we could come up with, you know what the timeline then budgets would be associated with addressing those issues. For example, if something like MSE without whale interactions is just not going to be useful. That would be helpful to know here for us, to then be able to determine what would be required for some of those options. But I think we were looking for some guidance on what the priorities are from the Board, in addressing with an MSE.

CHAIR McKIERNAN: Pat Keliher, the motion maker, would you like to speak to that?

MR. KELIHER: Yes, I guess I was going off the list, Jeff, that you had presented. Obviously, some thoughts around prioritization have already taken place within your group, because you did put a list of items up there. I guess I'm not in the place right now, as a member of the Board, that I can throw items up there at this time, because I wanted to get additional information out of the TC and from staff, where they think this should go. I'm struggling how I could give you that additional information right now. I don't know if Jason has some additional thoughts on that.

MS. KERNS: He has his hand up.

CHAIR McKIERNAN: Great, Jason.

DR. McNAMEE: Yes, I actually Jeff, I'm not going to be any more helpful than Pat just was; no offense, Pat. But you know the way that I interpreted this motion was, I think you guys have thought through the types of things that could be plugged in, you know across those slides you have identified a number of them. I can't think of any additional ones, beyond what you all have already thought of on them. What I anticipated you would do with this motion, is just kind of have a, I'll call it like a decision tree, where you have, okay if you do this one thing, we can knock that out in a year, and it will cost, you know ten dollars.

If you added in whales, that is going to take a year and a half and will cost twenty dollars. You know I would be very satisfied if the Technical Committee kind of took the universe that you have already defined, and just kind of scale it. You know if you do focus on this one thing, we can get done quickly.

If you want us to focus on all of these things, you know that is your three-year timeline. That is again, I can't be more definitive than that right now either, but hopefully that gives you at least a little bit of structure, and then you know when you guys come back with that next time, we can't get mad at you.

MR. KIPP: This is Jeff, maybe you're thinking about this as prioritized, in terms of feasibility, and some of the things that are currently available, in terms of MSE tools, not necessarily prioritized from the perspective of what priority level each of the management issues is.

CHAIR McKIERNAN: That sounds right to me. Jason.

DR. McNAMEE: Jeff, you were trying to help guide me a little bit. That's how I interpreted that. I'll offer a couple things. First is, if people get concerned about MSE and timelines, because they think about the Atlantic herring version of the stakeholder process. What I would suggest is as a first step, focusing on a more streamlined stakeholder process.

For instance, maybe starting with a survey, and only doing one stakeholder workshop to hone in on, you know your goals and objectives, so there is one. I mentioned earlier that I think focusing on economic model would add a lot of really good information, so you've got existing tools, you've got your stock assessment model.

Something external to that, that would require some development that I think should be invested in, would

be an economic model. That would be another area to kind of focus in on. I'm sort of brainstorming, so I think I'll stop there, and see if others want to kind of rip off that a little bit.

MS. KERNS: Dan, you now have David Borden, Pat Keliher and Bill Hyatt from Board members, and you have additional members of the public.

CHAIR McKIERNAN: We stay with the Board. David Borden.

MR. BORDEN: As I indicated before, I support the motion, specifically because it includes southern New England. I just remind the Board, in the assessment and the peer review recommendations, the Technical people and scientific guidance is pretty clear on southern New England, about this use of a moratorium, once the stock gets below a certain level, and we want to avoid that as quickly as we can.

I think it is kind of incumbent upon us to include southern New England, and avoid putting us in a situation when the technical people are back here, actually recommending that instead of dancing around it. In terms of the actual motion, and I mean this to try to help, Mr. Chairman. I think this is going to be iterative, in terms of this issue.

This is a complex issue, a complex process, as Burton and Jeff have basically pointed out some of the things that go into it. What I could see us do is task this motion as general guidance to the Board Chair, and basically allow the Board chair to work with the technical people and the scientific staff, and whomever else he wants.

If he wants to pull a couple of Board members into the dialogue, that would be fine with me. But then have him come back at the next meeting, or the staff come back at the next meeting, and basically provide us with whatever guidance they can provide us with, and kind of a short-term framework and a longer-term framework, and prioritize it. Then at that point what we could do is have another discussion of it, and winnow down our priorities, so that we focus on the really key issues, in terms of the consensus of the Board, having more information to make decisions on. In other words, this is going to cost $100,000.00 to generate these models over three years or five years. That type of consideration is going to be an important aspect of any decision we would make to rank priorities.

I think we should just, Pat, take up the motion, vote on the question, authorize the staff and the Board Chair to do that, and specifically provide the Board Chair the flexibility to come back with a memo that fleshes some of this uncertainty out. I'm afraid we're just going to keep discussion this endlessly, and in fact it will improve the product, because we're going to have to evaluate it again at the following meeting. I apologize for being long winded, but hopefully that helps.

CHAIR McKIERNAN: Pat Keliher.

MR. KELIHER: I wasn't going to take my comments in the direction that David just went, but I agree. I mean this should be an iterative process. I wouldn't want to see some sort of a working group developed here on this. I think as the Chair, being able to work through these types of issues with staff and TC, if you needed additional input, your ability to reach out if needed would work. You know I think Jeff's comments earlier are also applicable here. You know back to the MSE 101. We just need more information to start having at our disposal, to be able to make decisions on how we're going to advance it.

CHAIR McKIERNAN: Bill Hyatt.

MR. HYATT: Yes, I just wanted to reiterate something that I hinted at before, and which I think has been hinted at by a number of other speakers as well. We just want to be sure that one of the products coming out of this motion was some very, very clear on whether or not MSE for southern New England stock would be worth the investment. We just would want to be clear that that is guidance that we would want to see, sort of up front at this first cut at it.

CHAIR McKIERNAN: That's something you would like to hear back from in May.

MR. HYATT: Yes. That would be, the sooner the better.

CHAIR McKIERNAN: All right, to the public. Toni, who do we have?

MS. KERNS: We have Julie Evans, Yong Chen, Pat Augustine, and Sonny Gwin.

CHAIR McKIERNAN: Okay, Julie Evans.

MS. JULIE EVANS: Nice to meet you all. Thank you for allowing me to speak. I find this MSE technology highly interesting for many different reasons. I am the East Hampton Town Fisheries Advisory Committee representative to all things fish, and I have been representing the local fishermen to offshore wind for the past three years.

I see this application, and I heard that the Senator was on earlier, I don't know if he is still on, but I think if I can make this comment. It's a little bit off the realm of what you're talking about, but I think this would be highly effective in dealing with the placement of wind turbines and the fishermen who trawl between the transit lanes, and the problems associated with that. We are also experiencing the offshore wind industry, coming up all on the south shore of Long Island into New York, and recently the proposal to land their cable onshore in Wainscott has made lots of newspapers, and is the cause for Wainscott to try to succeed from East Hampton Town.

I think, you know if anyone has any participation in offshore wind, and they can promote the MSE technology in that respect, I think it could really help everyone save time, save fishermen, save stocks, save whales, actually. I find it highly applicable. As far as the lobster fishery goes, we are experiencing a downturn in our catches here, and prices are very high. Anything this Board could do to help the southern New England lobster fishery, which I do believe some of our fishermen go that far, would be quite helpful. I thank you for the time you've given me.

CHAIR McKIERNAN: Next is Yong Chen.

MR. YONG CHEN: Thank you, Mr. Chair, for giving me the time to make a comment here. I'm a professor at the University of Maine, actually my lab developed this lobster pot initiating stock assessment models. I just want to look at two comments. One is about MSE work. I think that there are two components of MSE work, and one is basically developing the tool and computer programs.

The other one in how we can condition the satoris to specific fisheries, and here we have a Gulf of Maine/Georges Bank and southern New England stocks, and so once we have a course, I think that we have to engage stakeholders and to have a model conditioned on the two stocks. I think they intermingle with each other.

But at the same time, they are also pretty separated to kind of our tasks. I really think we should start this tour development early. It took ten years for the model that we developed to be utilized by Atlantic States Marine Fisheries Commission for a formal assessment, and you know if we say wait for two or three more years on these five years, and the tool will not be there. We needed to start this from somewhere.

My second comment, I think is about the utility of an MSE. I think, with all of the parameters you would use to choose in your lobster distributions and life histories, and all those complicated interactions with the right whales, and other issues. I think you know this MSE can address a lot of what-if questions, and to mitigate a negative impact of climate change on lobster stocks.

I think you have many, many different ways to utilize MSE. For example, the reference point we use right now in assessment, I don't think it has to be tested, and we will be able to use MSE to test the performance of different reference points, you know

in terms of a target and a threshold reference points. I think there are many different ways to utilize the MSE. I'll stop here. Thank you very much for giving me the time to talk.

CHAIR McKIERNAN: Thank you. All right, we have two more comments from the public, first is this Pat Augustine of Hart Award fame?

MS. KERNS: That's the one.

CHAIR McKIERNAN: Welcome back, Pat. Toni, why don't we go to Sonny Gwin, we'll come back to Pat, once you work out the technology issues, so Sonny Gwin.

MS. KERNS: Sonny, if you could just raise your hand again so I can unmute you really fast.

MR. SONNY GWIN: I'm sorry to be a bother, but my question was answered, so I'm good, thank you.

CHAIR McKIERNAN: Back to Pat Augustine, do we have you, Pat?

MS. KERNS: He's still self-muted, Dan.

CHAIR McKIERNAN: All right, well I guess we will have to just move on. We can't hear from Pat, it's unfortunate.

MS. KERNS: Roy Miller has his hand up.

CHAIR McKIERNAN: Go ahead, Roy, and then we'll take the vote on the motion.

MR. ROY W. MILLER: I've been thinking about what Dennis Abbott said earlier, also what Tom Fote said. It seems to me; we've been going down this road as they mentioned for a long time. The critical question in my mind for the southern New England stock is, what would a moratorium on fishing accomplish?

Would it be worth the economic tradeoff? What measures could be taken that would have a positive impact short of a moratorium? If none of those measures would make an appreciable difference, is there anything further to do in a way of management of the southern New England stock? Do we just let nature take its course?

The fishery will be self-regulating enough on a depleted stock that it will scale back to the size of the stock. It would become sustainable, but at a depleted or low level. In other words, I think it's very important that we answer the question as soon as we can, whether it's through an MSE evaluation or some other mechanism.

Is a moratorium needed, and is it worth having a moratorium, or just let the fishery self-regulate in southern New England, based on the environmental parameters that appear to be controlling the abundance and well-being of this stock. That is my question, thank you.

CHAIR McKIERNAN: All right, thank you. Is there any chance Pat Augustine can make a comment, or is he in the abyss? Let's move on to the vote**. Is there any objection to this motion by anyone on the Board? Raise your hand.**

MS. KERNS: I don't see any hands raised.

CHAIR McKIERNAN: **I thank you, Toni, so with no objections I'm going to assume that it's passed by unanimous consent.**

CHAIR McKIERNAN: Well, the good news is we're pretty much on schedule, and we're moving into Item Number 7, which is a Discussion of the Executive Order on the Northeast Canyon and Sea Mounts Marine National Monument. Do we have a short presentation?

MR. KELIHER: Mr. Chairman, this is Pat Keliher. We had skipped over the discussion on resiliency.

CHAIR McKIERNAN: I'm sorry, my apologies. Yes, go ahead, Pat. Let' bring that one back.

MR. KELIHER: I don't know what Caitlin was going to present on this, but I'll just let folks know where I'm at. We have just talked about MSE, we've heard the

fact that it could take two to three years to develop. One of the tradeoffs that as I mentioned earlier that I'm not willing to make at this time, is resiliency as it pertains to the Gulf of Maine.

I think we need to have; you know we use what I think Megan called it in our staff meeting the other day, kind of an Addendum-like that deals with a trigger that would react when we hit a certain level. If you would like me to go into a motion now, Mr. Chairman, I would, or we could hear from Caitlin first.

CHAIR McKIERNAN: Yes, go ahead, Pat, since we're a little tight on time.

MR. KELIHER: I think staff has that motion. I'll read it into the record. **Move to re-initiate the PDT and Technical Committee work on the Gulf of Maine resiliency addendum. The addendum should focus on a trigger mechanism such that, upon reaching of the trigger, measures would be automatically implemented to improve the biological resiliency of the Gulf of Maine/Georges Bank stock.**

CHAIR McKIERNAN: Is there a second for that motion?
MS. KERNS: Cheri Patterson.

CHAIR McKIERNAN: Discussion, go ahead, Pat.

MR. KELIHER: Just to reiterate. I would hate to be in the situation that we were in with southern New England when the Board was continually trying to develop plans, and the stock continued to decline. We're starting to see some slipping now with the stock. As I said, we've seen a decrease in landings now a couple years in a row.

There are some issues with settlement as well as ventless trap surveys. I think it would be incredibly prudent at this point in time, to have a very focused measure in place that deals with a reaction, an automatic reaction to ensure that we don't fall into that trap, where it's just too late, and we're always trying to react.

I think reacting, we talked about this two years ago when I made the original motion for resiliency that was much more broad and complicated. What I'm trying to get to now is something that would be incredibly focused, and would be triggered again, based on improving biological resiliency. With that I'll end my thoughts.

CHAIR McKIERNAN: Pat, on behalf of the Technical Committee members and the PDT, who sometimes get frustrated with us as managers, because we give directions but not enough. The measures that you have in mind would be in the realm of existing measures, such as minimum sizes, trap limits, maximum sizes, those things that we already have in the Gulf of Maine, right?

MR. KELIHER: Yes, exactly. The quickest thing obviously to do would be to deal with potential changes in gauge. That was a focus of some of the work that has been done earlier. I think there is a lot of that within the draft that currently exists. I am not looking to try to reinvent the wheel here. I think we've got measures in place that can deal with the biological side of a decline, and we need to have something in place that can react quickly.

CHAIR McKIERNAN: All right, any other discussion on the motion by the Board?

MS. KERNS: I have Ritchie White.

CHAIR McKIERNAN: Go ahead, Ritchie.

MR. WHITE: I fully support this. It's forward thinking, I think it's something that could make a difference in the future. I think the problem will be, or the issue that we'll have to figure out, is just as in southern New England, there was action taken, it was just way short of what the Technical Committee recommended.

It's one thing to say we're going to have a trigger and we're going to take action, but will the action or can this be written such that the action will be what's needed to correct the measures? That will be the

difficult part, because there certainly will be push back from fishermen, to take less severe actions, conservation equivalency, you know do less than we really need to do. Anyway, that will be a challenge, but I fully support it. This is a smart thing to do.

CHAIR McKIERNAN: Clarifying question for the motion maker. When would you like to see proposals come back to the Board on an addendum, May, August, November?

MR. KELIHER: I would like to see it sooner rather than later, but I think, you know we do have a little bit of time on our hands in considering the other work. If we could just be updated by the PDT and the TC on when they think they could get it to us, but no later than the summer meeting would be my recommendation.

CHAIR McKIERNAN: All right, thanks. Anyone else on the Board?

MS. KERNS: Cheri Patterson.

CHAIR McKIERNAN: Go ahead, Cheri.

MS. PATTERSON: I think that this is, obviously I seconded it, to be very, very important. But I also think that this is something to be in tandem with MSE progression, because that will also further inform any sort of mechanisms, we might be able to move forward in our future.

CHAIR McKIERNAN: Is there anyone else on the Board, Toni?

MS. KERNS: That's all, Dan.

CHAIR McKIERNAN: All right, let's take a vote. Is there any objection to this motion?

MS. KERNS: I see no hands.

CHAIR McKIERNAN: **Seeing none that is passed by unanimous consent,** thank you very much. We're still pretty much on schedule.

DISCUSSION OF THE EXECUTIVE ORDER ON THE NORTHEAST CANYON AND SEA MOUNTS MARINE NATIONAL MONUMENT

CHAIR McKIERNAN: Thank you, Pat, next up I think Caitlin has a short presentation on the Sea Mounts and the Northeast Canyons issue.

MS. STARKS: Yes, just give me one second to get it up.

CHAIR McKIERNAN: I know there is a supporting memo that is in the materials dated January 26.

MS. STARKS: I believe we should be all set. I'm just going to give a little presentation on the Executive Order related to the Northeast Canyons and Sea Mounts Marine National Monument that was recently released. The background is that President Biden issued an Executive Order on January 20, 2021, and this was aimed at protecting public health and the environment, and restoring science to tackle the climate crisis.

Within this Executive Order in Section 3, there is a mandate for the Secretary of the Interior to review among others, the 2020 Proclamation, which allowed commercial fishing in the Northeast Canyons and Sea Mounts Marine Monument, and the Executive Order requires the Interior Secretary to report findings back to the President by March 21 of this year.

As many of you are aware, the Northeast Canyons and Sea Mounts Marine Monument was established by Presidential Proclamation under the Antiquities Act in September, 2016, during the Obama administration, and the Proclamation prohibited commercial fishing within the monument, with a seven-year exemption for American lobster and red crab fishing.

Before it was established, the Commission provided a letter to the Obama administration, stating its preference for protection of corals in this area through the New England Fishery Management Council's regulatory process, rather than through the establishment of a marine monument, and that letter was also provided in the materials.

Then in June, 2020, another Proclamation was issued by the Trump administration, which modified the Monument, only by returning commercial fishery

management authority to the Magnuson-Stevens Act, as well as other applicable laws, but no further modifications were made. Today, if the Board would like, they can consider if there is a desire to provide comments on an issue. This is not an open public comment period, but if desired the Commission could send a letter to the Interior Secretary during the review period, and if that's how the Board would like to move forward, then the next step would be to provide that recommendation to the ISFMP Policy Board. That is just a quick presentation, so I'm happy to take any questions.

CHAIR McKIERNAN: I suspect the sentiment on many of the Board members is to further advise the administration to allow the New England Council and the ASMFC to be managing fisheries. But maybe we should have an open discussion about that. Is there anyone on the Board that would like to speak to this issue?

MS. KERNS: Eric Reid has his hand up.

CHAIR McKIERNAN: Go ahead, Eric.

MR. REID: Yes, thank you, Mr. Chairman, I agree with you, 100 percent. Caitlin pointed out, we did send a letter to President Obama back in May of 2016, you know, talking about our position then. I think we should do the same now. The fisheries we manage, they're going to be under consideration in the review, and we should inform any decisions that come out of that review. I do have a motion. Dan, if you want one, I'm happy to make it at any time, if you want to take some discussion, but just let me know when you're ready.

CHAIR McKIERNAN: Sure, let's get a little discussion around the table. Toni, is there anyone else on the Board that would like to speak?

MS. KERNS: Cheri Patterson.

CHAIR McKIERNAN: All right, Cheri.

MS. PATTERSON: I completely agree with Eric. I think that it should go through an MSA process, and not just have you know a quick signature due to an Antiquities Act without much input, in regards to the fisheries or any other sort of economic process that is happening out there. I would, depending on how it's worded, Eric, I would love to second your motion.

CHAIR McKIERNAN: Eric, why don't you throw your motion up at this time. I think we're going to get a lot of support for it. Then we can debate it once it's up.

MR. REID: I move to recommend to the ISFMP Policy Board that the Commission send a letter to the Secretary of the Interior stating the Commission's position on modifying the Northeast Canyons and Seamounts Marine National Monument. I'm pretty sure I have a second, and I don't really need to have any more discussion about the rationale.

CHAIR McKIERNAN: I'm assuming the Commission's position is to retain management authority along with the New England Council.

MS. KERNS: Dan, you have Cheri Patterson raising her hand to second it.

CHAIR McKIERNAN: Go ahead, Cheri.

MS. PATTERSON: Yes, thank you. I'm just seconding the motion.

CHAIR McKIERNAN: Should we be clearer about the Commission's position in this motion? That being to retain management authority?

MS. KERNS: I'm just reading, I guess an easy way to do that is we could say restating the Commission's position if we want to, since the previous letter made that statement. That's an easy way to put it into the motion, and it's also on the record from Eric's testimony. Then in addition you have Pat Keliher with his hand up.

CHAIR McKIERNAN: I like that, because the position itself can be refined by the Policy Board later on in the week. Pat Keliher.

MR. KELIHER: No, Toni covered it, actually. I think, you know including our past letter into this and restating is the way to go.

CHAIR McKIERNAN: Toni, is there anyone else that wants to comment?

MS. KERNS: Dan, if you could just get concurment from Eric that that is okay to reword his motion to say restating, and Ms. Patterson, that would be great.

CHAIR McKIERNAN: All right, Eric and Cheri, are you both agreeable to those amendments?

MS. PATTERSON: Yes.

MR. REID: Yes, I'm find with that, Mr. Chairman, and I do like the suggestion of taking our original May, 2016 letter, using that as a template for our position. Of course, some of that is not applicable anymore, but I'm sure the Policy Board can doctor it up a bit.

CHAIR McKIERNAN: All right, thank you. If there are no other comments, let's vote on this motion. Are there any objections to this motion?

MS. KERNS: You had Tom Fote with his hand up, and Ali Murphy with her hand up.

CHAIR McKIERNAN: All right, I'm sorry, go ahead, Tom.

MR. FOTE: I've been opposing these presidents be allowed to set up sanctuaries since Bill Clinton started doing it in Hawaii and other areas, just on a decision of the President without science to back up the decision. We don't need a change when one administration changes to another administration.

We don't need to rewrite the rules, it should be left to the management process, whether it's New England, whether it's the Mid-Atlantic, whether it's the West Coast Council basically doing it. But it shouldn't be an arbitrary decision by each president that comes in.

CHAIR McKIERNAN: Thank you, Tom, Ali Murphy.

MS. ALISON MURPHY: I just wanted to let you know, when you are ready to take this to a vote that I will be abstaining. Thank you.

CHAIR McKIERNAN: Toni, are there any other hands up?

MS. KERNS: You have one member of the public.

CHAIR McKIERNAN: All right, and who is that?

MS. KERNS: It is Richard Klyver, and I'll unmute him.

CHAIR McKIERNAN: Richard, go ahead.

MR. KLYVER: Yes, hi, this is Zack Klyver with Blue Planet Strategies, thank you, Mr. Chairman. I just wanted to say for the record that I think having a Monument out there actually benefits the Commission tremendously. This is one of 40 offshore shelf-breaking canyons, and it's important that we study those environments. What this does is bring resources to bear, to study this particular canyon, which is right at the crux of where climate change is having an enormous impact, right where the Gulf Stream meets cold water.

You have an opportunity here to bring resources, you know more and more resources to bear to study the impact of climate change. We need to have some areas that are absent from use, to truly understand these as a baseline area. Also, I guess the point is this is a control sight. This is an area where there is less human impact.

Also, all the benefits that monuments or protected areas can bring to fisheries, is an important piece to understand. Where you protect, create marine sanctuaries, often the spillover effect results in great abundance. There could be a tremendous value to resources. What I'm trying to say is, this is one tool in the toolbox that we should be considering, and the Commission should be considering to use that can help improve the health of the oceans and fisheries.

I encourage the Commission to consider it, and not just to fall back on the idea that it's within just your position to make decisions about it. I am not trying to be disrespectful, but it feels like we have national parks, and we wouldn't question whether those areas should be protected. We should have some places in the ocean that deserve the same kind of protection, so I hope the Commission will consider that.

CHAIR McKIERNAN: Thank you for your comments. All right, Toni, anyone else?

MS. KERNS: No. Tom Fote has his hand up.

CHAIR McKIERNAN: Go ahead, Tom.

MR. FOTE: I just couldn't let that slide by.
CHAIR McKIERNAN: Tom, I don't want to have a debate, I would rather just have the vote, because the meeting is getting on, and I don't want to run over, please. I would like to take a vote**.** Is there anyone in opposition to this motion on the Board?

MS. KERNS: I see no hands in opposition, just noting that NOAA Fisheries is abstaining.

CHAIR McKIERNAN: Okay thank you. **It's passed by unanimous consent with one abstention**, so it's not unanimous. It passed by majority with NOAA Fisheries abstaining, thank you.

REVIEW AND POPULATE JONAH CRAB ADVISORY PANEL MEMBERSHIP

CHAIR McKIERNAN: Now we're on to Jonah Crab Advisory Panel membership, Tina.

MS. TINA L. BERGER: Thank you, we have one nomination for your consideration and approval, and that is Jon Williams, a commercial offshore trap fisherman from the state of Rhode Island.

CHAIR McKIERNAN: Do we have a motion?

MS. KERNS: You have Eric Reid with his hand up.

CHAIR McKIERNAN: Okay Eric, do you want to make the motion?

MR. REID: Yes, I do. I move to approve the nomination to the Jonah Crab Advisory Panel for Jon Williams of Rhode Island, he's more than qualified.

CHAIR McKIERNAN: Second. Do we have a second?

MS. KERNS: Emerson Hasbrouck.

CHAIR McKIERNAN: Any discussion on the motion?

MS. KERNS: No hands up.

CHAIR McKIERNAN: **All right, then is there any objection to the motion? Seeing none, it passes by unanimous consent.**

ELECTION OF VICE-CHAIR

CHAIR McKIERNAN: Second to last item i**s** election of a Vice-Chair. Is there anyone among the Board members who would like to serve as Vice-Chair, any motions?

MS. KERNS: Eric Reid has his hand up.

CHAIR McKIERNAN: All right, Eric, go right ahead.

MR. REID: I move to elect Dr. Jason McNamee as Vice-Chair of the American Lobster Board.

CHAIR McKIERNAN: A brilliant choice, any seconds?

MS. KERNS: Ms. Patterson.

CHAIR McKIERNAN: Thank you, Cheri. Any objections to this wonderful nomination of Jay McNamee?

MS. KERNS: I do not see any hands raised.

CHAIR McKIERNAN: Thank you so much, Jason you're a good man. Jason, you are now the Vice-Chair by unanimous consent. Is there any other business to come before the Board?

MS. KERNS: I see no hands.

ADJOURNMENT

CHAIR McKIERNAN: Brilliant, it's 12:25, we have a few extra minutes for lunch. Thank you everyone for a great Board meeting this morning, and we'll see most of you later today virtually. Thank you very much!

(Whereupon the meeting convened at 12:25 p.m. on Tuesday, February 2, 2021.)

Atlantic States Marine Fisheries Commission

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MEMORANDUM

TO: **American Lobster Management Board**

FROM: **American Lobster Technical Committee**

DATE: **April 16, 2021**

SUBJECT: **Lobster Management Strategy Evaluation Options**

The Atlantic States Marine Fisheries Commission's Lobster Technical Committee (TC) was tasked by the American Lobster Management Board (Board) at the Commission's 2021 Winter Meeting to develop a set of prioritized options, timelines, and draft budgets to assist the Board in considering if management strategy evaluation (MSE) could be of use for management of the lobster fisheries. The TC met via webinar two times following the Winter Meeting to develop and prioritize these options. Options are outlined at the end of the memorandum, and include anticipated personnel needs, major budget line items, and timelines with milestones that would incur a substantial cost. However, the TC indicated that due to the highly interdisciplinary nature of MSE, additional perspectives are needed to provide a comprehensive work plan. Therefore, the TC has provided some recommendations for next steps for MSE development in addition to a recommended option to pursue. In addition to the line item cost estimates for each option, it is important to keep in mind that these costs do not include time and, consequently, indirect costs of several participants' time being allocated to participating in the MSE process (e.g., TC members); workloads would have to be prioritized and modified to accommodate the MSE workload. Competing workloads include the next lobster stock assessment (tentatively scheduled for 2025) and a potential Jonah crab stock assessment (tentatively scheduled for 2023), at a minimum. The details of the options provided at the end of the memorandum are considered preliminary and may change dependent on management goals and objectives (e.g., need to include anthropologists to address human dimensions objectives).

TC Recommendations on MSE Focus

The TC recommends the option for a two-phase MSE of the Gulf of Maine/Georges Bank (GOM/GBK) stock. The first phase of this option would provide an intermediate MSE at a coarser spatial resolution (i.e., stock level) that can be used to support a management framework in a relatively short timeframe, while also allowing time to build knowledge and tools to develop a subsequent, spatially-explicit MSE in phase two. This phased approach provides short term management guidance, while concurrently building the framework to expand to a spatially explicit approach in phase two. The extended timeframe may also allow several large-scale changes on the horizon for the lobster fishery to develop that could impact the lobster fishery and management goals, and thus better guide the cost and focus of incorporating spatial considerations explicitly into the MSE.

The TC believes MSE has potential for supporting a management framework for the Southern New England (SNE) stock, but believes a SNE-focused MSE is a lower priority option for several reasons. First, the scale of the fisheries in terms of fleet size and landings make the GOM/GBK stock a higher priority. Second, MSEs are generally focused on proactive management strategies for the future of the fishery, such as strategies intended to promote stock resilience, as opposed to reactive management strategies responding to stock conditions estimated in past stock assessments; the TC believes this further skews cost-benefit considerations of MSE in favor of the GOM/GBK stock. Third, the TC anticipates unique

challenges that would require more complex tools to provide a successful SNE MSE. These challenges include the dominant mixed-crustacean nature of the fishery, and the degree and rate at which the lobster population and fishery have changed in response to climate change. These factors require modeling aspects of both Jonah crab and lobster population dynamics and distributions, as well as spatial dynamics of the fishery in any MSE option. There is also a high likelihood for an MSE to require customized model development and data collection by stock (e.g., socio-economic indicators), making MSE focused on one stock at a time most feasible.

TC Recommendations on Next Steps

The TC recommends two next steps for development of an MSE. First, a formal process is recommended to develop management goals and objectives for the future of the lobster fisheries. A good example is the process used by the Ecosystems Management Objectives Workshop conducted by the Commission to guide development of ecological reference points for Atlantic menhaden. Objectives developed from such a process would be used to further develop an MSE work plan for lobster. The second recommendation is to form a steering committee for additional scoping and development of a comprehensive work plan with a detailed timeline, including: outreach components that are not anticipated to incur a substantial cost but are imperative to the success of an MSE (e.g., outreach at regularly scheduled industry association meetings), identification of funding sources for the MSE costs, and identification of personnel. Representation recommended for the steering committee includes Board members, TC members, Commission staff, members of the Commission's Committee on Economics and Social Sciences, industry stakeholders (preferably those with past experience in MSE), and members of the Commission's Assessment and Science Committee or Management and Science Committee with past experience in MSE. To be effective, the number of people in the steering committee should be limited to approximately a dozen members.

The TC discussed two ongoing developments that will potentially streamline the development of a formal MSE approximately a year from now. First, University of Maine researchers have submitted a proposal to the current round of the Sea Grant's American Lobster Research Program funding; while funding is uncertain, the project is to evaluate population dynamics simulations that will incorporate environmental effects into the biological modeling framework likely to be used in a lobster MSE. Second, work towards the conceptualization of an economics model and economic data gathering is being funded by NOAA Fisheries; this will support development of an economic model within the MSE modeling framework. These developments support the TC recommendation for the formation of a steering committee, with a start date for the MSE to be determined pending the results of the steering committee's findings.

GOM/GBK MSE Option (high priority)

Phase One - Stockwide GOM/GBK MSE

Purpose: Evaluate performance of management strategies at the stock level for the GOM/GBK stock in response to changes in recruitment with biological, fishery, and other socio-economic performance metrics.

Timeline: Three years. One modeler workshop in the first year and one modeler and one stakeholder workshop in years two and three.

Personnel and responsibilities:

- ASMFC Lobster TC – Stakeholder recruitment and engagement, data gathering, guidance on technical aspects of the MSE, report writing, and training for using the MSE tools in future updates

- ASMFC Staff – Project management, data gathering, workshop coordination, and report writing/publishing
- ASMFC Lobster Board Members – Define management goals and provide guidance on the direction of the MSE based on established goals, participate in stakeholder input gathering (webinars and workshops)
- Stakeholders – Identify desired objectives and outcomes of an MSE and provide guidance on the direction of the MSE, participate in stakeholder input gathering (surveys, webinars, and workshops)
- Biological modeler – Couple existing assessment model and operating model in a closed-loop model (six months to program, six months to modify based on workshop feedback and to provide training to TC members)
- Economics modeler – Develop an economics model guided by NOAA Fisheries' economic model conceptualization and data gathering work and couple with the assessment model and operating model in a closed-loop model.
- Professional facilitator - Facilitate stakeholder webinars and workshops, assist with stakeholder input survey development and analysis

Costs:

- Facilitator - $25,000
- Travel - $37,500 for two in-person stakeholder workshops (30 people), $22,500 for three in-person modeler workshops (12 people)
- Biological model development - $85,000 (one year postdoc with ASMFC indirect cost cap)
- Economic model development - $115,000 (one year full time or two six month full time contractors)
- Total - $285,000

Phase Two - Spatially-Explicit GOM/GBK MSE

Purpose: Evaluate performance of spatially-directed management strategies for the GOM/GBK stock triggered by external forces (e.g., whale interactions, wind farm development and operation, climate change).

Costs: Estimates to be developed during phase one.

<u>Spatially-Explicit SNE MSE Option (low priority)</u>

Purpose: Evaluate performance of spatially-directed management strategies for the SNE stock in response to changes in recruitment and diversification of the fishery (targeting lobster and Jonah crab) with biological, fishery, and other socio-economic performance metrics.

Timeline: Five years. One modeler workshop in years one through five. One stakeholder workshop in years two, four, and five.

Personnel and responsibilities:

- ASMFC Lobster TC – Stakeholder recruitment and engagement, data gathering, guidance on technical aspects of the MSE, report writing, and training for using the MSE tools in future updates

- ASMFC Staff – Project management, data gathering, workshop coordination, and report writing/publishing
- ASMFC Lobster Board Members – Define management goals and provide guidance on the direction of the MSE based on those pre-defined goals, participate in stakeholder input gathering (webinars and workshops)
- Stakeholders – Identify desired objectives and outcomes of an MSE and provide guidance on the direction of the MSE, participate in stakeholder input gathering (surveys, webinars, and workshops)
- Biological modeler – Conceptualize modeling of the spatial dynamics necessary to address stakeholder objectives by integrating lobster population distribution models along with Jonah crab population distribution and the resulting fleet dynamics. Identify biological and fleet spatial dynamics and resolution of each that can and cannot be modeled with available data to guide configuration of operating and assessment model. Couple assessment model and operating model in a closed-loop model (eighteen months to program, eighteen months to modify based on workshop feedback and provide training to TC members).
- Economics modeler – Conceptualize modeling of the economic processes driven by lobster landings, and interactions between lobster and Jonah crab effort and landings. Identify processes that can and cannot be modeled with available data to guide configuration of model. Couple economics model with the assessment model and operating model in a closed-loop model.
- Professional facilitator – Facilitate stakeholder webinars and workshops, assist with stakeholder input survey development and analysis
- ***Potentially others dependent on management and stakeholder objectives (e.g., reduce whale interactions would require a whale biologist and protected resource personnel)***

Costs:

- Facilitator - $42,000
- Travel - $56,250 for three in-person stakeholder workshops (30 people), $46,875 for five in-person modeler workshops (15 people)
- Spatially-explicit closed-loop model development: $255,000 (three year postdoc with ASMFC indirect cost cap)
- Economic model development: $345,000 (three year full time or two one and half year full time contractors)
- Total - $745,125 (minimum with potential for additional costs dependent on stakeholder objectives)

Atlantic States Marine Fisheries Commission

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MEMORANDUM

TO: **American Lobster Management Board**

FROM: **American Lobster Plan Development Team**

DATE: **April 19, 2021**

SUBJECT: **Board Direction Needed for Development of Draft Addendum XXVII on Gulf of Maine/Georges Bank Resiliency**

Background

At the February 2021 meeting, the Board reinitiated work on Draft Addendum XXVII on Gulf of Maine/Georges Bank (GOM/GBK) Resiliency with the following motion:

> *"Move to re-initiate PDT and TC work on the Gulf of Maine resiliency addendum. The addendum should focus on a trigger mechanism such that, upon reaching of the trigger, measures would be automatically implemented to improve the biological resiliency of the GOM/GBK stock."*

Addendum XXVII was originally initiated in 2017 to proactively increase resilience of the GOM/GBK stock by standardizing measures across Lobster Conservation and Management Areas (LCMAs) within the stock, but stalled due to the prioritization of Atlantic right whale issues. In October, the Board reviewed the results and recommendations from the 2020 Benchmark Stock Assessment for American lobster, and determined that while the GOM/GBK stock is near time-series high abundance and not experiencing overfishing, there is a need to proactively address stock resiliency given recent declines in young-of-year indicators.

The Plan Development Team (PDT) and Technical Committee (TC) have met several times since February to continue development of Draft Addendum XXVII (see enclosed meeting summaries). The meeting summaries include more detail pertinent to Board review and discussion, while this memo requests specific guidance on the Board's priorities and objectives for the Addendum. Additionally, the memo outlines the PDT's draft set of management options for Board discussion and feedback. With additional input from the Board, the PDT and TC expect to provide a draft Addendum document for consideration for public comment at the ASMFC Summer meeting.

Requested Board Guidance

In their discussions, both the PDT and TC have highlighted the need for additional Board guidance in order to develop draft management options and analyses that align with the Board's objectives for this action. The PDT and TC have requested the Board provide direction on the following questions:

- What are the Board's objectives with regard to biological resiliency of the stock? For example, should proposed management options aim to maintain current levels of abundance and productivity, to broaden stock size structure, or meet other objectives?
    - If the objective is not to maintain current levels of abundance, then what levels of abundance is the Board aiming to maintain?
- How proactively does the Board want to react to changes in the stock? For example, when stock indices have declined for 3 years by a certain magnitude, etc.?

    - How does the Board want to react to changes in the stock indices between assessments?
- What are the Board's priorities with regard to standardization of measures across LCMAs versus stock resiliency? Is one more important than the other?
- What are the Board's goals for standardizing measures throughout the GOM/GBK stock?
    - For example, is the purpose of standardization to increase biological resiliency, improve enforcement, facilitate stock assessment, address supply-chain issues, etc.?
    - If there is more than one goal, how should they be prioritized?

Draft Management Options

The PDT recommends a "packaged" structure for the proposed management options in the Draft Addendum, where several options would be provided that would establish a predetermined set of management measures that would be automatically implemented when a defined trigger is met. Under this approach, some options would not be mutually exclusive, therefore the Board could establish multiple triggers to automatically implement pre-defined measures. This structure could also allow for measures to be crafted relative to different stock conditions. Some of the options focus more on the standardization of measures while others focus on increased biological resiliency. The draft options are provided below with some considerations for the Board to discuss and provide feedback. The management measures specified in these draft options are examples and may be modified depending on Board guidance and future TC analysis and PDT recommendations.

Option 1: Status Quo

- Maintain current management measures and do not establish a trigger mechanism. This option cannot be selected in combination with the other options.

Option 2: Standardized measures to be implemented upon final approval of addendum *(can be combined with options 3-5)*

- **Sub-option 2A**: Upon final approval of the addendum (not dependent on a trigger), implement standardized measures within each LCMA to the most conservative measure where there are inconsistencies in measures for state and federal waters within LCMAs in the GOM/GBK stock. This would result in Outer Cape Cod (OCC) maximum gauge being standardized to 6-3/4" for state and federal waters, and the V-notch definition and requirement being standardized to 1/8" with or w/out setal hairs.
- **Sub-option 2B**: Upon final approval of the addendum, implement the measures specified in sub-option 2A, AND standardize the V-notch requirement across all LCMAs in the GOM/GBK stock. This would result in mandatory V-notching for all eggers in LCMA 1, 3, and OCC.
- **Sub-option 2C**: Upon final approval of the addendum, implement the measures specified in sub-options 2A, 2B, AND standardize regulations across LCMAs in GOM/GBK for issuing trap tags for trap losses, such that there would be no issuance of trap tags before trap losses occur.

Option 3: Implement LCMA-specific measures to increase resiliency upon reaching a Trigger *(cannot be combined with options 4 and 5)*

- **Sub-option 3A**: Upon reaching a defined trigger (to be proposed later based on Board direction and TC recommendations), increase Area 1 and Area 3 minimum size by equivalent amounts.

- *For example, this option could increase Area 1 to 3- 5/16" minimum gauge size, and make equivalent increases to Area 3 and OCC. Measures would be defined in the draft addendum for public comment, and changes would be equivalent to the change in Area 1, or closer to the size at 50% maturity.*

- **Sub-option 3B**: Option 3A measures, AND decrease maximum gauge size in Area 1, Area 3, and OCC by equivalent amounts (measures would be defined in the draft addendum for public comment).

Option 4: Standardized measures to be implemented upon reaching Trigger 1 *(cannot be combined with option 3)*

- **Sub-option 4A**: Upon reaching Trigger 1 (to be proposed later based on Board direction and TC recommendations), implement a standardized minimum gauge size, vent size, and maximum gauge size for all LCMAs in the GOM/GBK stock.
    - *The PDT and TC have discussed that the trigger for this option could be defined as an observed magnitude of decline in the most appropriate recruit abundance index that would approximate reaching the Fishery/Index abundance target reference point. This would allow for a more proactive reaction to declining trends in the stock between stock assessments.*
    - *As an example for Board deliberation, the PDT suggested a standard minimum gauge size of 3-5/16" for this option. This is about 84 mm, an increase of about 1 mm for Area 1, and a decrease of about 6 mm for Area 3. This would bring the legal minimum size closer to the size at 50% maturity for Area 1, where the majority of stockwide landings are harvested. An alternative option for minimum size is 3- 3/8", which would bring all areas to the same minimum size as OCC and Southern New England. It is also closer to size at maturity for eastern Maine which is where most of the Area 1 landings occur.*
    - *As an example for Board deliberation, the PDT suggested a standard maximum gauge size of 6 ½" for this option. This would be a compromise option that decreases the maximum size in Area 3, and increases it in Area 1.*
    - *Please note these are examples proposed to invite Board discussion, and additional TC analysis is needed to evaluate overall impacts by Area.*
- **Sub-option 4B:** Upon reaching Trigger 1, in addition to the measures specified in sub-option 4A, implement any measures not selected under Option 2.

Option 5: **Measures to be automatically implemented upon reaching Trigger 2 to increase stock resiliency**

- **Sub-option 5A:** Upon reaching Trigger 2 (to be proposed later based on Board direction and TC recommendations, but should be set at a lower level of abundance or higher level of stock concern than Trigger 1), implement a change to the minimum gauge size, vent size, and maximum gauge size for all LCMAs in the GOM/GBK stock to increase biological resiliency.
    - *The management measures should include an increase to the minimum gauge size and a decrease to maximum gauge size from Option 4 in order to increase stock resiliency, and will be proposed later based on Board direction and TC recommendations.*
    - *As an example for discussion, the PDT suggested that abundance falling below the abundance limit reference point from the assessment could be the trigger established for*

this option. This would mean measures would be automatically implemented if assessment results indicate abundance is below the limit. This would allow a faster reaction to a poor stock status determination than the time required to initiate and complete an addendum after receiving the stock status determination.

- *The PDT also proposed an index-based trigger could serve as a proxy for the abundance limit based on a certain magnitude of change in indices that is equivalent to falling below the abundance limit. This would allow for a management reaction to a decline not tied to a stock assessment. The PDT indicated two triggers could be established, such that the pre-defined management measures would be automatically implemented if one or the other were met (both triggers would not have to be met).*

- **Sub-option 5B:** In addition to the measures specified in option 5A, standardize the V-notch definition to 1/16" across LCMAs in the GOM/GBK stock.

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American Lobster Plan Development Team
Meeting Summary
Webinar
Tuesday, March 16th, 2021

PDT Members: Allison Murphy (NOAA), Kathleen Reardon (ME), Joshua Carloni (NH), Corinne Truesdale (RI), Caitlin Starks (ASMFC)

Public: Ronald Huber, Daniel McKiernan (Board Chair)

The Plan Development Team (PDT) met on Tuesday, March 16th, 2021 to discuss the development of Draft Addendum XXVII on resiliency in the Gulf of Maine/Georges Bank stock (GOM/GBK). Staff reviewed background information on the addendum and outlined objectives for the PDT discussion. The addendum was originally initiated in 2017 as a proactive measure to improve the resiliency of the GOM/GBK stock in response to signs of reduced settlement and the combination of the GOM and GBK stocks following the 2015 Stock Assessment. The focus of the addendum at that time was standardizing management measures across the Lobster Conservation and Management Areas (LCMAs) within the GOM/GBK stock. The addendum was then placed on hold as the Board had to prioritize work related to Atlantic large whale take reduction efforts. At the February 2021 Board meeting the Board re-initiated PDT and Technical Committee (TC) work on the addendum, and specified that the addendum should focus on a trigger mechanism such that, upon reaching of the trigger, measures would be automatically implemented to improve the biological resiliency of the GOM/GBK stock.

Staff reviewed relevant results and recommendations from the 2020 Benchmark stock assessment, which showed that the GOM/GBK is at or near record high abundance and recruitment levels, however, GOM/GBK settlement surveys have been trending downwards (particularly in Areas 513 and 514) since the mid-2000s, and have been below time series means in all statistical areas since around 2012. The assessment established three new reference points for stock abundance: The fishery/industry target is calculated as the 25th percentile of the abundance during the high abundance regime; if abundance falls below this target the stock's ability to replenish itself is not jeopardized, but it may indicate a degrading of economic conditions for the lobster fishery. The abundance limit is calculated as the median abundance during the moderate abundance regime. Below this limit, the stock is considered depleted and its ability to replenish itself is diminished, therefore management action to halt the decline in reference abundance is recommended. The abundance threshold is calculated as the average of the three highest abundance years during the low abundance regime, and stock abundance level below this threshold is considered significantly depleted and in danger of stock collapse.

The PDT discussed the appropriate scope of the document, focusing on what metrics should be used to establish a trigger mechanism, what level is appropriate to trigger management measures to increase stock resiliency, and what management measures should be implemented to increase stock resiliency. With regard to the trigger metric, the PDT agreed that if the goal is to be able to

respond quickly to changing stock conditions, the trigger mechanism should not be model-derived because a modeled index would require an assessment and that would take several years. The group suggested using an index of abundance that would be an appropriate proxy for the biological condition of the stock, and deliberated whether a trigger should be established at a certain level of abundance versus a defined trend in the index, such as a decline X% over 3 years, for example. Additionally, the PDT thought it was worth considering a tiered approach with multiple trigger levels that would result in different management measures. In this case, the group thought it could be appropriate to have one trigger based on reference abundance modeled in the assessment, and one based on a trend in abundance indicators. This could allow for a range of options to be developed, including more conservative and less conservative triggers for the Board to consider.

The PDT agreed that for the trigger metric, the Ventless Trap Survey (VTS) indices would likely not be preferred because there is only data since 2006, whereas the trawl surveys (NEFSC and state surveys) have a much longer time series, but both data streams could be considered. Additionally, they agreed that the trigger should be based on recruit abundance including sub-legal sizes, in order to allow for proactive management action in response to the trigger being met. They noted the caveat that the state trawl surveys are more focused on inshore areas than offshore areas and the NEFSC survey trends are driven by nearshore strata, but concluded that the surveys should still be reflective of stock-wide abundance trends. The PDT ultimately agreed that the TC guidance is needed on the most appropriate index or indices that could be monitored annually and used to establish the trigger mechanism.

The PDT also discussed whether it is still appropriate to consider the standardization of management measures in the addendum, in addition to the trigger mechanism. The Board Chair indicated that the Board may still be interested in measures being uniform within LCMAs where there are inconsistencies between the rules for state-permitted and federally-permitted vessels. The PDT was in agreement that the Draft Addendum could include one option to implement some standardized measures within LCMA's considered to be "low hanging fruit" without the use of a trigger mechanism (i.e., upon Board approval of the Addendum), as well as other options that would implement standardized measures across LMCA's upon reaching a trigger. The group noted that determining what measures should be implemented upon reaching a trigger could be challenging due to historic differences in management measures between areas, but that the proposed measures should be based on the desired effect they would have on the stock. The PDT members agreed that minimum and maximum gauge sizes may be more contentious, but that of the existing measures, increasing the minimum gauge has the greatest impact on the resiliency of the stock.

The Board Chair noted that it might be helpful to consider an option to phase-in changes to management measures to spread out impacts to the industry. He also noted that the Draft Addendum should make it clear that states would still be allowed to implement more restrictive measures than those that are implemented through the FMP.

The PDT developed a draft structure of proposed management approaches that would include several different options that are not mutually exclusive:

- Option 1: Status quo. Maintain current management measures and do not establish a trigger mechanism.
- Option 2: Implement some standardized measures immediately.
    - The PDT suggested that these could include less contentious measures like standardizing the v-notch requirement and maximum gauge sizes within LCMAs, standardizing rules on when tags are issued to harvesters for trap tag losses, and potentially standardizing the v-notch definition and requirement across LCMAs. These changes (max-gauge size) could provide a minor increase in protection of spawning stock biomass but would more so address enforcement challenges and concerns.
- Option 3: Establish a trigger mechanism to implement standardized measures across LCMAs.
    - The PDT discussed that for this option a more conservative trigger level could be used, such as something equivalent to the fishery/industry target reference point. The PDT noted that multiple indices could be used to establish the trigger, but they should be limited to what is included in the annual data update process that was recommended in the assessment. The proposed measures that would be implemented upon reaching the trigger should include anything under Option 2 (e.g. uniform v-notch requirement and definition if not already implemented) and also a uniform minimum and maximum gauge size across the LCMAs.
    - The PDT requested TC guidance on the most appropriate index or indices that could be monitored annually and used to establish the trigger mechanism and acts as a proxy for the fishery/industry target reference point.
    - The PDT discussed the potential for a phase-in of additional measures (e.g., a 1/16 increase in the minimum size annually over three years).
- Option 4: Establish a trigger mechanism to automatically implement a set of measures to increase stock resiliency.
    - The PDT discussed that more work will be needed to determine what the appropriate trigger metric(s) and level(s) would be for this option, with guidance from the TC. They discussed that the trigger could be based on trends in abundance indices, based on the assessment, or potentially both, but noted that using abundance indices would allow for a faster reaction time to changing stock conditions.
    - The PDT suggested that proposed measures that would increase biological resilience could include an increase to minimum gauge size, or season closures. They also discussed whether it could be appropriate to consider effort/output controls like a total allowable catch limit.
    - The PDT requested TC guidance on the most appropriate trigger (index or indices that could be monitored annually versus metrics from the stock assessment) and used to establish the trigger mechanism.

The next steps for the PDT are to schedule a call with the TC to discuss appropriate trigger metrics and trigger levels, as well as how different management measures could be evaluated to project their impacts on stock resiliency. Following that call the PDT will reconvene to further

develop a set of management options. Given the estimated time needed to accomplish these tasks, staff suggested the following draft timeline for the next few steps of action development:

- May 2021: Present draft management options to Board and solicit feedback/additional guidance on what to include in the Draft Addendum for public comment
- May-July: PDT further develops options based on Board feedback and develops Draft Addendum XXVII document for public comment
- August 2021: Board considers Draft Addendum XXVII for public comment

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American Lobster Technical Committee
Meeting Summary
Webinar
Thursday, March 25th, 2021

TC Members: Kathleen Reardon (Chair, ME), Josh Carloni (NH), Tracy Pugh (MA), Corinne Truesdale (RI), Kim McKown (NY), Chad Power (NJ), Craig Weedon (MD), Somers Smott (VA), Burton Shank (NEFSC), Caitlin Starks (ASMFC), Jeff Kipp (ASMFC)

Additional Attendees: Conor McManus (RI), Megan Ware (ME), Toni Kerns (ASMFC)

The Technical Committee (TC) met on Thursday, March 25th, 2021 to discuss and provide input to the Plan Development Team (PDT) on the development of Draft Addendum XXVII on resiliency in the Gulf of Maine/Georges Bank stock (GOM/GBK). Staff reviewed background information on the addendum, PDT discussion, and outlined objectives for the TC discussion. The addendum was originally initiated in 2017 as a proactive measure to improve the resiliency of the GOM/GBK stock in response to signs of reduced settlement and the combination of the GOM and GBK stocks following the 2015 Stock Assessment. The focus of the addendum at that time was standardizing management measures across the Lobster Conservation and Management Areas (LCMAs) within the GOM/GBK stock. In February 2021, the Board re-initiated PDT and TC work on the addendum focusing on a trigger mechanism such that, upon reaching of the trigger, measures would be automatically implemented to improve the biological resiliency of the GOM/GBK stock.

Staff reviewed the abundance reference points established following the 2020 assessment, as well as PDT discussion on the draft addendum since the February Board meeting. The PDT discussed which metrics should be used to establish a trigger mechanism, what level or levels would be appropriate to trigger standardized management measures or measures to increase stock resiliency, and which types of management measures should be considered to increase stock resiliency. As a result of this discussion the PDT determined a need for TC guidance on three issues: 1) identifying the most appropriate index or indices that should be used to establish a management trigger, 2) identifying appropriate trigger levels at which measures would be automatically implemented, and 3) Identifying management measures that should be considered to increase biological resiliency of the stock. The TC guidance provided on each of these issues is summarized below, followed by additional considerations and next steps.

Indices for Establishing Triggers
The TC discussed the pros and cons of various survey indices that could be used to establish triggers. Conor stated that he understood the PDT's concern about the Ventless Trap Survey (VTS) index related to it being more biased for inshore areas, but believes it is still a valuable indicator that should be considered. He also noted that if the goal of resiliency is maintaining or increasing spawning stock biomass (SSB), then perhaps female abundance indices should be used. Tracy added that both sexes should be considered rather than just females. The group agreed that there should be a focus on recruits or pre-recruits because looking at sub-legal sizes can provide a

forewarning for future trends in SSB. Conor also suggested consideration of an oceanographic index such as bottom temperatures, since temperature can be a driver of changing stock conditions.

Jeff suggested that the indices used to set the triggers should be those that the stock assessment subcommittee recommended for use in the annual data update process: the trawl survey indicators, including recruit abundance (71-80 mm lobsters) and survey encounter rate), and ventless trap survey sex-specific model-based abundances indices (53mm+). Burton expressed some concerns with basing short term decisions on the federal trawl survey due to annual variation and low sample sizes, but suggested that the ME/NH trawl survey and MA trawl survey could be combined into one index. He suggested that the index should be based on the trawl survey and VTS abundance of pre-recruits during the current abundance regime (since 2011). The TC discussed whether the offshore stock dynamics would be adequately reflected in the inshore surveys, but agreed that there is not a better index to use for GBK, because GBK recruit trends are not indicative of overall population trends. The TC supported further analysis of the ME/NH and MA trawl indices to determine how they can best be used for establishing a trigger mechanism. Kim noted that correlation analysis for modeled abundance and the trawl indices was conducted for the stock assessment, which adds to the rationale for using these indices. Jeff agreed to run the trawl survey function from the assessment to combine the ME/NH and MA trawl survey data into one index constrained to 2011 forward for the TC to review.

Appropriate Triggers to Implement Measures

The TC considered the PDT suggestion that a trigger level correlated with the Fishery/Industry Target abundance reference point may be of interest, given the addendum is meant to proactively increase stock resiliency. The Fishery/Industry target is a higher level of abundance than the abundance limit, so establishing a trigger at that level would be a more conservative approach than using the abundance limit. The TC agreed that the trigger levels should be related to model outputs and reference points. They also discussed the potential to set multiple triggers that could automatically implement the same set of measures. For example, one trigger could be based on abundance indices, and another could be based assessment results, and whichever trigger is met first would result in the measures being implemented. This way there would be a backstop in case there are unforeseen delays in the assessment timeline.

Burton suggested an empirical trigger where the terminal three years of the index data are compared to previous years. For example, if the trigger were based on the spring and fall trawl index and VTS index for pre-recruits since 2011, perhaps the trigger could be a certain percent decline in the index over a certain amount of time. Jeff suggested looking into the data from the SNE indices around the time the SNE stock collapsed as a way to approximate what rate of decline should trigger management action for GOM/GBK. Additionally, the group discussed that different rates of decline could trigger different management reactions; if the decline is more rapid that could require a more severe management response. The group agreed that an additional trigger could be based on a number of consecutive years of decline in the index, such as three consecutive years of decline.

Management Measures to Increase Biological Resiliency

The TC discussed the types of management measures that could increase the biological resiliency of the stock. Past TC analysis has focused on minimum gauge size as the measure that is expected to have the largest impact, even for relatively small changes in the minimum size. The TC agreed that this still holds true. Tracy noted that based on new maturity data, the gauge size is currently set closer to the size at which half of the population can reproduce, at least in western GOM. Thus, increasing it could have a fairly big positive impact on keeping individuals in the population so that they can reproduce. Also, changing the minimum size only delays harvest so lobsters are caught at a large size but are not removed from harvestable population. The TC agreed that minimum size limit has the most certainty of increasing the reproductive capacity of the stock and is also the easiest to enforce, which means compliance should be higher.

In addition to minimum gauge size, the TC noted that vent size selectivity could have impacts on abundance. Conor noted that in the sensitivity analyses performed for the assessment, vent size had notable impacts on reference abundance. The group agreed that vent size should be considered along with gauge size, but that changing vent size only may not be as transparent.

With regard to the maximum gauge size, the TC noted that minor decreases would be less effective due to the size structure of the population. Conor noted that projected impacts are more uncertain because current survey tools do not adequately monitor larger lobsters offshore. Kim and Tracy noted that in the inshore fishery where most of the GOM landings are from, the size structure is truncated and there are not many large lobsters, so small increases to the maximum gauge size would not have much impact. Burton mentioned that the Commercial Fisheries Research Foundation offshore fleet length composition data could provide a sense of what changes to maximum gauge size would have an impact for that fishery.

Trap reductions, v-notching, season closures, and quotas were also discussed, but the TC noted various challenges and sources of uncertainty of the effectiveness of these measures for increasing stock resiliency and the ability to estimate the impact. The group agreed that the impacts of trap reductions on the stock are difficult to estimate due to uncertainty in how harvesters will react to them (e.g. increasing effort) and latent effort. Tracy noted that season closures would be difficult to time appropriately because of the lag between molting and spawning for mature females; Burton added that based on updated information on the lobster reproductive cycle, past analysis was likely flawed and overestimated the benefits of the effects of season closures. The TC discussed quotas as a means of controlling the number of lobsters removed from the population, but noted that it would be challenging to determine an appropriate quota level because there is less certainty in the magnitude of abundance estimates from the assessment than the trends in abundance.

The TC generally is in favor of standardizing measures within and across areas from a stock resiliency perspective, but noted that the industry in some areas will be more impacted than others.

Next Steps

The next steps for the TC are to schedule a second meeting for mid-April to continue discussing trigger indices and levels. Burton and Jeff agreed to combine the MA and ME/NH trawl data into a single index for the TC to review. Conor agreed to put together the VTS indices from the

assessment since 2010 to look at the slopes, and send to the TC. Kim provided the TC with correlation analysis for reference abundance and trawl indices. TC members were encouraged to seek feedback from their state Commissioners on the trigger mechanisms.

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American Lobster Plan Development Team
Meeting Summary
Webinar
Monday, April 5th, 2021

PDT Members: Allison Murphy (NOAA), Kathleen Reardon (ME), Joshua Carloni (NH), Corinne Truesdale (RI), Caitlin Starks (ASMFC)

Additional Attendees: Toni Kerns (ASMFC), Megan Ware (ME)

The Plan Development Team (PDT) met on Monday, April 5th, 2021 to continue discussing the development of Draft Addendum XXVII on resiliency in the Gulf of Maine/Georges Bank stock (GOM/GBK). Staff and the TC Chair reviewed takeaways from the Technical Committee (TC) meeting where the TC discussed items requested by the PDT, noting that the TC is still developing additional work to inform appropriate indices for use in the trigger mechanism for this addendum. The TC also agreed that changes to the minimum gauge size would have the most impact on stock resiliency with the highest certainty relative to other types of measures, but that maximum gauge size and vent size changes should be considered in combination.

Then the PDT discussed how to structure the options for the draft addendum document. Staff proposed two alternative ideas, one where the document presented trigger levels and management measures as separate issues with multiple options, and another where several options are presented including "packaged" trigger levels and management measures. With the latter approach, the options would not be mutually exclusive, and the Board could elect to establish multiple triggers that would automatically implement a pre-defined set of measures. This structure could allow for measures to be crafted relative to different levels of concern about the stock condition. For example, one trigger could be set at a higher level of abundance that would result in the implementation of measures to provide a relatively small increase in stock resiliency, and in addition, another trigger could be set at a lower level of abundance that would result in the implementation of measures to provide a more substantial increase in resiliency.

The PDT noted that they could not make complete recommendations on measures to be considered for each option at this time given the need for TC analysis of the measures. Specifically, the PDT requested analysis on the impacts of minimum and maximum gauge size combinations on spawning stock biomass and catch. The PDT requested that the TC perform this analysis for all of the minimum and maximum gauge sizes that were previously considered for this addendum, including the following:

- Minimum gauge sizes: status quo, 3-5/16", 3-3/8", 3-17/32", and one additional size between 3-3/8" and 3-17/32"
- Maximum gauge sizes: status quo, 5-1/2", 5-3/4", 6", 6-1/4", and 6-3/4"

The PDT did agree that proposed vent sizes should be linked to minimum gauge size, and not considered as a separate decision. With the information available, the PDT began to develop a draft structure for several option packages for triggers and measures, which are summarized below.

Option 1: Status Quo

- Maintain current management measures and do not establish a trigger mechanism. This option cannot be selected in combination with the other options.

Option 2: Measures to be implemented upon final approval of addendum

- **Sub-option 2A**: Upon final approval of the addendum (not dependent on a trigger), implement standardized measures within each area to the most conservative measure where there are inconsistencies in measures for state and federal waters within LCMAs in the GOM/GBK stock. This would result in OCC maximum gauge being standardized to 6-3/4" for state and federal waters, and the V-notch definition and requirement being standardized to 1/8" with or w/out setal hairs. These changes would be implemented for the fishing year following final approval of the addendum.
- **Sub-option 2B**: Upon final approval of the addendum, implement the measures specified in sub-option 2A, AND standardize the V-notch requirement across all LCMAs in the GOM/GBK stock. This would result in mandatory V-notching for all eggers in LCMA 1, 3, and OCC.
- **Sub-option 2C**: Upon final approval of the addendum, implement the measures specified in sub-options 2A, 2B, AND standardize regulations across LCMAs in GOM/GBK for issuing trap tags for trap losses, such that there would be no issuance of trap tags before trap losses occur.

Option 3: Standardized measures to be implemented upon reaching Trigger 1 (TBD)

- **Sub-option 3A**: Upon reaching Trigger 1 (which will be proposed later based on TC recommendations), implement a standardized minimum gauge size, vent size, and maximum gauge size for all LCMAs in the GOM/GBK stock.
    - The measures proposed under this option will be developed based on TC analysis and PDT recommendations.
- **Sub-option 3B:** Upon reaching Trigger 1, in addition to the measures specified in sub-option 3A, implement any measures that were not selected under Option 2.

Option 4: **Measures to be automatically implemented upon reaching Trigger 2 (TBD) to increase stock resiliency**

- **Sub-option 4A:** Upon reaching Trigger 2 (which will be proposed later based on TC recommendations, but should be set at a lower level of abundance or higher level of concern than Trigger 1), implement a change to the minimum gauge size, vent size, and maximum gauge size for all LCMAs in the GOM/GBK stock.
    - The management measures should include an increase to the minimum gauge size and a decrease to maximum gauge size from Option 3 in order to increase stock resiliency.

- **Sub-option 4B:** In addition to the measures specified in option 4A, standardize the V-notch definition to zero tolerance across LCMAs in the GOM/GBK stock.

The PDT noted that additional input is needed on several issues related to management options. For Option 3, the PDT suggested that standardizing the V-notch definition to 1/8" could be proposed as a sub-option, but would like the Law Enforcement Committee to comment on whether having a standard definition across LCMAs would be desirable, and whether there is a preference for a 1/8" or zero tolerance definition. It would also be useful to get input on whether areas besides Area 1 (which currently has a zero tolerance definition for V-notching) would want to move to a zero tolerance definition. For Option 4, the PDT talked about including sub-options for multiple sets of proposed measures, but concluded it is too early to determine if that would be appropriate.

The PDT agreed that a separate issue in the addendum should address where in LCMA 3 the management measures selected would apply. Additionally, the PDT discussed the possibility of including another issue that addresses whether or not conservation equivalency would be allowed. Currently, states are allowed to implement equivalent or more restrictive measures than those defined for each LCMA. However, if part of the intent of this addendum is to standardize measures with the goal of consistent protection of spawning stock biomass across management areas, as well as improving enforcement and concerns regarding the shipment and sale of lobsters across state lines, then it may be worth considering an option to specify that conservation equivalency could no longer be used to deviate from the measures established through this addendum. The PDT would like some input from the Board on this subject.

The PDT scheduled another meeting to review additional TC analyses and continue developing the addendum options.