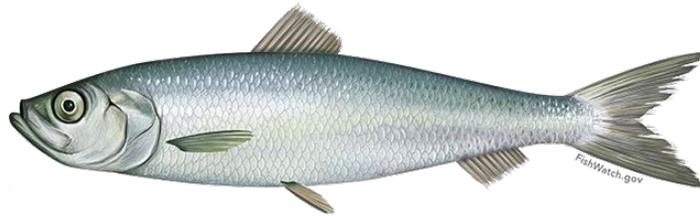


**Summary of Public Comments**  
**on the**  
**Management Strategy Evaluation Process**  
**used for**  
**Amendment 8 to the**  
**Atlantic Herring Fishery Management Plan**



**August 28, 2019**

**Compiled by the**  
**Herring Plan Development Team**

## 1.0 INTRODUCTION

The Management Strategy Evaluation (MSE) used to develop and analyze Acceptable Biological Catch (ABC) control rule alternatives in Amendment 8 to the Atlantic Herring Fishery Management Plan was the first time the New England Fishery Management Council (NEFMC) used MSE in decision-making. The NEFMC is now taking a step back to debrief and identify the benefits and/or drawbacks of the MSE process, as well as lessons learned. This debrief is intended to evaluate the process used to integrate MSE into Amendment 8 and will help inform future decisions on using MSE to manage Atlantic herring or for other purposes.

In July and August 2019, the NEFMC accepted written comments on the MSE process used for Amendment 8. The full text of all written comments (letters and emails) is available for review by the NEFMC and public, and have been attached to this summary as Appendix I. This report summarizes the demographics of commenters and the key themes of their statements. This report does not respond to the comments. It is intended to serve as a guide for reviewing the comments and should not substitute for reading the comments directly.

## 2.0 METHODS

All comments received during the public comment period are summarized here. Comments were converted into text-searchable formats and imported into a *QSR NVivo 10* project for sorting and synthesis. Methods for summarizing comments were consistent with prior summaries of Amendment 8 public comments.

***Demographics:*** Each person who signed a letter was entered into a database within the *NVivo* project and classified by demographic attributes such as home state and stakeholder type. Demographics of commenters is reported in Section 3.0.

***Themes:*** Within the *NVivo* project, a “person node” was created for each person commenting and these nodes were organized by stakeholder type. The text of each comment was assigned (i.e., coded) to the appropriate “person node”. “Theme nodes” were then created for each of the MSE debrief topic areas used in the public solicitation. As the comments were carefully read, text was highlighted and coded to the appropriate theme node. Additional themes were created and coded for to capture input beyond the set topics.

After all the comments were coded to persons and themes, the software was used to develop a qualitative summary of comments, as reported in Section 4.0, examining the text coded to the theme nodes. This summary describes the range of rationale; specific comments on a topic are listed in no particular order.

## 3.0 DESCRIPTION OF COMMENTERS

There were nine written comments (letters and e-mails) received during the comment period. There were six written comments from individuals or businesses, two from non-governmental organizations (NGOs) and one from the Northeast Fisheries Science Center (NEFSC). Since several comments were given by people who represent businesses or organizations, the total number of people those commenters represent cannot be determined.

Of the eight commenters other than the NEFSC, seven had commented a year ago on the Draft Environmental Impact Statement during the Amendment 8 development. Of the eight commenters, two had not attended a herring MSE workshop, two had attended one workshop and four had attended both workshops. Commenters were from several states: Maine (1), Massachusetts (3), Rhode Island (1), Virginia (1), New Jersey (1), and unknown (1). The eight commenters represented the following stakeholder types: herring fishery (3), environmental NGOs (2), and other interested public (3).

## 4.0 CONTENT OF COMMENTS

### **1. Clarity of purpose and need** for using MSE in Amendment 8.

Commenters from the herring fishery, an ENGO, NEFSC and other interested public felt that the NEFMC clearly communicated the purpose and need for using MSE in developing Amendment 8. While no one stated that the NEFMC was unclear, an industry member felt like the Council was more interested in testing the MSE approach than doing an MSE for herring per se.

### **2. Sufficiency of general education** about MSE, how well MSE was understood (e.g., models, role of stakeholder input) and any ideas for improving the education process (e.g., more literature, online instructional webinars, in-person seminars)?

Commenters from the herring fishery, an ENGO and other interested public noted that MSE was new to nearly all stakeholders participating in the process but felt that the Council did a good job with education and making materials available in advance of the workshops. Other commenters disagreed.

Commenters from the herring fishery, an ENGO and the NEFSC noted that the level of understanding varied among participants: some came to the workshops better prepared than others and some left part-way through because the presentations were too technical.

#### ***Ideas for improvement***

- DO NOT have informational webinars. Fishermen would be unlikely to participate, and the Council should spend its limited resources elsewhere.
- DO have an informational webinar in advance of technical workshops.
- Experts in education and communication should help in creating educational materials.
- Given the diversity of stakeholders, a range of materials may help (online materials for self-directed learning, posters/flyers, webinars, in person seminars).
- Provide more mock examples during technical workshops.

### **3. Utility of the six distinct phases of this MSE**, whether some phases (or aspects of phases) more useful or successful than others and whether the time provided for each phase enough.

Commenters from the herring fishery, an ENGO and the NEFSC noted that the MSE followed a logical path through the six phases. While the two ENGO commenters appreciated the Council efforts to keep the MSE on schedule to be used for 2019 specifications, others from the herring fishery and NEFSC felt that the MSE was too rushed, lacking education up front and insufficiently incorporating MSE results into alternatives.

#### ***Ideas for improvement***

- Facilitators should have been more familiar with the fishery and MSE methods, and some facilitators were partial to certain views.
- Ideas raised at the first workshop that may not be feasible should not have been analyzed.
- There was not enough time for analysis between workshops and after the second workshop.
- There should have been more vetting of the questions asked of workshop participants.
- Spend more time early in the process on improving visualizations.
- There should have been a webinar before the second workshop to preview results.
- Stakeholder input should have ended after the first workshop.
- There should have been a third workshop to help digest results.

**4. Appropriateness of using open-invitation, public workshops** for this MSE and/or recommendations for other formats.

Commenters from the ENGOs, other interested public and the NEFSC felt that this MSE was better suited for an open-invitation approach. It was noted this MSE benefited from a wide diversity of participants, improved transparency in decision-making, and fostered communication and provision of data that improved modelling.

Commenters from the herring fishery were not in favor of the open-invitation approach. There were concerns that that it was too hard to have productive conversations, because there was insufficient common understanding of herring management, MSE, the law, etc., and that politics trumped science. These commenters would have preferred a focused stakeholder panel.

**5. Utility of how MSE results were presented** in helping characterize the tradeoffs associated with various alternatives.

Commenters from the herring fishery, ENGOs and the NEFSC noted difficulties in communicating and understanding MSE outputs to enable making tradeoffs. It seemed that managers were ill-prepared for discussions and decision-making. Graphics were made quickly with insufficient written explanations. There could have been greater use of MSE results in understanding and evaluating tradeoffs if MSE outputs were simpler and more familiar. One needed to attend a presentation of results to understand them. There should have been more “hard numbers” and text descriptions. The NEFSC comments noted that time constraints limited communications efforts.

**6. How well the Council integrated the MSE** results and workshop input in developing Amendment 8 alternatives.

Commenters from the herring fishery, ENGOs, other interested public and the NEFSC felt that the Council did a pretty good job incorporating the MSE into Amendment 8. EGNO commenters felt that the amendment did not go far enough in advancing ecosystem objectives, and herring fishery commenters felt that it went too far. Some commenters felt that the NEFMC should have taken more ownership of the MSE.

**Ideas for improvement**

- Plan better: some qualitative analyses in the EIS could have been analyzed quantitatively in the MSE.
- Be more explicit: when legal requirements to institute a rebuilding plan would trump use of a control rule.
- Provide more rationale: why a workshop recommendation is not acted upon by the Council.

**7. Utility of the MSE in balancing tradeoffs** between objectives.

Commenters from ENGOs, other interested public, and the NEFSC felt that the MSE was useful in balancing tradeoffs, in considering risk, and that the final control rule balanced fishery and conservation objectives. An ENGO commenter felt that the NEFMC, in the end, leaned more heavily on the short-term impact analysis than the MSE.

Commenters from the herring fishery felt that there should have been more iterative work at the Herring Committee to balance tradeoffs and did not agree with the rush to meet timelines. There was also a concern that workshop input was not balanced, which carried through the MSE.

**8. The benefits, if any, in using an MSE for Amendment 8, and if the benefits outweighed the costs.**

Benefits were noted in ENGO, herring fishery, other interested public and the NEFSC comments. The range included: a sense of inclusion and transparency of the process, having models that can be used in the future, increased technical analysis than normal, and a final control rule that diverse stakeholders stated, at the time of final action, was not ideal from their perspective, but could be considered a compromise solution intermediate to their positions.

Costs were noted in herring fishery and NEFSC comments. The range included: that diverse open workshops required significantly more education and got sidetracked with issues that the MSE could not address, that the technical analysis could have been done through the standard Council process, and that the outcome was unnecessarily conservative.

Commenters from ENGOs and the general public felt that benefits outweighed the costs. Herring fishery commenters disagreed or felt that any potential benefits were lost due to the determination to keep to a set timeline for the amendment.

**9. How this MSE process compared to how else the Council could have developed and selected alternatives.**

Commenters from the herring fishery felt that the same level of technical analysis could have been done through the standard process, which would have been more science-based and less political.

Commenters from ENGOs felt that using MSE was the best way to explicitly consider tradeoffs, and without it, impacts to the ecosystem and users that depend on the predators of herring would not have been considered.

Commenters from the NEFSC felt that the MSE did not protract the amendment timeline, and since the objective was to develop a long-term control rule, an MSE was appropriate to allow for more analysis of alternatives.

**10. Other comments**

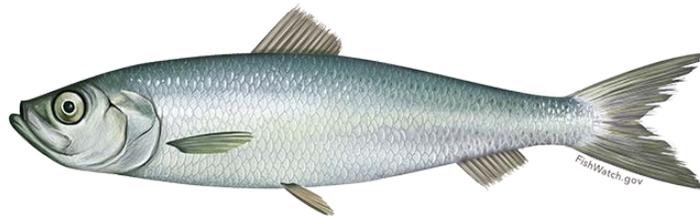
Two comments from other interested public did not specifically address the herring MSE, but had concerns about the fishery, bycatch, natural mortality assumptions in stock assessment, competing ocean uses, water quality, working waterfront and climate change.

Commenters from ENGOs and other interested public appreciated the efforts spent developing Amendment 8 and felt that a new control rule was necessary, that the MSE lacked economic analysis of impacts on users that depend on the predators of herring and wished for spatial considerations in future MSEs.

Commenters from the herring fishery felt that the status quo control rule was sufficiently robust to predator needs and that a scientific process was turned into a political process.

# APPENDIX I

**Written Comments Received  
During the Public Comment Period for the  
Debrief of the  
Management Strategy Evaluation  
Used in Amendment 8 to the  
Atlantic Herring Fishery Management Plan**



**August 9, 2019**

Submitted to the  
New England Fishery Management Council

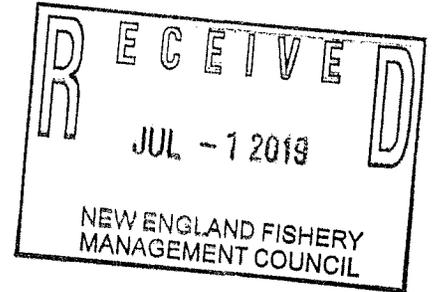


**New England  
Fishery Management Council**

## Sherie Goutier

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**From:** David Dow <ddow420@comcast.net>  
**Sent:** Saturday, June 29, 2019 8:34 AM  
**To:** comments  
**Cc:** David Dow  
**Subject:** Atlantic Herring MSE Debrief Comments



As a retired marine scientist and grassroots environmental activist living on Cape Cod, I wanted to comment on the Management Strategy Evaluation (MSE) process used to develop a new Acceptable Biological Catch (ABC) control rule under Amendment 8 of the Atlantic herring Fishery Management Plan (FMP). I became concerned about Atlantic herring after reading an article in the Cape Cod Times on the decline in the Atlantic herring stocks and the threat this posed on lobster fisheries in Cape Cod Bay which faced a potential shortage of bait. I was unaware of the MSE workshops that were presumably held off-Cape Cod, so that I can't comment specifically on this process.

Since I live near the Coonamesset River where a wetland restoration project is underway to restore river herring populations, I did submit comments on paired trawlers which catch river herring in addition to sea herring (i.e. Atlantic herring) in federal jurisdictional waters. This was a major concern here on Cape Cod, since a lot of resources (people and \$) have been devoted to restoring anadromous fish habitats in local rivers. The by catch of river herring in the offshore Atlantic herring fishery is a major concern of mine.

Cape Cod towns will expend \$ 4-6 billion over the next 20-30 years to reduce nitrogen loading from septic systems under section 208 of the Clean Water Act. This is being done to improve water quality and restore habitats (eelgrass beds; oyster reefs; salt marshes; etc.) that are critical to fish and other marine biota (including our bay scallop fishery). A number of these threatened habitats are listed as Essential Fish Habitat (EFH) under the Magnuson-Stevens Sustainable Fisheries Act (M-S SFA) which is being reauthorized by Congress (?). The NEFMC's Omnibus Habitat Amendment 2 (OHA2) didn't include discussion on how to deal with the effects of warming waters; ocean acidification or nutrient enrichment on inshore or offshore EFH "productive capacity" to support fish populations.

Since Atlantic herring are pelagic forage species, they are likely to be impacted negatively by changes in the planktonic food web in the Gulf of Maine as it warms rapidly. Increases in the role of the microbial food web over the grazing food chain reduces the large zooplankton prey for forage fish species like Atlantic herring. It is not obvious to me that the effects of warming ocean waters on the base of the marine food chain has been included in the MSE process. The EMaX (Energy Modeling and Analysis Exercise) carbon flow project for the Northeast Continental Shelf Ecosystem expired this issue further. This topic was explored further in a recent paper in Science Advances 2019; 5; eaav0474 ("Global ecosystem overfishing: Clear delineation within real limits to production")

Presumably this would increase the "natural mortality" component of the fish population dynamics models in the SAW/SARC (Stock Assessment/Stock Assessment Review Committee) process which establishes whether Atlantic herring stocks are subject to "overfishing" or "fishing mortality" rates in excess of the targets. I doubt that many of the constituents engaged in the MSE workshops understand the process which is utilized to establish the ABC. Since the "natural mortality" component is often estimated by difference in the mass balance calculation, it is hard to estimate the influence of climate change on pelagic fish stocks from changes in the marine food chain independently. Does the EFH for Atlantic herring include changes in the pelagic food chain from climate warming offshore and eutrophication inshore ?

In Nantucket Sound we see fish species migrating un from the Mid-Atlantic region (Summer flounder; scup; Atlantic mackerel; etc.) which are replacing species which are migrating northwards (Winter flounder; lobsters; etc.) into the Gulf of Maine. These species are being managed by the Mid-Atlantic Fishery Management Council

(MAFMC) in federal jurisdictional waters and Atlantic States Marine Fisheries Commission (ASMFC)/states inshore (0-3 miles). Warming inshore waters during the Summer draw these migrating forage fish closer to our beaches where they are prey for seals which are in turn fed upon by great white sharks (which pose threats to beach goers). Presumably some of these migrating forage fish species will provide bait for lobster pot fisheries in the Gulf of Maine (replacing the shortage of Atlantic herring). Since the ASMFC and MAFMC work together in managing many fish stocks, this will lead to coordination challenges for the NEFMC. The Massachusetts Division of Marine Fisheries (Ma. DMF) don't allow harvesting of river herring in state jurisdictional waters, but they are by catch in the Atlantic herring fishery offshore (3-200 miles)

Finally there is the challenge of potential conflicts between the Massachusetts Ocean Management Plan (MOMP) & Northeast Regional Ocean Plan in regards on how to balance conflicting ocean uses: fishing; ocean wind farms; US Navy training; increased commercial and recreational vessel traffic; etc. These ocean planning endeavors don't always engage fishermen/women and promote activities like large scale wind farms to provide renewable energy sources. MOMP specifically excludes fisheries issues from its planning mandates which has posed challenges in siting of wind turbines in state Ocean Act jurisdictional waters (0.3 to 3 miles offshore). I don't know whether the NEFMC has interacted in the NE Regional Ocean Plan development process. The Cape Cod Commission's Regional Plan doesn't include the effects of "N" enrichment of EFH in coastal embayments. but focuses on increasing water transparency (water quality indicator).

I used to participate in the meetings of the Gulf of Maine Council on the Marine Environment (GOMC) and chaired their Working Group on Fisheries & Aquaculture for the GOM Summit. The WG developed a number on indicators for sustainable fishing and socio-economic benefits for coastal communities. One of these was for the economic multiplier effect of commercial and recreational fishing which might be relevant to the loss of the working waterfront that supports fishing in many coastal areas like Cape Cod (which is being lost to tourist based endeavors which have better cost/benefit ratios). It is not apparent to me that the MSE process fully incorporated the consequences of maintaining working water fronts to support Atlantic herring fisheries.

Thus it seems to me that the ABC for Amendment 8 of the Atlantic herring FMP needs to address some additional concerns before it is implemented. Thanks for your consideration of my comments.

Dr. David D. Dow  
East Falmouth, Ma.

Sent: Thu, Jul 4, 2019 2:15 pm  
Subject: Fwd: cpublic comment on federal register omment

public comment on federal register

i hhave severe concens about the fishing profiteering community being the only ones in this country who comments on your public questions and on information submitted to uou. i do not think you are getting information which is not biased by profiteeering.i think the information you get from commercial fsiehermen is biased and slanted to bein their favor. they will tell you what they want so they can fish more. they have no interest in being honest. this commetrn is for the public record.pleae receipt. b ker bk1492@aol.com

[Federal Register Volume 84, Number 128  
(Wednesday, July 3, 2019)]  
[Notices]  
[Pages 31845-31846]

Thomas A. Nies, Executive Director  
New England Fishery Management Council  
50 Water Street, Mill #2  
Newburyport, MA 01950  
Comments@nefmc.org

August 1, 2019



**Re: Atlantic Herring MSE Debrief Comments**

Dear Tom,

As a stakeholder that attended both Management Strategy Evaluation (MSE) workshops and a person invested in the future of herring management, I am pleased to provide comments. This letter provides my personal perceptions of the New England Fishery Management Council's (Council) MSE for the Atlantic herring fishery and makes recommendations for the iterative MSE process going forward.

### **1. Clarity of the Purpose and Need for an MSE**

This MSE followed almost a decade of discussion and litigation related to managing Atlantic herring for its role in the ecosystem. The Science and Statistical Committee had twice asked the Council for guidance on setting catch limits, and although there was, and is, ample legal authority to establish more conservative overfishing limits and populations targets under provisions of the Magnuson-Stevens Act and National Standard 1 guidelines, the tradeoffs between user groups had not been assessed. The MSE provided a unique opportunity to explicitly consider these tradeoffs and ecosystem functions in the context of the Atlantic herring fishery.

The purpose and need for using an MSE included an ability to: (1) obtain stakeholder input on a forage based control rule that would ensure enough Atlantic herring are left in the ocean for predator and other ecosystem needs; (2) identify performance metrics that could be used to assess whether the control rule chosen was meeting the identified objectives; and (3) develop a process where several different harvest strategies - including "hockey stick" control rules, rules modeled after the Pacific Small Coastal Pelagic Species control rule, data poor control rules, and ideally control rules with ecological reference points based on key food web linkages could potentially be evaluated.

### **2. Understanding of the MSE Process**

The MSE process is new to the Northeast, and some participants were better prepared for this first one than others. To increase understanding, the Council did a good job making materials available in advance of the first workshop on the need for a new control rule and MSE processes elsewhere. However, in the small group sessions, it became apparent that some participants had not read the materials and had a poor understanding of the process.



Additional thoughts on process:

- **Spatial Considerations:** Despite warnings that spatial considerations were not likely to be considered in the MSE, many participants were frustrated by this. It was understandable that organizers wanted to limit the scope of the MSE to those control rules that could be implemented in time for the next specifications package, but in the future this discussion may be insightful, and should be part of the iterative MSE process.
- **Questionnaire:** The questionnaire that framed the afternoon breakout discussion at the first workshop contained ambiguous questions that even the facilitators did not seemingly have a common understanding of. In addition, questions were outcome driven, assumed a level of knowledge, and ultimately contributed to flawed results. Any questionnaire used in the iterative MSE should be vetted ahead of time.
- **Facilitators:** The lead facilitator appeared unfamiliar with the herring fishery in New England and unprepared for the controversial nature of the subject matter. Some (not all) of the small group facilitators were not fully able to lead productive discussions. Those discussions should have had an objective note taker rather than a potential advocate which created reporting bias in some circumstances.
- **Marine Mammal Consumption:** Even if the underlying data necessary to develop a model for marine mammal consumption did not exist at the time of the MSE, there was general disappointment that some estimate of marine mammal consumption of Atlantic herring could not be made and modelled based on the best available science. This is an area of concern that should be addressed in the absence of readily available multi-species models.
- **Models:** Because the predator models were unknown at the time of the first workshop, it was impossible to prepare participants for this aspect of the MSE process initially. Due to their complexity, it would have been helpful if the Council or the Science Center had conducted some instructional webinars prior to the second workshop to increase the general understanding of the strengths and weaknesses of various models.

### 3. Utility of the six distinct phases of this MSE

Recognizing that the purpose of this MSE was to develop ABC control rule alternatives that could be used in the 2019-2021 Atlantic herring specifications, the constrained timeline and the efforts to meet the timeline were appropriate. CLF appreciates that the Council has, twice, pushed back on NOAA Fisheries' attempts to set quota based solely on a single species approach as an interim measure. A proposed rule on Amendment 8 is long overdue.



#### **4. Appropriateness of an Open-invitation, Public Workshop**

An open-invitation workshop was appropriate under the circumstances. The Council was fortunate to get participants that included marine mammal scientists/naturalists, groundfishermen, commercial and recreational tuna fishermen, avian scientists, fisheries scientists, ecologists, conservationists, the U.S. Fish and Wildlife Service, and representatives of the commercial herring fishery. This diversity of experience and the public nature of the MSE process is an appropriate way to evaluate a control rule intended to provide ecosystem services rather than maximum catch for the directed fishery.

The criticism that there were too many participants is unfounded from my perspective. Limiting participation to invitees only in this first MSE would stymie future participation in the iterative MSE and it would have resulted in advocacy by the same cast of characters that regularly attend Council meetings. Having several new voices, new scientists, and new stakeholders that do not normally participate in fisheries management provided a broader perspective on the issue.

#### **5. Characterizing Tradeoffs in Presentations of MSE Results**

Even for someone ingrained in the regulatory process and familiar with the underlying science, the presentations of the MSE results were complicated. This became a constant problem at Advisory, Committee, and Council meetings where decisionmakers regularly appeared unprepared for the discussion and unwilling to make decisions. Appreciating that it was on a fast track, it would still have been helpful for the Science Center and others to have provided better labels for the graphs and additional explanatory notes on the slides.

#### **6. Council Integration of MSE Results and Workshop Input in Developing Alternatives**

Recognizing that thousands of potential hockey stick alternatives came out of the MSE, it was clear that the number of alternatives had to be reduced in Amendment 8.

Conservationists identified the following as important metrics in the MSE and sought a range of control rules that would: (1) maintain herring biomass above the established target? (> 75 percent unfished biomass); (2) minimize the number of years with no herring catch (fishery closed because cutoff reached); (3) minimize the variability in year-to-year herring catch; (4) maximized the mean annual spawning stock biomass; (5) re-establish and maintain normal population age structure; (6) maintain herring density in those areas where herring have historically been in large numbers; (7) reduce the number of Council managed predator species that are overfished or subject to overfishing; and (8) maximize the number of fishermen, businesses, and communities that indirectly depend upon healthy herring stocks.

Ultimately, the Council made a policy choice to narrow the range of alternatives based solely on metrics that favored the directed fishery. Given the results of the MSE process, a more balanced approach should have been used to narrow the range of alternatives. That said, I appreciate that the lead stock



assessment scientist at the Science Center and Council staff carefully and comprehensively answered the numerous questions that arose during that time.

The economic analysis that resulted from the MSE focused on short term costs to the directed fishery and did a poor job assessing the benefits of leaving herring in the water both to protect the biological integrity of the stock and its predators. Recognizing that it is difficult to quantify ecosystem benefits, this analysis still could have done a better job qualitatively describing and estimating the long term ecosystem benefits of a healthy herring population to other fisheries, to coastal communities, and to eco-tourism businesses. This seems to be a constant problem in NOAA Fisheries' analysis to the detriment of our Nations fisheries, coastal communities, and the entire marine ecosystem.

#### **7. Utility of the MSE in Balancing Tradeoffs between Objectives**

Amendment 8 and this MSE are important steps towards ecosystem based fisheries management in New England. Many studies had identified the importance of accounting for predatory fish, marine mammals, and seabirds when setting catch limits for forage species (Cury et al. 2011; Tyrell et al. 2011; Smith et al. 2015). Yet, this MSE was the first public acknowledgement that Atlantic herring should be managed differently for its role in the ecosystem.

It was well understood that managers needed a new control rule. The ideal control rule would provide a basis for setting harvest levels under a range of stock conditions (robust to uncertainty) and protect herring from overfishing by becoming increasingly conservative as stock biomass declined. The prior control rule for herring (implemented in 2013-2015 specifications and adopted for 2016-2018 specifications) was a rudimentary "constant catch" approach that allowed fishing at a higher rate than even the default control rule used for most predator species (75% Fmsy), and had no buffer for scientific uncertainty every third year (a 50 percent chance of overfishing).

The MSE process confirmed that the status quo control rule for Atlantic herring performed poorly under many circumstances, that assumptions about the health of a forage stock are risky, and that it was more likely than any other control rule analyzed in the MSE to put Atlantic herring in the place it is today - subject to overfishing and approaching an overfished condition. To develop a control rule by design instead of by default was the goal.

#### **8. Cost-Benefit Analysis of Using an MSE for Amendment 8**

Without knowing what this MSE cost, the benefits of a collaborative decision-making process have been discussed above. The MSE involved more public input and more technical analysis than any other amendment that I am familiar with, and its biggest advantage was the ability to model several different outcomes based on several variables and obtain buy-in from the Council and the public.



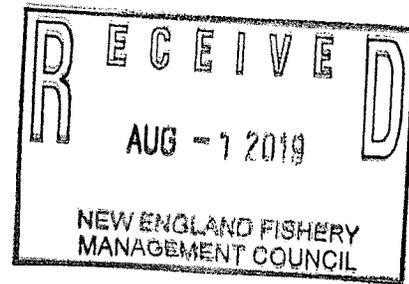
## **9. Comparison to Other Methods to Develop and Select Alternatives**

As discussed above, it is my opinion that this MSE was the best way to explicitly consider the tradeoffs between various users and ecosystem functions. There are ecological consequences related to not managing herring in an ecosystem context: reduced prey availability for valued predators including other fishes, marine mammals, and seabirds. There are also economic consequences associated with herring depletion for other fisheries, businesses, and communities that indirectly depend upon abundant herring in the ecosystem for cod, bluefin tuna, whales, seabirds, etc. In the absence of an MSE, none of those consequences would have been considered.

Thank you again for holding the MSE and for this opportunity to comment,

Erica Fuller  
Senior Attorney  
Conservation Law Foundation

**From:** Meghan Lapp <Meghan@seafreezeltd.com>  
**Sent:** Wednesday, July 31, 2019 5:26 PM  
**To:** comments <comments@nefmc.org>  
**Subject:** Atlantic Herring MSE Debrief Comments



I am writing to submit feedback on the Herring A8 MSE Debrief. I will address each of the areas identified as those on which the Council is seeking input:

- Clarity of purpose and need for using MSE in Amendment 8: When this issue was initially discussed at the AP, the Advisors were essentially told that MSE was going to be used. We received a presentation showing how MSE was the “hot new scientific process” of the day. We were also shown examples of MSE processes, but also how the example MSE processes/results actually were not used subsequently in the corresponding management action. I was left with the impression that the purpose/need was not so much for the herring FMP but to test an MSE process. Rather than using MSE to inform the herring FMP, the herring FMP was used to inform the Council about MSE. The goal seemed to be to use/test MSE, not necessarily to come to good decisions on herring.

- Sufficiency of general education about MSE, how well MSE was understood (e.g., models, role of stakeholder input) and any ideas for improving the education process (e.g., more literature, online instructional webinars, inperson seminars)?

MSE can look like whatever the organizer of the MSE wants it to look like. I have seen two very different MSEs that did not in any way resemble each other. In my opinion, no fishing industry stakeholder will want to sit through tutorials on MSE. If in a particular FMP, the Council decides it wants to engage in an MSE, it may want to give a brief, generic introduction to MSE and then describe the details of how it plans to conduct that particular MSE, but other than that I do not see the need for further education on this topic. I think that Council resources could be better spent on initiatives other than educating the public about MSE.

- Utility of the six distinct phases of this MSE (described above), whether some phases (or aspects of phases) more useful or successful than others and whether the time provided for each phase enough. The Phase 1 workshop, where members of the public defined the parameters of the second workshop, was not useful in my opinion. I was unable to attend the first workshop due to a last minute conflict in schedule. However, the results of the first workshop set the stage for the second workshop, Phase 2, which I did attend. I believe many of the problems arose due to the “stakeholder participation” which I will address in this bullet point, as well as later with that specific bullet point. When the Phase 3 workshop broke out into small group sessions, I was confused as to why we were discussing possibilities that ran contrary to the law, and well established fishery management principles. I was told by organizers that it was because those ideas were identified by participants, obviously uneducated participants, in the first workshop. I cannot believe the amount of time we wasted discussing illogical “wish lists”. It was not productive in any way. Wish lists of every member of the public, translated into workshop topics, is not an effective or efficient use of time and resources. I also believe it heightened political conflicts that existed throughout the A8 process, particularly by individuals not informed about fishery management and/or attempting to use the workshops as a political event rather than a scientific/fact finding process. In an attempt to “validate” all views, regardless of legal or practical or management expertise, it is my opinion that the workshop(s) became largely a waste of time. I also believe that it encouraged behavior that led to at least one individual being asked to leave at the last

session of the day. The presentations given by, for example, the NEFSC on food databases that was developed as part of Phase 2, was helpful, but that could have been given at any meeting and did not require a workshop of this kind. Additionally, that type of analysis can be conducted through the Council process and does not need an MSE process to be developed. I will give two examples of actual occurrences at one of the small group sessions I attended at the second workshop. Everyone in our small group was asked to give their opinion of what a reasonable herring ABC would look like, which is in itself problematic. The herring ABC legally must be scientifically based on stock size so as to not cause overfishing, and at the same time allowing the fishery to reach optimum yield. Yet, participants were giving specific numbers (i.e. it should never go above/below "x" amount) based on their wish personal lists. This was unrealistic and a waste of time. Then, during introductions, one of the members of my small group introduced himself as a professor from a non-coastal university and stated he didn't know anything about herring but was there because Pew asked him to be there. To his credit, he admitted he had no expertise in what we were discussing and therefore no recommendations. However, it was clear that he was there because an ENGO intended to use the workshop as a political measure by filling seats with their supporters. That in my opinion is not the best way to promote science or relevant management.

- Appropriateness of using open-invitation, public workshops for this MSE and/or recommendations for other formats. The open-invitation public workshops, as I explained above, in my opinion did not serve to benefit the fishery management process. I believe that the Council needs to reconsider the role of "stakeholder" as opposed to "public". The Council process is a public process, and rightly so, but not all members of the public are stakeholders. Not all members of the public are in fact educated enough to even participate in an interactive fisheries workshop, regardless of their formal education level. For example, the professor I noted in my comments above who attended the same small group. True stakeholders are those who have a direct, personal, stake in the fishery discussed, or a related fishery, beyond general public interest. Only those types of individuals, or those possessing technical expertise relevant to the subject matter, can actually provide relevant input. For example, I may enjoy looking at space shuttles, have some generic knowledge of space shuttles, and even enjoy or utilize the images provided by space shuttles. However, I am not a space shuttle expert and my input would not be applicable in troubleshooting space shuttle design. Neither am I a true stakeholder in the space shuttle industry. I am an interested member of the public with regards to space shuttles. The interested public with regards to fisheries management, those who are not true stakeholders and may not understand fisheries issues, in my opinion are not the most qualified individuals to propose "tradeoffs" for a fishery as a part of an MSE process, that will result in real impacts to true stakeholders. Public participation is open as part of the Council process and can occur there should people want to engage, and the Council members can weigh input. But as far as technical or experiential expertise necessary for effective management, this was not the best way to go. Furthermore, it puts true stakeholders, in my opinion, at a disadvantage if the input from someone completely unconnected with and uneducated about, fisheries is given the same weight as that of a stakeholder who knows the detailed ins and outs of a particular fishery and experiences the ramifications of decisions made. It also increases, in my opinion, the politicizing of the fishery management process, rather than promoting solid science and reasonable, effective fisheries management.

- Utility of how MSE results were presented in helping characterize the tradeoffs associated with various alternatives. In my opinion, a lot of the analysis that was presented using multiple kinds of graphs, etc., that most stakeholders and most of the public were unaccustomed to seeing/understanding was confusing. There was a lot of highly technical graphing, etc., that in my opinion didn't promote the best understanding for those not in scientific fields. Those involved with the project did present explanations

of how to read all of the graphs and understand the data, but unless an individual was present at those meetings, they may not have been able to interpret the information. I think the information could have been provided in a simpler, clearer format, other than the diet data information which was more clear and straightforward. Also, a lot of the information was very technical but didn't in plain numbers focus on the impacts to quotas, etc. There was some information in the document that included those impacts, but not much in comparison to the myriad of data included in the documents. In my opinion it seemed much more of an academic exercise than an actual connection of those academic exercises to the reality of quota amounts under all of the alternatives. There were far more graphs and charts and shades of colors than there were hard numbers to look at. That is hard for commercial industry members to analyze, as businesses and commercial fishermen typically look at numbers, not color charts. And I think that fact also encouraged more of a focus on theories and political opinions rather than actual fisheries impacts.

Also, the way that "tradeoffs" are assumed as part of MSE or as necessary as part of the fishery management process in every particular case immediately assumes that the commercial stakeholders of the fishery in question must "give something up". And that current management is insufficient. That is extremely disconcerting as a commercial fishing industry stakeholder. But in any case, the need for "tradeoffs" was not borne out by much of the facts or analysis in this particular MSE. For example, the food database analysis stated that fish in our region were generalists, not specialists, and therefore no real impacts to predators were occurring at varying harvest levels (unless those harvest levels essentially exceeded what is legally allowed). The data showed that the impacts to terns and birds was negligible and not requiring of tradeoffs, unless again herring harvest was basically set to illegal levels. When comparing the various control rules/harvest levels against various metrics, the then-current harvest control rule performed the best, which was acknowledged by even ENGO membership in another small group I participated in during the second workshop. What the data actually seemed to show was that the then-current fishery management process was working just fine on its own. The need for additional "tradeoffs" was unnecessary. This is undoubtedly the case in many fisheries. But the idea that "tradeoffs" are necessary or desirable as a matter of course and required to change current management across the board in my opinion is an incorrect narrative.

• How well the Council integrated the MSE results and workshop input in developing Amendment 8 alternatives. The MSE results were integrated into the documents, rehashed at many meetings, etc. They were well discussed, but the alternatives still didn't include an approach that still left an option open that allowed for the interim control rule- which performed well in all metrics- to operate in the same manner as existed prior to A8, simply adjusted for upturns or downturns in quota. That was discussed a few times at the AP meetings. I do not remember all the exact details, but I do remember the discussions. Also, there was not enough delineation in the document, or at least discussion, about at which point each control rule would essentially have its hockey stick shape cut off and be subject to a rebuilding plan. That should have been more clearly graphed in the document. There seemed to be a disconnection, and many in the public were not in my opinion informed that at some point the control rule becomes irrelevant and Magnuson rebuilding timelines would set in, should the stock take a downturn.

The discussions held at many Council meetings focused on herring at high levels and the impacts of the control rule given at that time the assumed state of herring. I do not believe we would have the current control rule had the decision been made after the most recent herring assessment. In my opinion, the Council also did not actually incorporate the data in Amendment 8 into the ultimate decision. The issues of predator/prey relationships, impacts to seabirds such as terns, etc., all generated results showing that the then-current ABC control rule was appropriate. That fact was actually agreed upon by ENGO participants in one of my workshop small groups, as mentioned above, where every single participant

agreed that based on the facts the then-current control rule worked best. However, that did not stop some of the participants from pressuring the Council for more restrictive measures. The research and analysis resulting from the herring MSE process did not show any scientific justification for departing from then-current management. Magnuson rebuilding requirements, as are now in place after the most recent herring assessment, are triggered before the herring biomass can reach a position to impact many of the other species considered as part of the MSE control rule options. The ultimate decision of the Council to choose a more restrictive control rule was a policy decision. The MSE process did encourage very uninformed members of the public to be an integral part of the management process, and I believe that politicized the issues even more than what would normally occur in a Council process. This in my opinion takes the process further away from science and more towards a public pressure driven process by non-stakeholders. I do not believe this is a positive move for fisheries management.

- Utility of the MSE in balancing tradeoffs between objectives. I do not believe that MSE actually balances tradeoffs between objectives if the balance of the input is off. There was not an even balance of commercial and non-commercial interests in the input/workshop process, and that process was in part driven by people without even basic fishery management knowledge. Objectives of the second workshop were set by people in the first workshop, so an imbalance in input can result in an imbalance in future objectives. I also disagree that every current fishery management plan is imbalanced and requires new consideration of “tradeoffs”. MSE immediately seems to assume that current management isn’t working and that new “tradeoffs” need to be considered. I don’t believe that this is the case.

- The benefits, if any, in using an MSE for Amendment 8, and if the benefits outweighed the costs. I personally did not see a benefit to using MSE at all, and in my opinion much of the actual science and related analysis could be done through the standard Council process rather than an MSE format. It seemed more of an academic exercise in public participation than fisheries management. I do not know what the total dollar amount spent on both workshops and all the other effort and Council staff time that went into this MSE, as well as peer review, but I know that they must have been substantial. And I do not believe that the benefits outweighed the costs of MSE.

- How this MSE process compared to how else the Council could have developed and selected alternatives. In my opinion, the Council could have obtained the same relevant scientific analysis by requesting such analysis as part of the normal Council process, from staff, the PDT or Science Center.

Thank you for the opportunity to comment.

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August 8, 2019

Thomas A. Nies, Executive Director  
New England Fishery Management Council  
50 Water Street, Mill #2  
Newburyport, MA 01950

**RE: Atlantic Herring MSE Debrief Comments**

Dear Mr. Nies,

As an attendee of both the May 2016 and December 2016 Atlantic Herring Management Strategy Evaluation (MSE) workshops, I am pleased to provide comments to assist the New England Fishery Management Council in its review of the MSE process.

Overall, my experience with the MSE workshops was a positive one, and I am grateful that I had the opportunity to participate. In my 14 years working with regional fishery management councils, this is the first time that a council explicitly recognized such a diverse group of stakeholders and invited them to in-person workshops to engage in the development of management measures. I applaud the New England Council for recognizing that a healthy herring population is important to indirect users of the resource – the striped bass, tuna and cod fishermen who rely on a healthy forage base of herring to sustain their target predators – and the ecotourism businesses who count on the presence of herring schools to attract whales and seabirds. Too often these voices are not heard in the management process, and I greatly appreciated the knowledge and perspectives that they brought to the table.

**Clarity of purpose and need for using MSE in Amendment 8.** As a stakeholder who has been engaged in Atlantic herring management since the development of Amendment 1 to the Atlantic Herring Fishery Management Plan (FMP), I was well aware of the need for a herring control rule that recognized and accounted for the role of Atlantic herring in the food web. I believe that the Council clearly communicated the purpose and need for developing a catch control rule through Amendment 8 to the Atlantic Herring FMP, the nature of MSEs, and why conducting an MSE would assist the Council's efforts to manage Atlantic herring in an ecosystem context.

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**Sufficiency of general education about MSE.** The Atlantic herring control rule MSE was the first time, to my knowledge, that an MSE has been utilized by fishery managers in the Greater Atlantic Region to evaluate management tradeoffs, so the MSE concept and process was new to nearly all stakeholders who participated in the workshops. The workshop organizers did an excellent job creating a workshop web page where informative background materials were posted well in advance of the workshop. Even so, some of the materials posted were quite technical, and I do believe an informational webinar in advance of the first workshop would have been useful.

**Utility of the six distinct phases of this MSE.** The six phases followed a logical path, and I appreciated the Council's commitment to keep the project on schedule. Of particular importance was taking time for the peer review. Because of the newness of MSE and the models used by the technical team, the peer review was necessary to ensuring scientific rigor and stakeholder buy-in.

**Appropriateness of using open-invitation, public workshops.** An essential aspect of moving to ecosystem-based fishery management is acknowledging that our forage fishery resources are resources that are shared among a diversity of stakeholders and certainly a wealth of ocean predators. As mentioned above, the diversity of stakeholders engaging in the MSE process was remarkable and served to strengthen the outcome. One suggestion would be to ensure that small group facilitators are both knowledgeable and neutral, and that they encourage all viewpoints and ideas to be heard. Some facilitators were also stakeholders, and they came to the workshop with strong opinions that came through as they were moderating the small groups.

**Utility of how MSE results were presented.** The modeling results presentations around which the second workshop was centered were rich in information but could have benefitted from improvements to the slides' layout to make the information easier to understand and digest. In some cases, there were multiple graphs placed on a single slide, making it difficult to read and interpret. If time was the major reason for packing each slide full of information, it may have been helpful to host a webinar in advance of the workshop.

**How well the Council integrated the MSE results and workshop input.** Although it was necessary for the Council to limit the range of control rule alternatives in Amendment 8, short-term economic considerations prevailed over long-term benefits to the ecosystem when the final range was selected. While I do believe the final control rule marks significant progress toward managing herring in an ecosystem context, other options developed through the MSE process held greater promise for advancing ecosystem objectives.

**Utility of the MSE in balancing tradeoffs.** Evaluating tradeoffs to inform decision-making is the primary purpose for conducting MSEs. Ultimately, however, the balance of tradeoffs remains the responsibility of managers. As mentioned above, I believe short-term economic considerations were given heavier weight than ecosystem benefits when the final control rule

was selected. A significant benefit of the tradeoff analyses was elucidating the shortcomings of the status quo control rule that was in place prior to Amendment 8. Certainly it is better for managers to design a control rule based on desired performance metrics that can be tested rather than to choose a risk-prone default method.

**The benefits, if any, in using an MSE for Amendment 8, and if the benefits outweighed the costs.** I understand that the MSE process likely incurred greater costs to the Council than pursuing a more typical path for developing amendment alternatives. Even so, the benefits of the MSE were great: 1) a large number and great diversity of stakeholders participated in developing the amendment, 2) management decision tradeoffs were evaluated in a transparent and methodical manner based on stakeholder-informed management objectives, and 3) the resulting control rule selected by the Council is more scientifically sound than the previous default control rule and will better serve predators and the many human users of the Atlantic herring resource.

**How this MSE process compared to how else the Council could have developed and selected alternatives.** The New England Council's use of MSE to develop a control rule for Atlantic herring was groundbreaking. Too often, key forage species like Atlantic herring are managed through a single-species lens without explicit consideration of predator needs or the economic benefits to fishing operations and businesses that rely on a healthy forage base to sustain predators. I strongly support the continued use and refinement of MSE to inform Atlantic herring management and hope that the obstacles that arose during this first MSE process, such as the inability to consider spatial and temporal harvest strategies and to model marine mammals as predators, can be overcome in future reiterations.

Thank you for the invitation and opportunity to provide feedback.

Sincerely,



Pam Lyons Gromen  
Executive Director

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August 8, 2019  
Re: Atlantic Herring MSE Debrief Comments

To the New England Fisheries Management Council and Executive Director Nies,

As a participant in the Management Strategy Evaluation process used to develop Amendment 8 of the Atlantic Herring Fishery Management Plan, I am pleased to help you assess this strategy from a stakeholder's standpoint. I attended Phase 3 in December of 2016 – *Review results, identify additional improvements*. Most of us were new to this kind of evaluation process, but were keen on participating as it represented a new level of reaching out, on the part of the Council, to more diverse groups of stakeholders. Overall, I found the MSE to be a stimulating exercise in participatory democracy. People came eager to debate the issues and defend their opinions but, except for one or two occasions, exchanges were respectful and civil, due in large part to excellent trained facilitators who moderated the breakout group conversations. What surprised me the most was the consensus, achieved relatively quickly, that preserving herring populations was the most important stakeholder priority, and the energy and dignity with which participants defended this position. In retrospect, and after attending the Council meeting in Plymouth where Amendment 8 was approved, I think the MSE process contributed to the Council's groundbreaking achievement.

In consideration of your individual questions:

***Clarity of purpose and need*** for using MSE in Amendment 8. Before this meeting I didn't know what MSE was, but I had attended a number of Council meetings and was aware of how acrimonious they could be. Once the particulars were explained, it was apparent that MSE could become a bridge for bringing stakeholder opinions to the attention of the Council, even if this wasn't precisely what we were asked to do. Not only would the Council listen to the stakeholders, but different stakeholders could listen to, and debate the issues with each other.

***Sufficiency of general education*** about MSE, how well MSE was understood (e.g., models, role of stakeholder input) and any ideas for improving the education process (e.g., more literature, online instructional webinars, in-person seminars)? The explanation of MSE was clear, but in practice we were all novices. What helped me the most was the facilitators who guided us through the particulars as they moderated the breakout groups.

***Utility of the six distinct phases of this MSE*** (described above), whether some phases (or aspects of phases) more useful or successful than others and whether the time provided for each phase enough. As I was only directly involved in Phase 3, I can't speak to whether some phases were more successful than

others. However, I believe that Phase 3 was quite successful, and that Amendment 8 was a landmark achievement.

***Appropriateness of using open-invitation, public workshops*** for this MSE and/or recommendations for other formats. I wholeheartedly endorse open participation, respectful deliberation, and transparent decision making, which the MSE facilitated.

***Utility of how MSE results were presented*** in helping characterize the tradeoffs associated with various alternatives. Understanding tradeoffs was to the success of the process, and to the unexpected consensus on the ABC rule.

***How well the Council integrated the MSE results and workshop input*** in developing Amendment 8 alternatives. MSE results demanded that the Council develop a novel strategy for Amendment 8 that would emphasize conservation. The Council rose to the occasion by developing ABC rules that were faithful to that emphasis.

***Utility of the MSE in balancing tradeoffs*** between objectives. Very much so.

***The benefits, if any, in using an MSE*** for Amendment 8, and if the benefits outweighed the costs. Any plan that has a chance of restoring herring to coastal areas is worth the cost.

***How this MSE process compared*** to how else the Council could have developed and selected alternatives. This process pushed the Council to innovate, not for innovation's sake, but to restore a species that is valuable both monetarily and ecologically, and to take a bold step towards ecosystem-based management. I don't know what other alternatives are, but they would have to be open, transparent and receptive to diverse opinions to be as useful as MSE.

I look forward to seeing how this bold experiment progresses.

Regards,



August 9, 2019

Thomas A Nies, Executive Director  
NEFMC

Tom / all - Please accept these comments concerning the MSE process used in developing the Council's preferred A8 control rule.

*Clarity and Purpose and Need for using MSE*

Unfortunately, the use of the MSE process turned a scientific question into a political outcome that conforms to the Lenfest hockey stick control rule campaign, which many fishery scientists have determined to be inappropriate for a pelagic resource like Atlantic herring, where no stock recruitment relationship (between fishing and stock strength) has been shown to exist while changing environmental conditions are believed to be the real driver of recruitment. I would not recommend its use in any other Council quota setting process.

*Sufficiency of general education about MSE*

Any education about the process can quickly be related during any future MSE, as was accomplished in Phase 1. I would not recommend the Council develop further training resources on MSE as a general priority. Unfortunately, the room was filled with people who did not have sufficient experience in the balancing of issues normally inherent in fisheries management in the region. This open process overwhelmed the normally reasoned science-based outcomes coming from the SSC in setting quotas. As the call for comments state, these evaluations often take years and are iterative and normally involve small groups of knowledgeable people. In this case, the truncated timeframe for a decision did not give sufficient time for anyone – the affected industry or managers - to fully understand the severity of the option chosen in A8 including the extremely low risk of overfishing (2%), while other Council managed species' overfishing risks are in the neighborhood of 40-50% and F rebuild risks are in the 20% range. While this outcome was eventually termed 'best available science', the future yield from this fishery will be significantly lower than it needs to be, since all the control rules evaluated were robust to the identified predator needs. Maintaining the yield from the fishery was lost in this process overwhelmed with politics from well-financed, uncompromising ENGO organizations.

*Utility of the six distinct phases of this MSE*

Although the PDT and other technical people did a very good job working through each phase during the year and a half process, additional time should have been given to the final phase in better understanding and addressing the inconsistencies with the control rule adopted against the historic way this fishery has been managed. The process should have ended after the NEFSC technical team did their work in Phase 2 (with the recognition that all options, including the status quo 90-95% MSY status quo yield, were robust to predator needs) rather than asking 'stakeholders' what other tradeoffs should additionally be considered in developing a control rule. Most of these people wanted to shut down the herring fishery and they have permanently, negatively affected the future yield from the fishery, which was their goal all along. They are the only ones happy with the outcome of the process. No fishing would also be the best available science in many of these people's minds.

### *Appropriateness of using open-invitation, public workshops*

This approach was entirely inappropriate and served to turn up the heat in the ENGO anti-herring fishing campaign that has taken place over the past 10 years or more...this process gave them a platform to ultimately convince the Council to permanently reduce the yield from this normally productive fishery. The last assessment identified environmental effects in the apparent decline of recruitment to the fishery (e.g. have the fish gone east with the Calanus and right whales?) while the Lenfest hockey stick control rule selected by the Council describes a stock recruitment relationship that the assessment scientists have long said does not exist in a pelagic forage fish like herring.

### *Utility of how MSE results were presented*

The information was presented with an underpinning of the view that less herring fishing is a good thing and it all went south from there. Yield from the fishery was clearly an afterthought although NS1 requires yields to be maintained absent other environmental consequences of which none were identified in this process.

### *How well the Council integrated the MSE results*

The control rule chosen by the Council ignores the fact that the 'status quo' approach of evaluating data against historic performance was robust to predator needs. I would not support using the open MSE format, used for herring, for developing other quotas in any other fishery in the region as politics trumped science in this case and I would expect the same outcome, at least in any other fishery in the region that is the focus of the ENGO community's 'less forage fishing is better' campaign.

### *Utility of the MSE in balancing tradeoffs.*

The herring MSE process utterly failed in balancing herring fishing interests in the region with those who want less fishing, without regard to the assessment or this process's clear determination that predator needs are supported in a status quo control rule outcome.

### *The benefits, if any, in using an MSE*

We see no benefit in this case or in its future use, from the perspective of the actual stakeholders in the region – fishermen and processors who permanently lost at least 15% of the yield from the herring fishery in the future, while the status quo was modeled in this process to be robust to predator needs.

### *How this MSE process compared to other Council processes*

It allowed for the politicization of an otherwise science-based process and outcome. The truncated timeframe in Phase 6 (particularly since we have waited a year for the proposed rule) was disappointing and did not allow for a reasoned evaluation of the preferred control rule selected by the Council. Only one Council member seemed to grasp this at final action and, to her credit, this understanding led her to vote against moving A8 forward.

Thank you for the opportunity to provide these brief comments. I look forward to working with this evaluation process as a member of the herring AP (if reappointed).

With best regards,  
Jeff

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Mary Beth Tooley comments:

- Clarity of purpose and need for using MSE in Amendment 8.

>The concept is clear.

- Sufficiency of general education about MSE, how well MSE was understood (e.g., models, role of stakeholder input) and any ideas for improving the education process (e.g., more literature, online instructional webinars, in person seminars)?

>There is a need to simplify. A mock example could be helpful. Some fishermen came for WS1 and never returned after lunch. They indicated that they had no idea of the meaning of the presentations.

- Utility of the six distinct phases of this MSE (described above), whether some phases (or aspects of phases) more useful or successful than others and whether the time provided for each phase enough.

>The 6 phases provided a useful framework but there clearly a need for more time especially when using the MSE results and incorporating them into alternatives.

- Appropriateness of using open-invitation, public workshops for this MSE and/or recommendations for other formats.

>I did not find the open invitation workshop to be useful. Many of the participants never grasped the MSE concept. In addition, many attendees were not familiar with the fishery, the framework for managing fish under the MSA and appeared to have never attended a Council meeting. A focused stakeholder panel meeting often throughout the process would have allowed greater education on MSE and its value as a management tool.

- Utility of how MSE results were presented in helping characterize the tradeoffs associated with various alternatives.

>I am not a fan of the “web” diagrams. There should be more descriptive language in the documents associated with the graphics.

- How well the Council integrated the MSE results and workshop input in developing Amendment 8 alternatives.

>The Committee should have taken more ownership earlier in the process. There was never a through discussion of the appropriateness of the metrics for analysis. Having every suggestion from the workshops flow to the analysis should have been considered thoroughly. It was also clear that many Committee members did not come prepared when the results were [presented].

- Utility of the MSE in balancing tradeoffs between objectives.

>The best use of the MSE is the ability to balance the tradeoffs. However, in this instance the Council did very little exploration of this feature. I have been participating in an MSE in another region and the word most often spoken is “iterative.” The process has been back and forth amongst all groups, Council, SSC, AP and stakeholder panel. In this case in NE the Committee passed one motion. When the results came back to the Committee I do not recall a single question on the interplay of the tradeoffs that created the resulting alternatives. People either weren’t interested or they simply did not understand it well enough to explore this. Additionally, the insistence of pushing the process to meet an infeasible time line was detrimental. Unfortunately, the outcome is now devastating to the industry and many blame the MSE

process. The alternative that was chosen could have been modified to balance a low probability while considering the economic impacts. The industry doesn't feel that there was any balance in the outcome.

- The benefits, if any, in using an MSE for Amendment 8, and if the benefits outweighed the costs. • How this MSE process compared to how else the Council could have developed and selected alternatives.

>I think there are benefits as the model can still be use into the future. However, I think much benefit was lost in this process as timelines became more important than outcomes.



**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
NATIONAL MARINE FISHERIES SERVICE  
Northeast Fisheries Science Center  
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Woods Hole, MA 02543-1026

August 8, 2019

Mr. Thomas A. Nies  
Executive Director  
New England Fishery Management Council  
50 Water Street  
Newburyport, MA 01950

Dear Tom:

Enclosed are written comments from NEFSC staff on the Management Strategy Evaluation process used to develop Amendment 8 to the Atlantic Herring Fishery Management Plan.

If you have any questions, please contact Tara Trinko Lake, Deputy Director of our Resource Evaluation and Assessment Division. Tara can be reached by email at [Tara.Trinko@noaa.gov](mailto:Tara.Trinko@noaa.gov) or by phone at (508) 495-2395.

Sincerely,

  
for Jonathan A. Hare, Ph.D.  
Science and Research Director

Enclosure

cc: C. Kellogg (NEFMC)  
J. Weinberg  
T. Trinko Lake  
M. Simpkins  
E. Thunberg  
S. Large  
R. Brown  
J. Deroba  
S. Gaichas



## ENCLOSURE

### NEFSC COMMENTS FOR HERRING MSE DEBRIEF (NEFSC AI#2019-235)

#### COMMENTS FROM ECOSYSTEM DYNAMICS AND ASSESSMENT BRANCH (These comments are from an analyst involved with the herring MSE)

The MSE approach and open stakeholder workshops were very positive steps. It is difficult to manage meetings with so many attendees, but important to be inclusive and to allow a diversity of voices to be heard. A further benefit of the open stakeholder process was the provision of data that directly improved the analysis (seabird population dataset from the Gulf of Maine). An MSE approach involving a broad range of stakeholders is ideally suited to exploring options, tradeoffs, and uncertainty surrounding proposed new management procedures with potentially conflicting objectives (i.e., fish for herring, but minimize impacts to predators of herring). The Council was clear in communicating this as the purpose for conducting an MSE. The Council also clearly communicated the above reasoning for the open stakeholder workshops.

The open stakeholder meetings and the efficiency of using the MSE results in the Amendment 8 process would have been improved if all participants had a better understanding of MSE. A general understanding of MSE as a decision-making process (rather than as a technical analysis) may be poor, even among those well-versed in typical Council processes and fishery management. Attempting to educate participants on the MSE process during an active MSE takes time away from discussing the issues central to that MSE; rather, general educational materials should be prepared and education opportunities offered outside a decision-making process and prior to developing any further MSEs. Development of educational materials would likely benefit from outside experts in education and visual communication, as well as Council staff, MSE analysts, etc. A range of materials (online materials for self-directed learning, posters/flyers, webinars, in person seminars) should be developed to suit the needs of the wide range of participants.

Although the phases of the MSE were appropriate overall, the timing for analysis was too short (Phase 2), and that the process would have benefitted from a second analysis phase addressing issues brought up in the December 2016 public workshop. Analysts had just enough time to meet the minimal requirements addressing the highest priority objectives and performance metrics, but had no time to digest or fully synthesize results across the different analyses prior to the second stakeholder meeting, and no way to respond to issues brought up at the second stakeholder meeting with additional analyses. Further, the time given to visualizing results (Phase 6) would have benefitted the process and in particular stakeholder workshops more had it been done earlier, during an extended Phase 2. A third stakeholder workshop reviewing the updated and better synthesized results would also have been beneficial, and may have smoothed the selection process undertaken by the Council if stakeholders went into it with improved understanding of the results. Given that Council selected a control rule in September 2018 (a full year after the timeline of phases ends), it

seems that more time could have been devoted to analysis and synthesis of results without compromising the timing of the final decision.

The Council used the results of the MSE in reaching its decision on the harvest control rule; but improved understanding of the MSE process and more time devoted to communication and synthesis of results would have increased the utility of the MSE results in the decision process. The Council may have missed opportunities to answer questions or evaluate tradeoffs using MSE results, perhaps because the amount of results was overwhelming and perhaps due to unfamiliarity with the process. The MSE was designed to allow the Council to evaluate performance of control rules, but a clear set of performance criteria did not seem to apply equally to selection of the subset of rules further considered in Amendment 8. Further, there were missed opportunities by not considering all of the questions that would be considered for the DEIS at the MSE development stage. It is possible that some quantitative analysis could have been developed to address factors that were considered qualitatively in the DEIS, but they were not because the MSE analysis phase was finished. In the future, perhaps an outline of the boxes that need checking at the DEIS phase would be useful at initial stakeholder meetings in the mix of objectives and performance metrics under consideration.

## **COMMENTS FROM SOCIAL SCIENCE BRANCH**

### **Clarity of purpose and need for using MSE in Amendment 8.**

Management of Atlantic herring has been contentious for years. Entities with interests in predators of herring have advocated for lower levels of herring catch, with the hope of higher SSB levels. The working hypothesis is that increased herring biomass would lead to improved biological outcomes for predators and improved social and economic outcomes for those stakeholders.

Examining the sizes of these effects is difficult and subject to many uncertainties. Even understanding the type of stakeholders and predators likely to be affected is difficult. An MSE approach, particularly one that cast a wide net by attempting to include all stakeholders that could be impacted by a change in the harvest control rule, seems warranted.

### **Sufficiency of general education about MSE, how well MSE was understood (e.g., models, role of stakeholder input) and any ideas for improving the education process (e.g., more literature, online instructional webinars, in-person seminars)?**

There was not nearly enough.

### **Utility of the six distinct phases of this MSE (described above), whether some phases (or aspects of phases) more useful or successful than others and whether the time provided for each phase enough.**

There was not enough time for nearly all aspects of the MSE. Phase I (Identify parameters) and Phase 3 (Review results) were both very difficult for stakeholders.

The Council, through the MSE process, asked stakeholders with very conflicting objectives to describe their preferences and desired outcomes. If we view this particular Council process as a negotiation, then we were essentially asking people to put their cards on the table. It is really hard to ask people to do that.

**Appropriateness of using open-invitation, public workshops for this MSE and/or recommendations for other formats.**

Before the analysis was conducted, we did not know which types of stakeholders or ecosystem components were likely to be affected. The open-invitation, public process would potentially include “too many” stakeholders – such as stakeholders that would ultimately not be impacted regardless of the HCR that was eventually chosen. But this is a far better than the opposite case in which un-invited stakeholders didn’t participate and no model was constructed for an ecosystem component that would be sensitive to the choice of the HCR.

**Utility of how MSE results were presented in helping characterize the tradeoffs associated with various alternatives.**

These could have been improved. Research communication can always be better.

**How well the Council integrated the MSE results and workshop input in developing Amendment 8 alternatives.**

I think the Council did this well.

**Utility of the MSE in balancing tradeoffs between objectives.**

The MSE itself doesn’t balance tradeoffs between objectives. However, I hope that the MSE provided information that helped the Council understand the tradeoffs between objectives.

**The benefits, if any, in using an MSE for Amendment 8, and if the benefits outweighed the costs.**

One of the benefits is the inclusive transparency of the process – all interested parties were invited to participate. This comes at a very high cost: parties without knowledge of fisheries management, the historical knowledge of the herring fishery, or the NE council need to be brought up to speed. Parties with claims that cannot be addressed through setting a Harvest Control rule (e.g., localized depletion) sidetracked discussion and reduced workshop productivity.

**How this MSE process compared to how else the Council could have developed and selected alternatives.**

The MSE process took a comparable amount of time to a Council action of this magnitude and controversy. However, it should have been allowed more time. There wasn’t a better way to go about making this difficult decision. However, including localized depletion in the set of problems addressed by Amendment 8 was not helpful.

## COMMENTS FROM POPULATIONS DYNAMICS BRANCH

(These comments are from an analyst involved with the herring MSE)

- Future MSEs should include time for education, especially before the formal process begins, as many stakeholders did not understand how their input would be used or how the MSE would inform managers. Not enough time was allotted to carry out this major process. Future education could take the form of webinars and online tutorials. NEFMC could partner with NEFSC to put together some education materials that could be used in the region for future MSE or perhaps through the MREP program.
- The six distinct phases were a useful way to frame the MSE. The biggest obstacle may have been insufficient time. The entire process and every phase was hurried, which was detrimental to stakeholder understanding of the MSE and may have ultimately created a negative impression of MSE as a tool.
- Open-invitation workshops would only be recommended in cases where the topic to be evaluated requires broad participation. Otherwise, some sort of invite only or sub-group process would probably be sufficient.
- The MSE did poorly when it came to presenting tradeoffs and with graphics in general. Most graphics were constructed on the fly, and little time was allotted to educating stakeholders about how to interpret the graphics. The graphics eventually constructed by SMAST were an improvement, but they were not available during workshops and the barplots did not lend themselves to the easy representation of tradeoffs. Development of an interactive user interface (e.g., Shiny App) that would allow stakeholders the ability to "play" in their own time outside of workshops would be useful.
- Generally, the Council integrated the results of the MSE into decision making relatively well by quantitatively specifying preferred performance and defining alternatives based on the criteria. One area that could be improved is a more explicit link between stakeholder input from the workshops and the preferred performance specified by the Council. For example, stakeholders associated with conservation groups strongly encouraged selection of a control rule premised on biomass infrequently going below 40% unfished biomass. The Council seemed to pay relatively little attention to this metric, and the Council should articulate why that metric was not considered in more detail.
- The MSE process ultimately chose a control rule that seemed to balance tradeoffs among objectives relatively well, considering yield, variation in yield, and some metrics related to biomass conservation (e.g., probability of overfishing). The analysts associated with the MSE did not adequately anticipate the difficulty of considering short- versus long-term tradeoffs. The outcome of the last herring assessment did not help the matter either. Future MSEs might consider an explicit "phase-in" plan where a management measure is implemented incrementally over a few years. This might avoid abrupt changes in management.
- There were numerous benefits to doing the MSE, and they outweighed the costs. The stakeholder workshops opened lines of communication among user groups. The conversations were collegial and beneficial. The biggest benefit may have been general acceptance of the outcome. Leading to the Council vote, stakeholders publicly noted that while not ideal, they would support the selected control rule. The herring industry seems

to understand and appreciate the process and logic behind the control rule. Doing the MSE promoted an informed discussion.

- The impetus for the herring amendment was selection of a long-term control rule. The MSE approach allowed for an informed discussion and logical selection of a control rule. Alternative approaches would not have achieved this as well.