

# Atlantic States Marine Fisheries Commission

## Atlantic Herring Section

*August 7, 2018  
10:15 a.m. – 2:00 p.m.  
Arlington, Virginia*

### 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 (*P. Keliher*) 10:15 a.m.
2. Board Consent 10:15 a.m.
  - Approval of Agenda
  - Approval of Proceedings from May 2018
3. Public Comment 10:20 a.m.
4. Review and Consider Approval of the 2018 Atlantic Herring Benchmark Assessment (SAW 65) **Action** 10:30 a.m.
  - Presentation of Stock Assessment (*M. Cieri*)
  - Presentation of Peer Review Report (*P. Campfield*)
  - Consider Acceptance of Benchmark Stock Assessment and Peer Review Report for Management Use
5. Lunch 12:00 p.m.
6. Discuss Recent New England Fishery Management Council (NEFMC) Recommendation to NOAA Fisheries on the 2018 Sub-Annual Catch Limits (*M. Ware*) 1:00 p.m.
  - Reconsider the ASMFC 2018 Sub-Annual Catch Limits **Final Action**
7. Provide Recommendations to NEFMC on 2019-2021 Fishery Specifications (*M. Ware*) 1:25 p.m.
8. Other Business/Adjourn 2:00 p.m.

The meeting will be held at the Westin Crystal City, 1800 S. Eads Street, Arlington, Virginia 22202; 703.486.1111

# MEETING OVERVIEW

**Atlantic Herring Section Meeting**  
**Tuesday, August 7, 2018**  
**10:15 a.m. – 2:00 p.m.**  
**Arlington, Virginia**

|  |  |  |
|--|--|--|
| Chair: Pat Keliher (ME)<br>Assumed Chairmanship: 02/18 | Technical Committee Chair:<br>Renee Zobel (NH) | Law Enforcement Committee:<br>Michael Eastman (NH) |
| Vice Chair:<br>Dr. David Pierce (MA)                   | Advisory Panel Chair:<br>Jeff Kaelin (NJ)      | Previous Board Meeting:<br>May 1, 2018             |
| Voting Members: ME, NH, MA, RI, CT, NY, NJ (7 votes)   |  |  |

## 2. Board Consent

- Approval of Agenda
- Approval of Proceedings from May 2018

**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.

|   |
|---|
| <b>4. 2018 Stock Assessment (10:30 – 12:00 p.m.) Action</b>   |
| <b>Background</b> <ul style="list-style-type: none"><li>• The 2018 Atlantic Herring Benchmark Stock Assessment was completed in June <b>(Supplemental Materials)</b>.</li><li>• A peer review was held on June 26-29 as a part of the SAW/SARC 65 review workshop</li></ul> |
| <b>Presentations</b> <ul style="list-style-type: none"><li>• Assessment overview by M. Cieri</li><li>• Peer review report by P. Campfield</li></ul>   |
| <b>Board actions for consideration at this meeting</b> <ul style="list-style-type: none"><li>• Accept the stock assessment report and peer review report for management use</li></ul>   |

## 5. Lunch (12:00 – 1:00 p.m.)

## **6. Recommendation from NEFMC to NOAA Fisheries Regarding 2018 Sub-ACLs**

**(1:00 - 1:25 p.m.)**

### **Background**

- At its June meeting, the NEFMC passed a motion recommending that the Regional Administrator use his authority to cap the 2018 harvest of herring at 2017 catch levels in management areas 1A, 1B, and 3; it was recommended management area 2 be capped at 8,200 mt.
- This motion was prompted by preliminary results of the 2018 Stock Assessment which indicates large quota reductions are likely to occur in 2019-2021 due to declines in SSB and recruitment. The intent of the motion is to reduce the severity of catch reductions in 2019.
- In 2015, the Section approved the 2016-2018 specification package for Atlantic herring. Should the Regional Administrator implement the recommendation from NEFMC to adjust the 2018 sub-ACLs, the quotas approved in federal waters will be different from those in state waters.

### **Presentations**

- Overview of NEFMC motion by M. Ware (**Briefing Materials**)

### **Board actions for consideration at this meeting**

- Reconsider and approve modified sub-ACLs for the 2018 fishery **Final Action**

## **7. Provide Recommendations to NEFMC on 2019-2021 Specifications (1:25 – 2:00 p.m.)**

### **Background**

- NEFMC is scheduled to set Atlantic herring specifications for 2019-2021 in December 2018. Ahead of the Council meeting, the SSC and Herring PDT will work to develop and evaluate alternatives.
- The herring specification package includes the OFL, the stockwide ACL, management area sub-ACLs, a RSA, fixed gear set-aside, and river herring/shad catch caps.
- The Section can provide recommendations to the NEFMC on alternatives to consider and analyze during the specification process.

### **Presentations**

- Overview of specification package by M. Ware (**Briefing Materials**)
- Discussion on recommendations to NEFMC by P. Keliher

## **8. Other Business/Adjourn**

**DRAFT PROCEEDINGS OF THE  
ATLANTIC STATES MARINE FISHERIES COMMISSION  
ATLANTIC HERRING SECTION**

**The Westin Crystal City  
Arlington, Virginia  
May 1, 2018**

**These minutes are draft and subject to approval by the Atlantic Herring Section  
The Section will review the minutes during its next meeting**

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**INDEX OF MOTIONS**

1. **Move to approve agenda** by Consent (Page 1).
2. **Move to approve proceedings of February, 2018** by Consent (Page 1).
3. **Move to have the Atlantic herring spawning re-closure protocol to read that a sample is defined as a minimum of 80 randomly selected adult sized fish, with a target of 100 fish, from a fishery dependent or independent source** (Page 4). Motion by Steve Train; second by Ray Kane. Motion carried (Page 5).
4. **Move that the Atlantic Herring Section approve the 2018 Atlantic Herring FMP Review, state compliance reports, and *de minimis* status for New York** (Page 6). Motion by Doug Grout; second by Steve Train. Motion carried (Page 6).
5. **Motion to adjourn** by Consent (Page 7).

**ATTENDANCE**

**Section Members**

|  |  |
|--|--|
| Pat Keliher, ME (AA)                           | Dave Borden, RI (GA)                               |
| Steve Train, ME (GA)                           | Colleen Giannini, CT proxy for P. Aarrestad (AA)   |
| Doug Grout, NH (AA)                            | John McMurray, NY, proxy for Sen. Boyle (LA)       |
| G. Ritchie White, NH (GA)                      | Jim Gilmore, NY (AA)                               |
| Dennis Abbott, NH, proxy for Sen. Watters (LA) | Adam Nowalsky, NJ, proxy for Asm. Andrzejczak (LA) |
| Rep. Sarah Peake, MA (LA)                      | Tom Fote, NJ (GA)                                  |
| David Pierce, MA (AA)                          | Jeff Brust, NJ, proxy for L. Herrightly (AA)       |
| Raymond Kane, MA (GA)                          |  |
| Bob Ballou, RI, proxy for J. McNamee (AA)      |  |

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

**Ex-Officio Members**

**Staff**

|             |                |
|-------------|----------------|
| Robert Beal | Megan Ware     |
| Toni Kerns  | Jessica Kuesel |

**Guests**

|                                    |  |
|------------------------------------|--|
| Rene Cloutier, ME MMP              | Arnold Leo, E. Hampton, NY             |
| Justin Davis, CT DEEP              | Loren Lustig, PA (GA)                  |
| Jeff Deem, VMRC                    | Andrew Petersen, Bluefin Data, LA      |
| Shaun Gehen, SFC, DC               | Andy Shiels, PA (Administrative proxy) |
| Zach Greenberg, PEW Trusts         | Melissa Smith, ME DMR                  |
| Najih Lazar, Univ. of Rhode Island | Justin Davis, CT DEEP                  |

The Atlantic Herring Section of the Atlantic States Marine Fisheries Commission convened in the Jefferson Ballroom of the Westin Crystal City Hotel, Arlington, Virginia; Tuesday May 1, 2018, and was called to order at 3:00 o'clock p.m. by Chairman Patrick C. Keliher.

**CALL TO ORDER**

CHAIRMAN PATRICK C. KELIHER: Good afternoon everybody. We are going to jump right into the business; to try to make up a little bit of time.

**APPROVAL OF AGENDA**

CHAIRMAN KELIHER: Item Number 2 is the approval of the agenda. Are there any additions to the agenda? Seeing none; approval of proceedings from the February, 2018 meeting.

**APPROVAL OF PROCEEDINGS**

CHAIRMAN KELIHER: Are there any comments on the proceedings back from February? Seeing none; those are approved.

**PUBLIC COMMENT**

CHAIRMAN KELIHER: Moving right along to public comment, we do have a contingency from Senegal here today; and would ask Najih Lazar to please come to the public microphone to make a quick statement.

MR. NAJIH LAZAR: Good afternoon, Mr. Chairman. Thank you very much and good afternoon everybody. My name is Najih Lazar; I'm with the University of Rhode Island with the Coastal Resource Center. I used to be a part of this Commission many years ago; and glad to be back here.

I'm now working in a different front in Africa, been in Ghana, and then recently working in Senegal on still fisheries management, trying to share and exchange the learning experiences of the Atlantic States Fisheries Commission. I have

with me here a delegation that represents the Ministry of Fisheries and the Maritime Economy from the Senegal; and they are here behind me. If you wouldn't mind, stand up.

The Minister of Fisheries is with us. Unfortunately, he is a little bit behind schedule but he will join us for the reception dinner tonight. Thank you very much for having us here today; and we'll look forward to listening to the Atlantic herring, and later on the ACCSP proceedings as well. Thank you.

CHAIRMAN KELIHER: Great, thank you very much. We appreciate your attendance here at the meeting today. Please don't watch my process on running a meeting. I might not be the best one. Just as a reminder; we go by Pat's rules, not Roberts Rules.

**DISCUSSION OF POTENTIAL IMPACTS OR POSSESSION LIMITS IN THE ATLANTIC MACKEREL FISHERY IN HERRING AREA 1A**

CHAIRMAN KELIHER: Item Number 4 is Discussion of Potential Impacts or Possession Limits in the Atlantic Mackerel Fishery in Herring Area 1A. Megan is going to present on that.

MS. MEGAN WARE: Today I'm going to review some of the ongoing actions related to the harvest of shad, river herring and Atlantic mackerel. Many of these discussions have occurred in different management setting. The goal today is to try and synthesize these for the Section; and provide an update on the actions that have been initiated. There are two primary issues I'm going to touch on today. The first is the Atlantic mackerel fishery. I will talk about their river herring and shad catch caps, the accountability measures when 100 percent of the quota is harvested, and then action that has been taken at the Councils.

Then I will also touch on the river herring and shad catch caps in the Atlantic herring fishery; since one of those has been harvested. On



February 23, the river herring and shad catch cap for the mackerel fishery was harvested; and a 20,000 pound trip limit was implemented. Concurrently it was reported that about 89 percent of the mackerel quota had been caught.

The figure to the right is the Atlantic mackerel quota from the GARFO reporting website. The blue line is the 2018 catch; and the yellow line is the 2017 catch. You can see that blue line is quite steep at the beginning of the year; and it kinds of levels off once that 20,000 pound trip limit was implemented.

There is about 2.2 million pounds of quota that remain; and it's estimated that 100 percent of the quota will be caught in November. Why is the mackerel fishery a concern for the Herring Section? There is a 0 possession limit for mackerel when 100 percent of the quota is caught. Regulations state that a fisherman cannot take, retain, possess, or land mackerel under a 0 possession limit.

This suggests that encountering mackerel in the herring fishery could be a violation. As a result, mixing of herring and mackerel, even at minimal levels, could hinder the operation of the herring fishery. There have been several discussions at the New England Council and Mid-Atlantic Council. I'm going to focus on the Mid-Atlantic Council discussions; since that's where most of the action has taken place.

At that Mid-Atlantic Council meeting there were two frameworks that were initiated; one that is more of a short term view for the rest of the 2018 fishing year, and then one has a longer view during the 2019 to 2021 specification package. Short term framework action has been initiated to consider possession limits in the mackerel fishery; once 100 percent of the quota is caught.

At present it appears that the three options in that document will be status quo, so that would be a 0 possession limit, a 5,000 pound possession limit, and then a 10,000 pound

possession limit. Final action is expected in June, 2018, so it's a fairly quick timeframe; and then subsequent rulemaking could be used to correct the prohibition on take in the current regulations.

Looking more towards a longer-term solution, the Mid-Atlantic Council is working on the specification package for 2019 to 2021 in the mackerel fishery. Through that they are going to consider incremental trip limits in the fishery. One of the options presented in the briefing materials was that at 80 percent of the quota there would be a 40,000 pound trip limit; and then once it got to 95 percent of the quota there would be a 5,000 pound trip limit.

These trip limits address the need for a limited amount of mackerel to be harvested following the closure of the directed fishery; and final action is expected in August. The New England Council has also discussed this issue. Given much of the action was taken at the Mid-Atlantic Council, the New England Council passed a motion of support; to develop the action by the Mid-Atlantic Council to modify the possession limit and the definition of take. Overall there are ongoing actions that should address concerns regarding the 0 possession limit ahead of November, which is again that projected date when 100 percent of the mackerel quota will be caught.

Most of the action is occurring at the Mid-Atlantic Council; and the actions consider both immediate and longer term solutions. Then I'll also briefly touch on the Atlantic herring, river herring, and shad caps. On March 12, the catch cap for the midwater trawl vessels in the Southern New England/Mid-Atlantic area was caught.

As a result vessels issued a federal herring permit, which fish with midwater trawl gear, may not catch, possess or land more than 2,000 pound of herring in or from that closure area. That is going to be the purple area on the figure. Then this final slide is just an overview of the other catch cap areas. Right now that

Cape Cod area is about 15 percent of the river herring and shad catch cap has been caught. The Southern New England bottom trawl is at 25 percent, and the Gulf of Maine is at 0 percent. With that I will take any questions.

CHAIRMAN KELIHER: Are there any questions of Megan and the presentation? Wow, everybody is quiet, good.

#### **TECHNICAL COMMITTEE REPORT ON SPAWNING FISH SAMPLE PROTOCOLS**

CHAIRMAN KELIHER: Seeing none; we will move on to Item Number 5, the Technical Committee Report on Spawning Fish Sample Protocols.

MS. WARE: I will be putting on the TC hat today to present the TC report. As a reminder, at the February meeting the Section tasked the TC with investigating a method of scaling up samples of herring that are less than the required 100 fish minimum. This was prompted by concern that samples of herring greater than 90 fish, but less than 100 fish, are not considered when determining a spawning re-closure.

To remind everyone on the spawning re-closure protocol. Amendment 3 allows for a two week extension of a spawning closure; if a sample indicates a significant number of spawned herring. To initiate a re-closure that sample must comprise 25 percent or more mature herring; by number in a sample that have yet to spawn.

The sample also has a requirement, and it must be a minimum of 100 randomly selected adult size fish from a fishery dependent or independent source. There are really two criteria here. There is a trigger that initiates a re-closure; which is that 25 percent, and then there is also a requirement that a sample be made up of 100 fish.

The TC met in March via conference call to discuss this task. Overall the TC concluded that

the requirement to have a certain percentage of mature herring, so that 25 percent, is really the priority in allowing for a re-closure. Regarding the size of the sample, the TC recommends that the Section maintain a target of 100 fish per sample to ensure a robust protocol.

But the TC did express comfort with a minimum baseline of 80 fish per sample. However, that sample must meet that 25 percent mature criteria in order to trigger a re-closure. Since the TC is recommending that priority be given to the composition of the sample, no analysis is needed to scale up a sample of herring less than 100 fish. That 25 percent can be applied to a sample of less than 100 fish. The TC does note that whether there is an 80 or 100 fish minimum requirement, a line must be drawn somewhere to define a sample.

As a result, there will always be some samples which fall slightly short. As a reminder, stipulations for a sample in the forecast system, so that's for that initial four week closure, are slightly different in that each sample must contain at least 25 female herring in gonadal stages 3 through 5.

Currently samples which contain less than 100 fish are included in the forecast system; as long as they meet that 25 female fish requirement. Next steps for the Board, if the Board is interested in altering that minimum fish requirement in the re-closure protocol that can be done via a Board motion, and then we would also incorporate that change into a subsequent management document; so whatever is the next addendum initiated by the Board, or by the Section, excuse me. With that I'll take any questions.

CHAIRMAN KELIHER: Are there any questions regarding the TC report on this issue? Ray.

MR. RAYMOND W. KANE: Yes, Megan. The TC recommends 100 fish count; but they're comfortable with an 80. Can you explain that?

MS. WARE: They are recommending that it be a target of 100 fish; but that if a sample was 80 fish they would be comfortable using that to determine if a re-closure is needed in the herring fishery.

CHAIRMAN KELIHER: Doug.

MR. DOUGLAS E. GROUT: Just to be clear on what our next steps are. If we do by Board vote here that 80 fish minimum would go into place immediately, and you just in a future action just change the wording in it. One of the things that I got out of the TC memo, which I think you were pretty clear about is even with an 80 fish minimum sample, 25 percent at a minimum must be spawning fish, sexually mature excuse me, sexually mature fish. Correct?

CHAIRMAN KELIHER: Steve.

MR. STEPHEN TRAIN: I'm prepared to make a motion that gets us there as we continue the discussion if you would like.

CHAIRMAN KELIHER: That would be fine, thank you.

MR. TRAIN: I think you have it; but I would be happy to read what I've got. **Move to have the Atlantic herring spawning re-closure protocol to read that a sample is defined as a minimum of 80 randomly selected adult sized fish, with a target of 100 fish, from a fishery dependent or independent source.**

CHAIRMAN KELIHER: Second by Ray Kane; any comments, go ahead Bob?

MR. BOB BALLOU: Given that this is such a high volume fishery, I'm just struck by the fact that we're bouncing between 80 and 100 fish as if it were a challenge; and it must be on occasion to get a sufficient sample size. But Megan, can you just kind of clue me in to as to why on occasion there is a challenge in getting enough herring for sampling; given that it is a high volume fishery?

MS. WARE: I'm not sure it was necessarily a challenge; but my impression was that some states when they did the sampling will get 98 or 99 fish and that would automatically disqualify that sample from being used to determine if a re-closure is needed. That was the request to look at a lower minimum sample size. But as the TC notes, whether the baseline is 80, 90, 100 at some point a line is drawn; and so there will always be samples that might fall slightly short.

CHAIRMAN KELIHER: Dennis.

MR. DENNIS ABBOTT: Would it be better to define the amount of fish required as a measure of volume versus number to someone sitting down and count out 100 herring; or does 100 herring represent 50 percent of a five gallon pail or a full five gallon pail?

CHAIRMAN KELIHER: Yes, all I can comment on is I know when my staff are picking up fish they go down and randomly select from the catch as it's being offloaded. It's never been done by volume. They just try to guesstimate when they have somewhere around 100 fish. Almost always they end up with over 100 fish.

But in two cases last year, one case I think David and Doug and I talked about on a phone call, resulted in two samples that potentially would have closed the eastern Gulf of Maine, only we only had 97 and 96 fish I think. I think it seems to me this is an attempt to try to make sure that when we've got the right amount of fish that we've got some flexibility in showing that we can make those types of closures and protect the stock. Colleen.

MS. COLLEEN GIANINI: Megan, I'm just wondering if you can speak to, when we met on this last I think we had suggested a minimum sample size of 90 fish; so I'm a little bit surprised it went down from there. I know we're kind of splitting hairs. But can you speak to how they got to 80?

MS. WARE: I think it was more of a comfort level with the TC than any sort of statistical analysis. But they did note that obviously the higher the number the more robust the sample is; and a greater representation it is of the population.

CHAIRMAN KELIHER: I did ask Matt Cieri from my staff and from a statistical standpoint; was he more comfortable with 90 versus 80, and at that time he answered that he didn't think there would be any difference. I know the question was asked of Renee; but I don't know if you ever heard back from here.

MS. WARE: I think she was interested in checking with the TC members; and it sounds like you might have gotten an answer through your state representative.

CHAIRMAN KELIHER: Any additional comments or questions on the motion? David.

DR. DAVID PIERCE: Yes we've discussed the spawning re-closure protocol for quite a long time. Frankly, we've discussed it so much it became humorous; maybe not to everybody else, but to me as we struggled to figure out how in the world do we reclose when we have some evidence that the fish are still spawning? It's important to reclose, and frankly I've always turned to my staff that has done the sampling that has got the statistical knowhow to ask him, as well as staff from other states, what can we live with?

What will do the jobs, because the fishery is closed, it can be hard to get samples. They'll sample from the whiting fishery, they'll sample whatever they can, whatever is available, Bill, they will get it. In the past I've always been concerned that we might get a sample that would be biased that might come from a fishery that's actually not representative of the sea herring fishery itself that we reinstate that would stop when the closure was reinstated.

But I backed off of that. I think the motion is a good one; it covers the fishery dependent and independent source. My assumption is that our staff, your staff, New Hampshire involved in this will strive to get the 100 fish. But if they just can't get it, then okay 80 randomly selected adult fish, why not? This is a good way forward; and I support it.

MR. ABBOTT: Last word. Would it be better if it read that a protocol to read that an adequate sample of selected adult fish versus a number, get away from having a number if it was an adequate number – with a target of 100 fish; just a thought.

CHAIRMAN KELIHER: That's kind of arbitrary to the sampler. I mean it's still a target. Then who determines what is adequate at that point?

MR. ABBOTT: The scientists. You're still looking. What happens now with the minimum of 80 when you get to 78? It just continues to pin a number, where the people doing the sampling know what adequate number will give them their necessary information.

CHAIRMAN KELIHER: Yes, my feeling is the 80 becomes the floor in this conversation. We don't see many less than that. But I'll see what other folks have. Doug.

MR. GROUT: I see the target and the threshold; and I think the threshold is what they're saying is the minimum that's adequate.

CHAIRMAN KELIHER: Thank you, anybody else? Seeing none; I'm going to read the motion. **This is move to have the Atlantic herring spawning re-closure protocols to read that a sample is defined as a minimum of 80 randomly selected adult sized fish, with a target of 100 fish, from a fishery dependent or independent source. Motion by Mr. Train seconded by Mr. Kane, are there any objections to the motion? Seeing no objection the motion passes.** That concludes Item Number 5.

**CONSIDER APPROVAL OF THE 2018 FMP  
REVIEW AND STATE COMPLIANCE**

CHAIRMAN KELIHER: Item Number 6 is to Consider Approval of the 2018 FMP Review and State Compliance. Megan.

MS. WARE: I will go through the 2018 FMP Review on the 2017 Fishing Year. The last stock assessment update for Atlantic herring occurred in 2015; and it included data through 2014. Results of that assessment indicated that Atlantic herring is not overfished and overfishing is not occurring. The next assessment is scheduled for 2018; with a SAW/SARC review scheduled for June, and results of that assessment will be used to inform the next specification package.

The U.S. Atlantic Herring Fishery is controlled by annual catch limits. The stock-wide ACL for 2016 to 2018 was 104,800 metric tons; and then the Area 1A sub-ACL is 30,300 metric tons. Preliminary information from 2017 indicates that 29,164 metric tons were caught in Area 1A; which represents 90.9 percent of the sub-ACL.

Since the directed fishery closes when 92 percent of an area's sub-ACL is projected to be reached, there was no closure in that Area 1A fishery in 2017. I just wanted to note that this figure is updated from the figure that is in the document. The ACCSP 2017 landings were posted after the PRT had completed the FMP review.

This updated figure, which now includes 2017, will go into the FMP review. This slide outlines the days out program, and the effort control measures which were implemented in Area 1A for 2017; 2017 was the first year under Addendum I. The original landings schedule for Area 1A was set at three days for vessels with a Category-A permit.

Then this was subsequently increased to four, and then five, and then seven days; as it became clear that the landings were occurring

at a slower pace than the previous two years. Likewise the weekly landing limits for the Category-A permits also increased throughout Trimester 2. For the start of Trimester 3 there was a three-day-consecutive-landings limit, and then this was increased to seven days, once it became clear that landings were below the sub-ACL.

Trimester 3 landings continued well into December, creating a longer season than the previous two years. This slide goes through the spawning closures that occurred in 2017. In eastern Maine it closed on the default date of August 28, since there was only one sample from that area. Then the closure was extended for two additional weeks, closing October 16 through the 30th, after a sample indicated a significant number of spawning herring.

In western Maine, the GSI 30 model was used to close on the projected date of September 26. There was no re-closure in the western Maine area. Then for Massachusetts and New Hampshire, again the GSI 30 model was used to project a closure date of October 1. That closure was extended two additional weeks; after samples indicated a significant number of spawned herring.

In terms of state compliance, the PRT finds that all states are in compliance with the Atlantic herring FMP. For de minimis status a state may be eligible for de minimis if it is combined average of the last three years of commercial landings constitutes less than 1 percent of the coastwide commercial landings for that same three year period. New York has requested and met the requirements of de minimis status. The PRT recommends that the Atlantic Herring Section approve the 2018 Atlantic Herring FMP Review, State Compliance Reports and de minimis status for New York.

CHAIRMAN KELIHER: Any questions on the Compliance Report? Seeing none; I would entertain a motion. Doug.

**MR. GROUT: I move that the Atlantic Herring Section approve the 2018 Atlantic Herring FMP Review, state compliance reports, and de minimis status for New York.**

CHAIRMAN KELIHER: **Motion by Mr. Grout, is there a second, second by Mr. Train. Any discussion on this, any opposition to this, seeing none; the motion passes unanimously.** That concludes all the business. Is there any additional business that would be brought before the Section? David.

DR. PIERCE: Not so much business, but a comment regarding what we might see this year; that is the amount of herring that will be landed. I noticed in the presentation that Megan gave that the most recent year's amount of landings dropped down relative to the previous years. I guess we could speculate part of the reason for that was availability of menhaden; because of what we have done, what ASMFC has done with menhaden management, the size of the quotas, allocations to the states.

I know there will be a lot more herring available to be harvested by purse seiners; primarily. We may be seeing what the states do; notably New Hampshire, Massachusetts and Maine, what we feel we have to do as we always do every year; changing the days for landing, for catching, and all that we do regarding slowing down the harvest of sea herring.

I suspect that we may find ourselves with a lot of menhaden being caught; assuming they're in our waters and they can be caught. We'll see a much reduced landing of sea herring as menhaden takes over; as I hope it would, the big market. We shall see.

CHAIRMAN KELIHER: Yes, I'm never certain of what my crystal ball might, it's very foggy. Like everywhere else in Maine, my crystal ball is very foggy of what may happen with herring landing. Are there any additional items for the Section? Mr. White.

MR. G. RITCHIE WHITE: Just curious if Megan has ever staffed a Board that has only lasted 40 minutes before.

#### ADJOURNMENT

CHAIRMAN KELIHER: If she wasn't so long winded we would have been done 20 minutes ago. If there is no other business to be brought before the Section, I would entertain a motion to adjourn; motion to adjourn, so move. Thank you very much.

(Whereupon the meeting adjourned at 3:40 o'clock p.m. on May 1, 2018)

## Atlantic Herring Technical Committee Task List

Activity Level: Low/Medium

Committee Overlap Score: Medium

### Committee Task List

While there are no Section tasks for the TC at present, there are several annual activities in which TC members participate, both through the Commission and NEFMC

- Summer/fall collection of spawning samples per the spawning closure protocol
- Participation on NEFMC PDT (will be working to recommend specifications for the 2019-2021 fishing years)
- Annual state compliance reports are due February 1

### TC Members

Renee Zobel (NHFG – Chair), Kurt Gottschall (CT DMF), Dr. Matt Cieri (ME DMR), Micah Dean (MA DMF), John Lake (RI DFW)



# Atlantic States Marine Fisheries Commission

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## MEMORANDUM

**TO:** Atlantic Herring Section  
**FROM:** Megan Ware, FMP Coordinator  
**DATE:** July 20, 2018  
**SUBJECT:** Atlantic Herring 2018 Sub-ACLs and 2019-2021 Specifications

At its August meeting, the Atlantic Herring Section (Section) will consider changes to the 2018 Atlantic herring sub-ACLs as well as recommendations to the New England Fishery Management Council (NEFMC) regarding the 2019-2021 specification package. This memo provides background information on both agenda items.

### Modifications to the 2018 Sub-ACLs

In June, the NEFMC discussed preliminary results of the 2018 Atlantic Herring Stock Assessment, which indicates reduced biomass and poor recruitment over the last five years. Based on these results, it is expected that severe cuts in catch will be implemented for 2019-2021. Specifically, projections suggest that if the full 2018 ABC is harvested (111,000 mt), the 2019 coastwide catch could be limited to 13,700 mt. In contrast, if half of the 2018 ABC is harvested (55,000 mt), the 2019 coastwide catch could be set at 28,900 mt. This means that reducing catch in 2018 could lessen the severity of cuts implemented in 2019.

In light of this information, the NEFMC passed the following motion regarding the 2018 Atlantic herring fishery:

*Upon the approval of the 2018 Atlantic Herring Stock Assessment peer review, or sooner if possible, the Regional Administrator, under existing authority allowing for in-season adjustments, take action to cap the 2018 harvest of Atlantic herring at the 2017 catch levels by management areas 1A, 1B and 3. The Area 2 sub-ACL should be set to 8,200 mt for 2018 sub ACL.*

Area 2 had already surpassed 2017 landings and, as a result, the NEFMC recommended the area be capped at 8,200 mt to provide some quota for the early winter small-mesh bottom trawl fishery. The Regional Administrator has the authority to make in-season adjustments to specifications, after consulting with the Council, per Section 648.200 (e).

Table 1 lists the NEFMC recommended sub-ACLs for 2018 as well as the percent reduction by management area.



**Table 1:** Recommendations from NEFMC to NOAA Fisheries on 2018 Atlantic herring sub-ACLs.

| Management Area | Current 2018 Sub-ACL (mt)* | 2018 Sub-ACL Recommended by NEFMC (mt) | Difference (mt) | % of Current 2018 Sub-ACL |
|-----------------|----------------------------|--|-----------------|---------------------------|
| Area 1A         | 32,084                     | 28,682                                 | -3,402          | 89.40%                    |
| Area 1B         | 3,552                      | 2,639                                  | -913            | 74.30%                    |
| Area 2          | 31,137                     | 8,200                                  | -22,937         | 26.34%                    |
| Area 3          | 43,763                     | 14,134                                 | -29,629         | 32.30%                    |

\*Corrected 2018 sub-ACLs were published on June 20, 2018 ([GARFO Bulletin](#))

If NOAA Fisheries adopts the recommendation of the NEFMC, the Commission will have different specifications in place for the 2018 Atlantic herring fishery than those in federal waters. This is because, in November 2015, the Atlantic Herring Section passed a motion to “*approve the 2016 to 2018 Atlantic herring specifications as recommended by the NEFMC*” at the time. As a result, if the Section would like to adopt the revised 2018 sub-ACLs proposed by the NEFMC, the Section must make a motion to reconsider the specifications set in 2015. This motion requires a two-thirds majority vote.

#### 2019-2021 Atlantic Herring Specifications

2019 marks the start of a new three-year specification package in the Atlantic herring fishery (January 1, 2019 – December 31, 2021). There are several on-going actions which will likely impact the specification process. First is the 2018 Stock Assessment which highlights that continued poor recruitment in the fishery could put the stock at risk of becoming overfished in the future. The second is the NEFMC’s Amendment 8, which could establish a long term control rule for specifying the acceptable biological catch (ABC) in the herring fishery. The 2019-2021 specification process is complicated by the timing of these on-going actions. Since final action on Amendment 8 is expected in September, the NEFMC will approve 2019-2021 specifications in December 2018. As a result, the 2019-2021 specification package will not be implemented by January 1, 2019 and an interim control rule will have to be used until it is finalized.

An Atlantic herring specification package includes the elements below. Table 2 outlines the Atlantic herring specifications established for 2016-2018.

- Overfishing Limit (OFL) – a catch amount that, if exceeded, would be expected to result in overfishing.
- Acceptable Biological Catch (ABC) – maximum catch recommended for harvest based on scientific uncertainty (e.g. uncertainty regarding stock structure and mixing); cannot exceed the OFL.
- Stock-wide Annual Catch Limit (ACL) – catch level selected that incorporates management uncertainty (e.g. Canadian catch deductions, discards); cannot exceed the ABC.
- Domestic Annual Harvest (DAH) – expected catch from US fishing vessels; it may equal, or be less than, the optimal yield.
- Domestic Annual Processing (DAP) - the amount that will be sold as fresh fish plus the amount of US harvest that domestic processors will use; DAP plus the BT equals the DAH

- Border Transfer (BT) – the amount of herring that can be taken in US waters and transshipped to Canada via Canadian vessels for human consumption; in 2016-2018 this was set at 4,000 mt.
- US At-Sea Processing (USAP) – domestic at-sea processing capacity by US vessels.
- Sub-ACLs (including seasonal splits of sub-ACLs) – area-based divisions of the ACL. The 2016-2018 specification of sub-ACLs maintained the percentages from 2013-2015 given the ABC was not substantially different and there was no biological need to consider modifying the distribution based upon results of the 2015 operational stock assessment.
- Research Set Aside (RSA) – percentage (0-3%) of a sub-ACL in any, or all, management areas that can be utilized for research purposes.
- Fixed Gear Set-Aside (FGSA) – portion of the Area 1A sub-ACL (up to 500 mt) set aside for fixed gear fisheries (weirs and stop seines) west of Cutler, ME. In the 2016-2018 specification package, the FGSA was set at 295 mt given it has been minimally used since 2012.
- River Herring/Shad Catch Caps (RH/S Catch Caps) – limits the amount of river herring and shad that can be caught within the Atlantic herring fishery for specific regions and gear types. The RH/S Catch Caps for 2016-2018 used a revised method from the 2014-2015 catch caps, extending the time series of data from five to seven years (2008-2014) and using a weighted mean instead of median values.

**Table 2:** 2016-2018 specifications in the Atlantic herring fishery.

|  |  |
|--|--|
| <b>OFL</b>   | <b>2016 – 138,000 mt<br/>2017 – 117,000 mt<br/>2018 – 111,000 mt</b> |
| <b>ABC</b>   | <b>111,000 mt</b>  |
| <b>ACL</b>   | <b>104,800 mt</b>  |
| <b>DAH</b>   | <b>104,800 mt</b>  |
| <b>DAP</b>   | <b>100,800 mt</b>  |
| <b>USAP</b>  | <b>0</b>   |
| <b>BT</b>  | <b>4,000 mt</b>  |
| <b>Area 1A Sub-ACL (28.9%)</b><br>0% January – May<br>100% June – December | <b>30,300 mt</b>   |
| <b>Area 1B Sub-ACL (4.3%)</b><br>0% January – April<br>100% May – December | <b>4,500 mt</b>  |
| <b>Area 2 Sub-ACL (27.8%)</b>  | <b>29,100 mt</b>   |
| <b>Area 3 Sub-ACL (39%)</b>  | <b>40,900 mt</b>   |
| <b>RSA</b>   | <b>3%</b>  |
| <b>FGSA</b>  | <b>295 mt</b>  |
| <b>RH/S Catch Caps</b>   |  |
| GOM midwater trawl   | <b>76.7 mt</b>   |
| CC midwater trawl  | <b>32.4 mt</b>   |
| SNE/MA midwater trawl  | <b>129.6 mt</b>  |
| SNE/MA bottom trawl  | <b>122.3 mt</b>  |

The NEFMC's Atlantic Herring Plan Development Team (PDT) and Scientific and Statistical Committee (SSC) are the primary groups charged with conducting analysis to develop alternatives and recommendations for the Atlantic herring specification package. These groups are scheduled to meet during the late summer and fall to undertake this work. As a result, now is an appropriate time for ASMFC's Herring Section to provide recommendations on potential analyses that should be considered during the specification process. This can include, but is not limited to, recommendations to analyze various splits of the ACL between management areas, seasonal splits of a sub-ACL, percentages allocated to the RSA, potential FGSA, and the methods used to calculate the RH/S Catch Caps. Below are some questions to prompt the Section's consideration and discussion on the 2019-2021 specification package.

- Does the Section recommend the NEFMC investigate a suite of alternatives which consider the division of ACL between management areas? If yes, are there specific factors (i.e. catch history, mixing of herring and mackerel) which those alternatives should consider?
- Does the Section recommend that the NEFMC consider any other alternatives to the seasonal split of Area 1A quota besides 100% allocated to June-December?
- Does the Section recommend that the NEFMC set aside quota for research in 2019-2021? If yes, does the Section recommend the RSA be maintained at 3% or should a range of options be considered? Does the expected reduction in 2019 ACL impact the range of RSAs that should be considered?
- Does the Section recommend Area 1A quota be set aside for fixed gear west of Cutler? If yes, does the Section recommend it be maintained at 295 mt or should a range of options be considered? Does the expected reduction in 2019 ACL impact the range of FGSA that should be considered?
- Given the ACL is expected to be reduced, should the NEFMC explore options to scale the RH/S Catch Caps to the level of quota?



## New England Fishery Management Council

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John F. Quinn, J.D., Ph.D., *Chairman* | Thomas A. Nies, *Executive Director*

June 21, 2018

Mr. Michael Pentony  
Regional Administrator  
NMFS/GARFO  
55 Great Republic Drive  
Gloucester, MA 01930

Dear Mike:

The New England Council met on June 12, 2018 and had a preliminary discussion of herring fishery specifications for 2019-2021. The Council also discussed the draft executive summary of the 2018 Atlantic herring benchmark assessment that was provided by the Northeast Fisheries Science Center (NEFSC). If approved, the preliminary assessment results suggest that large quota reductions may be needed in 2019 and beyond, primarily due to poor herring recruitment in recent years.

Future quotas may not need to decline as much if catches are below the 2018 Annual Catch Limit (ACL). In order to lessen the impact of future reductions, the Council recommends that you implement an action to make an in-season adjustment to the 2018 herring catch levels. The following motion was passed:

**Motion:**

*that upon the approval of the 2018 Atlantic Herring Stock Assessment peer review, or sooner if possible, the Regional Administrator, under existing authority allowing for in-season adjustments, take action to cap the 2018 harvest of Atlantic herring at the 2017 catch levels by management areas 1A, 1B and 3. The Area 2 sub-ACL should be set to 8,200 mt for 2018 sub ACL.*

*The motion **carried** on a show of hands (16/0/1).*

Under the Herring Fishery Management Plan, the Regional Administrator of NMFS was given the authority to make in-season adjustments after consultation with the Council. These adjustments can be made in order “to achieve conservation and management objectives.” The Council discussed that freezing the catch at 2017 levels would provide additional catch for the 2018 season and help mitigate reductions that are likely ahead for 2019 and beyond. Full harvest of the current 2018 quota (over 100,000 mt) would be more than double 2017 catches (under 50,000 mt). Furthermore, preliminary short-term projections in the draft executive summary suggest substantial gains can be made for 2019 allocations if harvest is reduced in 2018. Overall, maintaining 2017 catch levels of about 50,000 mt in 2018 should result in less reduction for 2019 quotas.

The 2018 fishing year started on January 1, 2018 and is about half way through the season; however, herring catch is typically highest in the summer and fall, so much of the annual quota is still available. As of June 15, 2018, under 10,000 mt have been harvested, or about 10% of the total annual catch limit.

The Council discussed that capping catch at 2017 levels could work in all herring management areas except Area 2. Areas 1A, 1B and 3 are still well below final 2017 levels, but Area 2 has already exceeded 2017 catch from that area, by about 3,000 mt. January-May 2018 catches for that area are just short of 7,000 mt, while 2017 Area 2 catches totaled less than 4,000 mt. As a result, freezing catch at 2017 levels is not possible for Area 2. Furthermore, the majority of catch in Area 2 in 2018 to date has been by vessels using midwater trawl gear targeting both herring and mackerel early in the season (January-March). Other herring vessels that fish in Area 2 with small mesh bottom trawl gear do not typically begin fishing in that area until later in the season, starting in late November through February. Since the start of 2018, about 10% of the total catch from Area 2 has been from vessels fishing with small mesh bottom trawl gear, about 700 mt to date. This segment of the fishery typically targets herring during last few weeks of the year around Thanksgiving.

The Council motion does not recommend that the Area 2 catch be capped at 2017 levels. The motion recommends adding about 1,000 mt to the current 2018 catch estimates from Area 2. This relatively small allocation for Area 2 is important to recognize the spatial and seasonal dynamics of this fishery and maintain some level of access to a segment of the fishery that has not yet operated in the area. This provides some Area 2 access to vessels that typically target herring later in the year and do not have the ability to fish in other areas farther from shore. It also accounts for small amounts of incidental catches that may continue during the remainder of the year. The Council does not believe one segment of the fishery should be completely closed out of the 2018 fishery in-season before other segments.

While the recommended reductions are not equal across all areas and segments of the fishery, the intent is to reflect 2017 fishing activity to the extent possible. Furthermore, some comments were made that since quotas have not been fully utilized in Area 3 farther offshore on Georges Bank that may be an indication that the current quotas are set too high and the area could benefit from reduced fishing pressure. It was discussed that while the reductions are uneven by area there are other protections in the other areas (i.e. Area 1A has spawning closures and Area 2 is closed to mid-water trawl fishing for the remainder of 2018 due to the river herring catch cap being harvested by mid-March). Therefore, due to the potential status of the herring resource, having substantial reductions on Georges Bank could be beneficial.

Another important component of the rationale for this in-season adjustment recommendation is timing. The specifications for 2019-2021 are not expected to be implemented until August 2019, well into the 2019 fishing year. In the herring fishery, if new specifications are not in place at the start of the year the current year specifications rollover. If the agency does not take action to reduce 2018 quotas and reductions for 2019 are significant based on the assessment results, then catches in early 2019 could exceed final allocations once the specifications action is effective. Annual quotas of about 50,000 mt would be a much better place to start the 2019 fishing year compared to over 100,000 mt, in light of anticipated reductions ahead that will potentially be even lower than 50,000 mt.

The attached tables were prepared after the meeting to illustrate the Council recommendation for in-season adjustments for fishing year 2018 quotas compared to recent fishing activity. This recommendation will provide more stability to the fishery by smoothing out quota reductions over 2018 and 2019 compared to allowing more fishing in 2018 followed by greater reductions in 2019. Also, this precautionary approach will benefit both the resource and fishermen. Please contact me if you have questions.

Sincerely,

A handwritten signature in cursive script that reads "Thomas A. Nies".

Thomas A. Nies  
Executive Director

cc: Robert Beal, ASMFC

**Attachment**

**Table 1 – Summary of herring quotas and catch for fishing year 2017, 2018 to date, and Council recommendation for in-season adjustment to 2018 quotas**

|              | 2017 Quota     | 2017 Catch*   | 2018 Quota**   | 2018 Catch*** | Council Recommendation for 2018 | Diff from 2018 sub-ACL | % of 2018 sub-ACL |
|--------------|----------------|---------------|----------------|---------------|---------------------------------|------------------------|-------------------|
| 1A           | 32,083         | 29,164        | 32,084         | 2,023         | 29,164                          | -2,920                 | 91%               |
| 1B           | 4,825          | 2,633         | 3,552          | 1             | 2,633                           | -919                   | 74%               |
| 2            | 31,227         | 3,663         | 31,137         | 6,674         | 8,200                           | -22,937                | 26%               |
| 3            | 43,873         | 14,053        | 43,763         | 1,178         | 14,053                          | -29,710                | 32%               |
| <b>Total</b> | <b>102,656</b> | <b>49,514</b> | <b>100,843</b> | <b>9,876</b>  | <b>54,051</b>                   | <b>-46,792</b>         | <b>54%</b>        |

\*2017 catch values are preliminary; final 2017 catches have not been finalized yet. These have been provided for illustration and may not be the same final values used if NMFS makes an in-season adjustment to 2018 quotas based on 2017 catches.

\*\* 2018 Quotas reflect the recent correction NMFS published on June 20, 2018, just after the Council meeting. These corrected values are relatively minor compared to 2018 sub-ACLs published in February (overall the ACL has reduced by about 100mt, some areas with small adjustments upwards and some areas with small reductions downwards). <https://content.govdelivery.com/accounts/USNOAAFISHERIES/bulletins/1f87fc3>

\*\*\*2018 catches are as of June 15, 2018

<https://www.greateratlantic.fisheries.noaa.gov/aps/monitoring/atlanticherring.html>)

**Table 2 – Summary of herring landings by gear, area, and quarter (2013-2017)**

| Gear         | Year | Quarter | Herring Area |    |       |     |
|--------------|------|---------|--------------|----|-------|-----|
|              |      |         | 1A           | 1B | 2     | 3   |
| Bottom Trawl | 2013 | 1       | 0            | 0  | 6,831 | 0   |
|              |      | 2       | 0            | 0  | 171   | 134 |
|              |      | 3       | 100          | 0  | 1     | 117 |
|              |      | 4       | 0            | 0  | 2,128 | 0   |
|              | 2014 | 1       | 0            | 0  | 3,533 | 0   |
|              |      | 2       | 0            | 0  | 87    | 0   |
|              |      | 3       | 91           | 0  | 0     | 0   |
|              |      | 4       | 0            | 0  | 2,132 | 0   |
|              | 2015 | 1       | 0            | 0  | 2,105 | 0   |
|              |      | 2       | 0            | 0  | 8     | 0   |
|              |      | 3       | 93           | 0  | 0     | 0   |
|              |      | 4       | 0            | 0  | 1,636 | 0   |
|              | 2016 | 1       | 0            | 0  | 1,251 | 0   |
|              |      | 2       | 0            | 0  | 11    | 0   |
|              |      | 3       | 85           | 0  | 0     | 0   |
|              |      | 4       | 24           | 0  | 2,367 | 0   |
|              | 2017 | 1       | 0            | 0  | 1,306 | 0   |
|              |      | 2       | 0            | 0  | 277   | 0   |
|              |      | 3       | 332          | 0  | 2     | 0   |
|              |      | 4       | 38           | 3  | 297   | 0   |

|                   |      |        |        |       |        |        |
|-------------------|------|--------|--------|-------|--------|--------|
| Midwater<br>Trawl | 2013 | 1      | 0      | 1,561 | 11,454 | 3,616  |
|                   |      | 2      | 0      | 0     | 602    | 7,404  |
|                   |      | 3      | 0      | 0     | 0      | 24,214 |
|                   |      | 4      | 6,070  | 0     | 5,082  | 1,790  |
|                   | 2014 | 1      | 0      | 1,270 | 6,548  | 10,666 |
|                   |      | 2      | 0      | 3,129 | 0      | 6,409  |
|                   |      | 3      | 0      | 0     | 0      | 19,246 |
|                   |      | 4      | 6,125  | 0     | 7,129  | 0      |
|                   | 2015 | 1      | 0      | 0     | 8,086  | 7,515  |
|                   |      | 2      | 0      | 2,790 | 816    | 9,859  |
|                   |      | 3      | 0      | 0     | 0      | 12,749 |
|                   |      | 4      | 6,503  | 0     | 2,373  | 3,063  |
|                   | 2016 | 1      | 0      | 0     | 8,178  | 0      |
|                   |      | 2      | 0      | 885   | 0      | 8,246  |
|                   |      | 3      | 0      | 0     | 0      | 4,672  |
|                   |      | 4      | 3,092  | 2,743 | 1,511  | 5,662  |
| 2017              | 1    | 0      | 0      | 1,578 | 2,967  |        |
|                   | 2    | 0      | 0      | 0     | 5,063  |        |
|                   | 3    | 0      | 0      | 0     | 4,240  |        |
|                   | 4    | 8,213  | 1,490  | 0     | 1,772  |        |
| Purse<br>Seine    | 2013 | 1      | 0      | 0     | 0      | 0      |
|                   |      | 2      | 3,256  | 0     | 0      | 0      |
|                   |      | 3      | 16,304 | 0     | 0      | 0      |
|                   |      | 4      | 3,511  | 0     | 0      | 0      |
|                   | 2014 | 1      | 0      | 0     | 0      | 0      |
|                   |      | 2      | 2,066  | 0     | 0      | 0      |
|                   |      | 3      | 20,815 | 0     | 0      | 0      |
|                   |      | 4      | 4,524  | 0     | 0      | 0      |
|                   | 2015 | 1      | 0      | 0     | 0      | 0      |
|                   |      | 2      | 2,596  | 0     | 0      | 0      |
|                   |      | 3      | 17,653 | 0     | 0      | 0      |
|                   |      | 4      | 2,694  | 0     | 0      | 0      |
|                   | 2016 | 1      | 0      | 0     | 0      | 0      |
|                   |      | 2      | 4,774  | 0     | 0      | 0      |
|                   |      | 3      | 16,033 | 0     | 0      | 0      |
|                   |      | 4      | 4,294  | 0     | 0      | 0      |
| 2017              | 1    | 0      | 0      | 0     | 0      |        |
|                   | 2    | 2,546  | 0      | 0     | 0      |        |
|                   | 3    | 15,430 | 0      | 0     | 0      |        |
|                   | 4    | 2,439  | 0      | 0     | 0      |        |

*Source: Herring year end reports (2017 landings are preliminary)*

*Landings only, does not include discards and state only permit landings, also excludes RSA landings.*



**Table 3 – Summary of 2013-2017 herring landings for small mesh bottom trawl vessels only with average landings per quarter as percent of total.**

| Gear         | Year                 | Quarter | Herring Area       |                      |          |          |              | % per quarter |
|--------------|----------------------|---------|--------------------|----------------------|----------|----------|--------------|---------------|
|              |                      |         | 1A                 | 1B                   | 2        | 3        |              |               |
| Bottom Trawl | 2013                 | 1       | 0                  | 0                    | 6,831    | 0        |              | 74.8%         |
|              |                      | 2       | 0                  | 0                    | 171      | 134      |              | 1.9%          |
|              |                      | 3       | 100                | 0                    | 1        | 117      |              | 0.0%          |
|              |                      | 4       | 0                  | 0                    | 2,128    | 0        | 9,483        | 23.3%         |
|              | 2014                 | 1       | 0                  | 0                    | 3,533    | 0        |              | 61.4%         |
|              |                      | 2       | 0                  | 0                    | 87       | 0        |              | 1.5%          |
|              |                      | 3       | 91                 | 0                    | 0        | 0        |              | 0.0%          |
|              |                      | 4       | 0                  | 0                    | 2,132    | 0        | 5,843        | 37.1%         |
|              | 2015                 | 1       | 0                  | 0                    | 2,105    | 0        |              | 56.1%         |
|              |                      | 2       | 0                  | 0                    | 8        | 0        |              | 0.2%          |
|              |                      | 3       | 93                 | 0                    | 0        | 0        |              | 0.0%          |
|              |                      | 4       | 0                  | 0                    | 1,636    | 0        | 3,843        | 43.6%         |
|              | 2016                 | 1       | 0                  | 0                    | 1,251    | 0        |              | 34.5%         |
|              |                      | 2       | 0                  | 0                    | 11       | 0        |              | 0.3%          |
|              |                      | 3       | 85                 | 0                    | 0        | 0        |              | 0.0%          |
|              |                      | 4       | 24                 | 0                    | 2,367    | 0        | 3,738        | 65.2%         |
|              | 2017                 | 1       | 0                  | 0                    | 1,306    | 0        |              | 69.4%         |
|              |                      | 2       | 0                  | 0                    | 277      | 0        |              | 14.7%         |
|              |                      | 3       | 332                | 0                    | 2        | 0        |              | 0.1%          |
|              |                      | 4       | 38                 | 3                    | 297      | 0        | 2,255        | 15.8%         |
|              |                      |         | <b>1A</b>          | <b>1B</b>            | <b>2</b> | <b>3</b> | <b>Total</b> |               |
|              | All Years            |         | 763                | 3                    | 24,144   | 251      | 25,161       | Avg per year  |
|              |                      |         | 3.0%               | 0.0%                 | 96.0%    | 1.0%     | 100.0%       | 5,032         |
|              |                      |         | <b>Area 2 only</b> | <b>% per quarter</b> |          |          |              |               |
|              | Total<br>(2013-2017) | 1       | 15,026             | 62.2%                |          |          |              |               |
|              |                      | 2       | 554                | 2.3%                 |          |          |              |               |
|              |                      | 3       | 3                  | 0.0%                 |          |          |              |               |
|              |                      | 4       | 8,561              | 35.5%                |          |          |              |               |

*Source: Herring year end reports (2017 landings are preliminary)  
Landings only, does not include discards and state only permit landings, also excludes RSA landings.*