

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

**The Westin Crystal City
Arlington, Virginia
February 6, 2018**

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2. **Motion to approve proceedings of October, 2016** by Consent (Page 1).
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ATTENDANCE

Section Members

Pat Keliher, ME (AA)	Eric Reid, RI, proxy for Sen. Sosnowski (LA)
Steve Train, ME (GA)	Bob Ballou, RI, proxy for J. Coit (AA)
Sen. Brian Langley, ME (LA)	David Borden, RI (GA)
Doug Grout, NH (AA)	Colleen Giannini, CT proxy for M. Alexander (AA)
G. Ritchie White, NH (GA)	Emerson Hasbrouck, NY (GA)
Dennis Abbott, NH, proxy for Sen. Watters (LA)	Adam Nowalsky, NJ, proxy for Asm. Andrzejczak (LA)
Rep. Sarah Peake, MA (LA)	Jeff Brust, NJ, proxy for L. Herrighty (AA)
David Pierce, MA (AA)	
Raymond Kane, MA (GA)	

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

Ex-Officio Members

Rene Zobel, Technical Committee Chair

Staff

Robert Beal	Megan Ware
Toni Kerns	Jessica Kuesel

Guests

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, February 6, 2018, and was called to order at 1:30 o'clock p.m. by Chairman Robert E. Beal.

CALL TO ORDER

CHAIRMAN ROBERT E. BEAL: I would like to call the Atlantic Herring Section to order. We've got a relatively small group today; but the rest of the Commissioners will join us in a moment. My name is Bob Beal; I am the Executive Director of ASMFC. Currently the Herring Section does not have a Chair or a Vice-Chair; due to retirements and health issues and a number of other things.

I am standing in as the acting Chair of the Herring Section until we get to Agenda Item Number 4, which is elect a Chair and a Vice-Chair, and then after that point the newly elected Chair will come up and take over the meeting at that point. That is where we are.

APPROVAL OF AGENDA

CHAIRMAN BEAL: An agenda was distributed in the briefing materials. Are there any changes or additions to the agenda as presented? Seeing none; the agenda stands approved.

APPROVAL OF PROCEEDINGS

CHAIRMAN BEAL: Are there any changes or adjustments to the proceedings from the October, 2017 meeting of the Herring Section? Seeing none; those stand approved as well.

PUBLIC COMMENT

CHAIRMAN BEAL: Agenda Item Number 3 is public comment. Is there any public comment on any items that are not on the agenda for the Atlantic Herring Section?

ELECTION OF CHAIR AND VICE-CHAIR

Seeing no hands; we'll go on to Agenda Item Number 4, which is the election of a Chair and Vice-Chair of the Atlantic Herring Section. Are there any nominations for Chair and Vice-Chair? Ritchie White.

MR. G. RITCHIE WHITE: I have the great honor of nominating two distinguished candidates; Pat Keliher for Chair and David Pierce for Vice-Chair.

CHAIRMAN BEAL: Wonderful, is there a second to those nominations? Bob Ballou seconds the nomination of Pat Keliher for Chair and David Pierce for Vice-Chair of the Atlantic Herring Section. Are there any other nominations? Seeing none; any objections to the nominations, none? Congratulations Pat Keliher and David Pierce. This is all yours now, Pat.

CHAIRMAN PATRICK C. KELIHER: At least he didn't say one of the two is distinguished. I'm going to try to get us back on task and on time. A couple things, I know Dennis Abbott will talk a lot about process. But we don't go by Robert's Rules; we go by Pat's Rules associated with running the Herring Section.

We'll dispense Robert's Rules and we'll see if we can't move this right along. Perfect.

REVIEW EFFECTIVENESS OF CURRENT SPAWNING CLOSURE PROCEDURES

CHAIRMAN KELIHER: With that we will go to Item Number 5, **Review Effectiveness of Current Spawning Closure Procedures**. Renee, are you ready for that?

MS. RENEE ZOBEL: I am, thank you Mr. Chair. The TC was tasked with reviewing the spawning closure program that was initiated in 2016; our forecast TSI-30 based program. As a reminder, our task was to review the efficacy of the current spawning closure method; which is the forecasting method based on the goals and objectives of the program, and make suggestions

for any improvements to better meet those objectives.

First up, what were the objectives of this program; or what are the objectives? The first is to reduce the interaction between the fishery and spawning. We know that it is impractical to eliminate interaction completely between spawning and the fishery; but that we should prohibit fishing when greater than 25 percent of fish are spawning.

Now that 25 percent is an important value to look at; we on the flip side, when there is a spawning closure. In order to reclose or not reclose there is a 25 percent threshold that we follow. The TC took a logical leap to assume that that threshold was appropriate on the front side of a spawning closure as well.

When you hear me refer to a spawning season; we're going to be looking at the 25 to 25 percent on the front and on the backside. The second objective is to maximize spawning coverage and access to the 1A quota. In a perfect world spawning closures cover the spawning season and no more. We know it's an imperfect world; but that's the goal.

Third is to account for interannual variation in spawning season. We do know that there is – and you're going to see this later – there is pretty solid interannual variation in our spawning seasons in this species. We do this by monitoring the development of the ovaries, getting GSI values each year before, during, and after the spawning closure.

Fourth objective is flexibility to extend the closure if necessary; because we do not want to be opening up on more than 25 percent spawning fish. A little bit of a review of the data, so 2015 prior to that we did not sample the full suite of spawning, so prior to 2015 the focus was on collecting samples pre-spawning.

Doing the pre-spawning GSI, not worried as much about during the spawning season or after;

other than to determine if we needed a reclosure or not. In 2015, there was a concerted effort to start taking samples before, during, and after the spawning closure, which allows us to get a good feel of what the spawning season looks like and what the biology of the fish is throughout the entire timeframe.

Now 2015 we still were under the old program. It wasn't until 2016 and then this previous year, 2017 that we used the new method. Now what we're really evaluating are some assumptions of this program; and there are four that we really took a look at as a TC. The first assumption of the program was that larger herring arrive and spawn earlier than smaller herring.

Second was spawning commences near GSI-30 value of 25, which is the value that the Section picked when we implemented this; that four weeks sufficiently covers the spawning season, and finally that GSI increases linearly during the last two months of spawning, which was part of what went into the modeling. The first question; do larger herring arrive earlier? In the figure you'll see up on the screen. You can see that the large fish are the lighter color; small fish are the darker color. Over the years you can see that in fact the larger fish are replaced with smaller fish as we go through the spawning season. This is another way to look at it. The mean length of Stage 3 through 5 female herring and you can see even more clearly here that the length of fish declines over the course of time. They do in fact decrease in size throughout the spawning season; so that assumption we found to be sound.

Second question; does spawning commence near the GSI-30 value of 25; which is the value that was chosen by the Section? To get at the answer to that we have to determine when is the spawning season? This is a very busy figure; but what you really want to be paying attention to is the orange line and the red line. Those two lines are really the fish that are in spawning stages; and the black lines (black vertical bars) are the actual spawning closures.

You can see that we're doing a pretty good job capturing the spawning fish during those closure dates. Another way to look at this is this is the observed fraction of sampled herring that had started spawning; which is the red line. Those are Stage 6 plus fish; and those in purple are those that had completed spawning, with fitted logistic regression lines.

Shaded in blue is what the spawning season was determined to be via sampling. Again, the black vertical bars are the actual spawning closures. We're going to talk a little bit about these three different years individually. One thing to note is that 2016, and I'll bring this up again, very few samples during and after the spawning closure. There was only one.

What you see there is a very short spawning season of 16 days. We don't have a whole lot of faith in that; because we don't have enough samples to really feel confident about that value, so just a side note for everybody. The other thing to observe in this figure, those 25 percent values that I talked about earlier, so where more than 25 percent of fish are spawning and then where less than 25 percent of fish have remained to spawn after the closure.

There are two circles; one at the beginning of the spawning season, and one at the end of the spawning season. That is what those are referencing. Our goal is to try and basically look at the spawning season between those two values; that is our end goal. This is 2015 under the old method and what it looked like.

Again, you can see shaded in blue is the actual spawning season; based on the biology of the fish. The vertical bars are again what we implemented for a spawning closure. This season was two weeks early; as far as we missed the spawning fish by two weeks, which is indicative of us opening up smack in the middle of spawning and having to implement a reclosure.

Had we used the new method in 2015, this is what it would have looked like. Instead of two weeks early we would have been three days late from that 25 percent spawning threshold; so much more precise. In 2016 again, it appears we had a very short spawning season. But this is the year where we have very, very few samples; just one sample during the spawning closure and one sample after. Good samples leading up to it, but not during and after to help us categorize what the spawning season looks like.

This year it would have been five days late. It really would have been four days late, but managers decided to push this out one additional day from what the model predicted. In 2017, our most recent year, this is our most comprehensive year with 29 samples taken during this year. This year actually did a very nice job. It was two days early from that 25 percent spawning threshold; and you can see that we did have to have a reclosure, because this spawning season was about five weeks. You can already see here the variability in the length of the spawning season; based on the biology of the fish in any given year. Third assumption, is a four week closure sufficient?

I already showed you that there was some variability between the different years; based on the length of the spawning season, which we already knew going into this, but it was again confirmed for us. Here what we're looking at is if managers were not comfortable with those 25 percent values, which has been on the books for us for a long time post spawning closure and we have now introduced it as a beginning period for spawning closure.

Then managers could elect to do something different with those percentages. However, the thing to keep in mind is that a percentage change would extend time both on the front end and the back end of a spawning closure. If the choice was to be more conservative than the 25 percent that's currently on the books, we could do that.

But there would be a tradeoff in the amount of time that the spawning closure would cover; and likely a four week closure would result very frequently in a reclosure. What we're looking at here is that if managers also decided they could go with a different GSI-30 value. For the 2016 initiation we went with a GSI value of 25; which as I showed you earlier fit the spawning season very well, with just a matter of being off by two to four days versus a matter of weeks, which it was off before we implemented the new method.

Here you can see what would happen if we chose a different GSI-30 value; and obviously the lower the value the further up in time it would bump that up. If the Section did decide to go with a lower value, it would likely result in reclosures more frequently, unless a longer timeframe for a spawning closure was also adopted.

Based on what I just said, so those different GSI-30 values as you dropped the timeframe would get earlier and earlier for the spawning closure, and would also have to come with different default dates. The default dates that were selected prior were based on a GSI-30 value of 25. If we went with a different value then we would also have to implement a different default closure date.

One thing you'll notice here is that the default closure for a value of 25 is October 1, and not October 4, which is currently on the books for all of us. We have more data now. We were able to go back and take a look with updated data at what the default date would be; including the last three years, and that has changed the value some.

The value for the 25 threshold is now October 1st instead of October 4th. The last assumption does GSI increase linearly during the last two months prior to spawning? These are the three years. The line that you want to pay most attention to is the blue line; that is the fit of the samples. You can see in all years there is an increase in the slope of that line headed up to

the spawning closure, which is indicated with the red vertical bar.

The notification date is what is indicated by N, and the black on the figure is the closure date as it changed over the number of samples that we were able to work up and implement. The last year is the only one that differs a little bit; and the slope decreases right after the notification date. But headed up to that notification date, it follows a nice linear path. Conclusions and recommendations, the first conclusion is the current spawning closure model appears to be meeting the Sections objectives. The second conclusion, which I think you were able to see is that the spawning season is variable both in time and length of time.

In 2015 there was approximately a 28 day spawning season, 2016 had a 16 day spawning season, again very low sample sizes so low confidence in that number, 2017 had a 34 day spawning season, so a lot of variability between years. Two week reclosures may occur frequently as a result of this; with just a four week spawning closure initially.

A five or six week closure could reduce the frequency of reclosures. The current GSI-30 threshold of 25 is a good fit to the spawning season. It's within days not weeks, which the old system tended to be off by a number of weeks when we've gone back and taken a look at old data. The Section could consider a threshold of 23 or 24 to reduce the probability of greater than 25 percent spawning fish in each catch; that would result in an earlier default date.

It would also increase the likelihood of reclosure if the four week spawning sample closure is retained; and a longer closure is not implemented. Fishery independent sampling is needed during closures. We have a very hard time getting samples in eastern Maine in particular, but as far as samples during a spawning closure, which help us categorize what the spawning season looks like and what the biology of the fish are doing in any given year.

Those two areas are in particular need of independent sampling. We were able to get quite a bit of sampling in the Mass/New Hampshire closure area during the closure. A lot of those samples came from the small mesh bottom trawl fishery that was operating during that timeframe; in addition to some other sources. That concludes my presentation; I'm happy to take any questions, if anybody has any.

CHAIRMAN KELIHER: Great, thank you Renee. I have Ritchie and then Doug.

MR. WHITE: Great report, Renee, thank you. Two questions, one I assume that any of these changes that we could make would be an addendum process.

CHAIRMAN KELIHER: It's my understanding that an addendum would be appropriate; but we could also if we wanted to make a change and evaluate it, we could also do it as a pilot.

MR. WHITE: Second question, did the Technical Committee talk about the herring accessibility to the fleet this year; in that I know there were market situations that affected it as well, with the Area 3 quota not being caught, and the Area 1A quota constrained early, and then had an extremely hard time trying to catch the remainder of the quota.

Some of the anecdotal information was that the herring were not available to the harvesters when they wanted them; or they were staying hard to the bottom for the seine boats. I just wondered if the Technical Committee had any discussions on that.

MS. ZOBEL: Due to workload and the timeline of taking a look at the tasks which we were presented, which was taking a look at the spawning closure efficacy; that is not something we discussed as of right now. However, the Council Herring Workgroup is going on today and the rest of this week. I'm sure that is something that the TC members who are all involved there will be discussing as a result of that as well.

CHAIRMAN KELIHER: I've got Doug Grout, anybody else on this side, Colleen and David Pierce? Doug.

MR. DOUGLAS E. GROUT: Thank you Renee for this report. I have three questions; one is just a clarification. In your previous slide you said in 2015 the closure was 28 days. Does that include what it would have been under the new method? Do you have an idea of how many days it would have been in 2015 under the new method?

MS. ZOBEL: That is not the spawning closure that was implemented that is a spawning season. Based on the biology of the fish, between that 25 percent on the front end and 25 percent on the back end, it was 28 days long.

MR. GROUT: Thank you for clarifying that for me. Do you have in 2016 when we had low sample size, compared to the year before and the year after. Was there any reason why we had such low sample size, or why their sample sizes were higher in the '15 and '17?

MS. ZOBEL: Often during the spawning closure the samples are coming from either the small mesh bottom trawl fleet or independent means; fishery independent. That year I recall us really having trouble finding fish to sample during the closure.

MR. GROUT: We are getting samples from the fisheries independent surveys too now.

MS. ZOBEL: We are that is correct.

CHAIRMAN KELIHER: Colleen.

MS. COLLEEN GIANINI: Thanks, Renee. Since the sample sizes are so influential in informing the closures dates, was there any thoughts or discussion in the TC as to identifying maybe a minimum or optimal sample size?

MS. ZOBEL: There was no discussion about that specifically. Based on when we developed the

model we set three samples as a minimum; as far as fitting that linear regression to allow us to predict a closure. Obviously more samples are better than fewer samples. We've really been trying to categorize the fishery, so like I said this last year was 29 samples. We really tried to capture as much as we possibly could. But no, we did not talk about an optimal sample size.

CHAIRMAN KELIHER: Colleen brings up a good point in regards to sample size; and one that I've had very quick discussions with both David Pierce and Doug Grout about; in regard to the hundred fish that are collected. Occasionally we fall short; so I would like to discuss that after we deal with all the questions regarding the report, of some way to possibly scale that sample size and maybe tasking the TC. But we'll save that portion for the end of this discussion. David.

DR. DAVID PIERCE: Yes Renee, much appreciation is expressed to you and your colleagues, Micah Dean and Matt Cieri for all the hard work you did; impressive display of the data in graphical figure form. A great deal of thought went into this to evaluate the merits of the changes that we made in the spawning closure approach. I'm glad to see that the changes have proven to be good ones, and that we've had some success. I believe you said that the approach resulted in pretty good capturing of the spawning season. My question is, just so I understand.

In looking at the data that you have provided, Figures 8 and Figure 9 and the different sizes or length of the spawning seasons. You may have already alluded to this. But by spawning season you mean the actual time that we implement it to protect spawning fish; or do you mean the actual time when the fish were seen to have been spawning?

MS. ZOBEL: The latter. You can see in all those figures the spawning closure is indicated by vertical black bars. The spawning season is based on the biology of the fish and the length of

time between 25 percent on the front end and 25 percent on the back end of fish spawns.

DR. PIERCE: Thanks for that clarification. Do you or other members of the Technical Committee have any insight, any thoughts as to why the spawning season was so long in 2017; in contrast to previous years, water temperature effects? What can you offer if anything?

MS. ZOBEL: We know based on literature that the spawning season can be very variable. We're seeing that played out. There are a number of factors that contribute to it. Why 2017 was longer than 2015, the last year of confidence, we didn't entirely discuss, and it would only be conjecture. But there are a number of factors that go into it; and we know that based on literature the spawning season often can go up to 40 days or more.

CHAIRMAN KELIHER: Are there any other questions or comments for Renee regarding this? Is there any interest from the Section in seeing a modification to the procedures that we have in place? Ritchie White.

MR. WHITE: I'm not quite sure I'm ready to make a motion to that regard; but the concerns that I raised earlier that we heard from fishermen that there just were not the herring this last year that should be there. Does that mean that they're geographically elsewhere? We don't know. It's not a stock assessment. But we had a lot of very experienced fishermen raising substantial concern about the availability of herring last year.

I think that if menhaden had not been available in Maine, I think there would have been a serious bait crisis in the lobster industry. Should we be taking a more conservative approach; to make sure we're capturing just as much spawning as we possibly can? That is the direction I would lean; but I guess I would like to hear more input, if there are others that feel the concern that I've expressed.

CHAIRMAN KELIHER: Are there any thoughts on Ritchie's comments? David.

DR. PIERCE: Yes Ritchie, I've heard some of those similar remarks from the fishing industry regarding a difficulty in getting herring catch. At the same time I've also heard the fishermen just decided to fish on mackerel as opposed to herring; because the price was far better, so as a consequence there wasn't as much hunting for the herring and therefore it appeared that there were less herring. What the answer is I don't know. But nevertheless we have heard those concerns expressed.

I guess I'm influenced more so by the objectives that we've established for ourselves. I think Megan went over those, Renee or Megan, I forget who gave us those objectives. But one of the objectives was to maximize spawning coverage and access to the Area 1A quota. While I might be tempted to extend the spawning season, at the same time I've got to reflect on that objective.

So far it seems as if we're achieving that objective. Now with that said, we have a sea herring assessment scheduled for this spring. I think it's for this spring. I'm anxious to see what the assessment scientists have got for us relative to an update. Is it a benchmark or an update? If I may, it's benchmark? All right so this is a big deal.

This is a benchmark assessment. Therefore, we should know in the not too distant future the status of the stock; and if we get some real negative news, it might prompt us to do something different for this year. I think we would still have time to do something for this year. I'm not quite clear on the timing, but nevertheless we should have some insights.

At this point in time I don't support making a change. But I do support being very attentive to all the early work that goes into the benchmark assessment; because we're all privy to it one way or another, our staff is involved in it. Once we get that insight that may be early in the game,

we can then decide what the best next step is for us; specific to reducing fishing mortality and increasing the protection for spawning herring.

CHAIRMAN KELIHER: Are there any additional comments in regards to Ritchie's original? Ray.

MR. RAYMOND W. KANE: Renee, you said that the spawning season can last up to 40 days?

MS. ZOBEL: Based on literature, yes. That is what we presented when we initially presented this model as well.

MR. KANE: That would be a six week spawning closure if we wanted to truly protect the spawning stock biomass.

MS. ZOBEL: On the far end, yes. As you can see, this year it was a 34 day spawning season, and after four weeks we now can reclose before opening, so that is what happened this year. Samples indicated spawning was ongoing so reclosure occurred. Yes effectively this year and many years it ends up being a six week closure.

MR. KANE: Just a comment. Ritchie, at the next meeting if you want to put a motion up I'll definitely support you.

CHAIRMAN KELIHER: Doug.

MR. GROUT: When we first adopted the addendum that put this process in place, one of the options was a six week spawning closure. The Section at that time agreed with a four week, as long as we had essentially an enhanced process for reclosing. I think the benefit of the four week versus six week is really for the industry; and being able to plan, although there is a drawback where you could potentially like in 2016, when you had a short spawning season, you could potentially close it longer than you had to. I think the real advantage, if we're going to move forward with this, might be coming forward with a more conservative GSI percentage that we're going to work with. Move it down to 25 or 24 or maybe even lower;

because then you might catch the early spawners more readily, if I am reading that correctly. That is sort of a question for Renee. Is that the way I'm reading it?

MS. ZOBEL: Yes you would catch earlier spawning fish. But if you maintained a four week closure, you would also likely be opening up on spawning fish, and have to reclose more frequently. That is the risk.

CHAIRMAN KELIHER: Are there any additional questions or comments? Seeing none; a potential Band-Aid that may be beneficial for this from a process standpoint is when we actually have samples that do not equal 100 or more fish in the individual sample. We had some instances where the industry was screaming, particularly at me, because of the fishery happening in eastern Maine when the samples were less than 100 fish.

At the time we had issues of collecting the samples, but also some damaged samples that for dissection purposes were not valid. I've talked to staff a little bit about this. One way to rectify this is to find a way for us to basically scale up; so if we had a sample of 90 or 91 fish that the TC could find a way to statistically scale up that sample so we could accept it, avoiding two or three or four days to collect another sample to be able to go through the process of closing.

One thought I had would be to task the TC to come up and develop that type of a system of scaling up, and bring it back to the Section at the May meeting, for us to utilize that for this upcoming fishing season. I would like some thoughts or comments on that. Doug.

MR. GROUT: I would support that concept, but I think we have with the TCs advice. You would almost have to have the 100 fish now as a target. But we would still have to have some kind of a minimum threshold for a sample. You would have to give confidence to the industry and to us.

CHAIRMAN KELIHER: Yes. I think from internal conversations with state staff, we still wouldn't want to go less than 90. The goal is always 100 fish or 100 fish sampled. But there have been times. The last closure we did for Mass/New Hampshire, I believe ended up being 95 or 96 fish that we all determined that we would accept for the closure.

I think just formalizing that making sure that we're getting that good advice from the Technical Committee, and then accepting it as a Section, as we deal with days out and dealing with the spawning closures would be appropriate. I see some heads nodding; so with that I think we can task the TC to look at that issue of scaling up.

We don't need a motion from that and they can kind of add it to their growing workload with the assessment coming up. With that thank you. That concludes conversations around spawning closures.

ADJOURNMENT

Is there any other business that needs to be brought before the Section? Seeing none; I would accept a motion to adjourn, motion to adjourn by Dennis Abbott, seconded by Ray. I think we have consensus, thank you very much that concludes the business of the Section.

(Whereupon the meeting adjourned at 2:00 o'clock p.m. on February 6, 2018)