

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

**Crowne Plaza Hotel - Old Town  
Alexandria, Virginia  
August 7, 2012**

**Approved October 22, 2012**

## TABLE OF CONTENTS

<b>Call to Order, Chairman David Pierce .....</b>	<b>1</b>
<b>Approval of Agenda .....</b>	<b>1</b>
<b>Approval of Proceedings, April 30, 2012 .....</b>	<b>1</b>
<b>Public Comment.....</b>	<b>1</b>
<b>Draft Addendum Number V for Final Approval.....</b>	<b>1</b>
<b>Review of the New England Fishery Management Council Amendment 5.....</b>	<b>6</b>
<b>Atlantic Herring Saw 54 Benchmark Assessment .....</b>	<b>8</b>
<b>Other Business.....</b>	<b>16</b>
<b>Adjournment .....</b>	<b>17</b>

## INDEX OF MOTIONS

1. **Motion to approve agenda** by Consent (Page 1).
2. **Motion to approve proceedings of April 30, 2012** by Consent (Page 1).
3. **Move to adopt Option A for 3.1.2, spawning area boundaries; Option C for 3.2.2, size bins that trigger a spawning closure start; and Option B for 3.3.2, number of fish per sample (Page 6).** Motion by Pat Augustine; second by Peter Himchak. Motion carried (Page 6).
4. **Move to approve Addendum V to the ISFMP for Atlantic Herring with options selected (Page 6).** Motion by Bill Adler; second by Pat Augustine. Motion carried (Page 6).
5. **Motion to adjourn** by Consent (Page 20).

## ATTENDANCE

### Board Members

Terry Stockwell, ME, proxy for P. Keliher (AA)  
Steven Train, ME (GA)  
Doug Grout, NH (AA)  
G. Ritchie White, NH (GA)  
Rep. David Watters, NH (LA)  
Rep. Sarah Peake MA (LA)  
William Adler, MA (GA)  
David Pierce, MA, proxy for P. Diodati (AA)  
Bob Ballou, RI (AA)  
Bill McElroy, RI (GA)

Rick Bellavance, RI, proxy for Rep. Martin (LA)  
Dave Simpson, CT (AA)  
Lance Stewart, CT (GA)  
Pat Augustine, NY (GA)  
James Gilmore, NY (AA)  
Brian Culhane, NY, proxy for Sen. Johnson (LA)  
Peter Himchak, NJ, proxy for D. Chanda (AA)  
Tom Fote, NJ (GA)  
Adam Nowalsky, NJ, proxy for Asm. Albano (LA)

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

### Ex-Officio Members

Matt Cieri, Technical Committee Chair  
Joe Fessenden, Law Enforcement Representative

Jeff Kaelin, Advisory Panel Chair

Robert Beal  
Toni Kerns

Mike Waine  
Jeff Kipp

### Guests

Mike Johnson, NC  
Wilson Laney, USFWS  
Lindsey Fullencamp, NOAA  
Jud Crawford, Pew Charitable Trusts  
Adam Davis, Chesapeake Research Consortium

Charles Lynch, NOAA  
Raymond Kane, CHOIR  
Patrick Paquette, MSBA/RFA  
Janice Plante, Commercial Fisheries News

The Atlantic Herring Section of the Atlantic States Marine Fisheries Commission convened in the Presidential Ballroom of the Crowne Plaza Hotel, Alexandria, Virginia, August 7, 2012, and was called to order at 8:30 o'clock a.m. by Chairman David Pierce.

### **CALL TO ORDER**

CHAIRMAN DAVID PIERCE: If everyone would please take your seats, we'll begin our meeting.

### **APPROVAL OF AGENDA**

CHAIRMAN PIERCE: All right, you have the agenda before. The agenda today focuses on Draft Addendum V; final approval for Draft Addendum V. We will be hearing public comment on that, technical committee report, advisors, law enforcement.

That will be followed by Amendment 5 Selected Measures, specifically a review of those measures adopted by the New England Council. We're all aware of those measures now and we will find out what exactly was selected. Then we will conclude with a review of the benchmark assessment for Atlantic sea herring, an assessment that we have waiting for, and, of course, Matt Cieri has been very involved in that and he will be presenting that report as well as peer review panel report. The draft agenda is before you. Are there any changes to the agenda? Sarah.

REPRESENTATIVE SARAH K. PEAKE: Mr. Chairman, I'm not sure where the appropriate place to bring this up is, but I would like to bring up a gentle reminder. I went back through the approved minutes of our winter meeting in February; and as you may recall, Terry Stockwell and I had a little back and forth with a motion regarding the spawning stock on Nantucket Shoals.

The conversation is recorded on Pages 16 through 18 of the February meeting minutes. Where we ended up on that was with Vince O'Shea making the suggestion, quote, "that we pull together a white paper of sorts scoping out what the issues would be involved with this; much less labor-intensive than the addendum. I think a reasonable time may not be in May but maybe for the August meeting."

I've looked in the materials and I didn't see a white paper like that. I suspect it may not have been pulled together. This is just a friendly reminder that we did have that representation. I don't intend to make any further motions regarding the Nantucket Shoals

spawning stock or anything today, but I do want to keep that on our radar screen. Thank you.

CHAIRMAN PIERCE: All right, thank you, Sarah, that is a good reminder, and I suspect we will get back to that issue under other business just to get a staff update as to where we are with that and what the next steps should be regarding that white paper. Thank you for that reminder. Are there any suggested changes to the draft agenda? If not, we will consider the agenda approved, and we will follow it for the two hours we have devoted to Section business this morning.

### **APPROVAL OF PROCEEDINGS**

CHAIRMAN PIERCE: Next is approval of proceedings from our April 30 meeting. I assume everyone has had a chance to take a look at them. Do I have a motion to approve or suggestions for changes to those minutes if indeed a change is required? Bill Adler.

MR. WILLIAM A. ADLER: I make a motion to approve them.

CHAIRMAN PIERCE: Okay, Bill Adler has made a motion to approve; second by Pat Augustine. All right, motion to approve; with no objection we will consider the proceedings approved.

### **PUBLIC COMMENT**

CHAIRMAN PIERCE: All right, public comment; as always we provide an opportunity for the public to comment on any issues that are not going to be dealt with through the agenda itself, through our business..

Is there anyone in the public who would care to comment on any other issues that are specific to sea herring? I see no interest in commenting at this time.

### **DRAFT ADDENDUM NUMBER V FOR FINAL APPROVAL**

CHAIRMAN PIERCE: Therefore, we will go on to Agenda Item Number 4, which is Draft Addendum Number V. Once again, it is here for final approval. We're going to review the options and that will occur – well, actually, Toni, are you going to review the options?

MS. TONI KERNS: I'm going to review the options and while I review the options, I'm going to remind the board of which options the technical committee had recommended and then give the overview of the

public comment and then Jeff Kaelin has an AP Report and Joe Fessenden has the LEC Report.

CHAIRMAN PIERCE: All right, if you then review the options for us and that will be followed by public comment summary.

MS. KERNS: As a reminder to the Section, Addendum V addressed spawning regulations. The reason why this document was put forward is that the current regulations for spawning were scattered in three different documents, and there was a lack of clear guidance to the states on some of those regulations.

There were some slight inconsistencies amongst the states in their state regulations as a result of this. Up to this point it has worked out due to cooperation between the state fishery agencies but that would not always be guaranteed in the future. What we're looking to do here is to replace all of the spawning regulations that were listed in the three different FMP documents.

The procedure that we would go forward with in approving this document is the Section will take a vote on the final measures that are contained in Addendum V. Then the staff and the technical committee chair will draft spawning regulations and carryover language that were included in the selected options today as well as all of the other spawning regulations from the different documents.

The full technical committee will review those draft regulations, we'll come back to the Section and have them review that language and then approve that full spawning regulation language and then we will publish Addendum V. This is a two-part process that we're going to go through, as a reminder. The first options that we're considering are looking at how the spawning area boundaries are modified. They can either, Option A, be modified through an addendum like we currently have in our regulations, so this is status quo.

Option B is to have the boundaries be changed through Section action but this would have to be based on technical committee advice. The technical committee recommends this Option B. The second issue in the addendum is looking at size bins that trigger a spawning closure start. Closures begin based on a percentage of the Stage 3 through 5 spawning herring that are greater than 24 centimeters, and that's our current regulation.

The technical committee considers this to be a type and it should say spawning herring that are equal or greater than some number value. The technical committee looked at the size of the spawning herring and found from recent samples that herring are maturing at a smaller size, especially in the 23 to 24 centimeter size bin.

We're proposing to change the language to say Option A, which is status quo, just greater than 24 centimeters. Option B is greater than or equal to 24 centimeters. Option C is greater than or equal to 23 centimeters, and this is the technical committee's recommended option because of the changes that they're seeing in the sizes that herring are starting to spawn. Option D is greater than or equal 22 centimeters.

The next issue is looking at the number of fish per sample that are collected. Option A, which is status quo, currently there is a requirement for 50 fish per sample. Option B is looking to change and it would be a hundred fish per sample. Sufficient sample information shall mean that at least two samples of a hundred fish or more in either length category taken from commercial catches during a period not to exceed seven days apart. The technical committee recommends increasing to a hundred fish per sample because the states of New Hampshire, Maine and Massachusetts are already collecting a hundred fish per sample.

For the public comment that we received for the document, we received two comments. These comments supported changes to the spawning area boundaries through addendum and not through Section action to allow for full public comment. The technical committee recommendation to change sampling protocol for all sizes of spawning herring, specifically one of the commenters said that they would support a size bin to a trigger for a closure at greater than or equal to 22 centimeters, which is Option D.

They support increasing the sample size to a hundred fish. They also encouraged action to alter boundaries consistent with stages and aggregations of spawning herring. Specifically some of the commenters encouraged setting a spawning area for Nantucket Shoals and also to setting a spawning area for Georges Bank.

There was an overall concern for the herring stock in some of the comments and for the Section to consider what are the implications of fish that are maturing at smaller sizes and to think about the ecosystem level

importance of spawning herring as the Section moves forward with management. Those are the public comments.

CHAIRMAN PIERCE: Thank you, Toni. Are there any questions of Toni regarding the options as she has described them or regarding any of the public comments that have been submitted relative to the addendum? All right, I see none; we'll therefore go on to the technical committee report to be provided by Matt.

MS. KERNS: I actually gave the technical committee's options in my narrative.

CHAIRMAN PIERCE: All right, very good. The advisory panel report will be provided by Jeff.

MR. JEFF KAELIN: Good morning, Section members. It is a pleasure to be here as the AP Chair for the first time. I'm also an AP Chair now for the New England Council. You have a summary of the conference call we had on June 1<sup>st</sup> in front of you. I will read through this to make sure I don't miss anything.

We did have a call. I was elected chairman and we were all very appreciative of the work that Dave Ellenton had done as AP Chair since 2003. He will continue as a member of the AP. On Section 3.1, spawning area boundaries, the AP unanimously supported Option A; spawning area boundaries modified through the addendum or amendment process.

We agreed that changes to spawning area boundaries have significant impact on industry and public hearings and a public comment period are necessary to inform the Section before making a final decision. For example, under the zero tolerance provision, closures can overlap and close the entire Maine coast for part of the year.

AP members also commented that quick decisions based solely on new scientific information often have unintended consequences if not vetted through fishermen and the AP first. On the size bins, the AP unanimously supported Option D, greater than or equal to 22 centimeters. We support the size reduction mainly because of concern that smaller spawning fish might not be counted during sampling, and there was some concern that sampling data from Maine DMR was not utilized when coming up with these options although a thorough presentation of the data would have been useful in the document.

AP members did utilize Table 1, which identified the percentage of spawning or developing females, in deciding on this preferred option; agreeing that 20 percent of a 21 to 22 centimeter fish in 2011 is significant enough to decrease the size bin on an annual basis to 22 centimeters or greater. AP members also noted that herring are spawning at a smaller size and not at a younger age.

On Section 3.3, number of fish per sample, we were also unanimously supportive of Option B. There was a lot of unanimity in this AP; probably the most that I've ever seen in my entire life, which was good. Option B, a hundred fish per sample, we agreed that increased sampling provides a more accurate understanding of when and where herring spawn.

All AP members agreed that states don't collect enough samples and resources should be funneled by the states to increase the number of fish collected for spawning area closures. There was support from most of the AP to remove the zero tolerance provision that now exists as this measure has resulted in fewer and less accurate sampling because commercial samples are unavailable during a closure.

The members that were supporting this agreed that the broad closures are a result of insufficient sampling effort and that increased sampling could allow for tolerance. One member disagreed with the tolerance because you have to kill spawning fish to learn that an area should be avoided. There was a tolerance in place for decades. I don't know, Dr. Pierce, that could be something that might be added to the white paper if the board wants to consider that in the discussion on the Nantucket Shoals spawning stock, perhaps. I just throw that out as an idea.

Under other business, the AP discussed a few issues that we wanted to highlight for you this morning. We believe states should increase their sampling effort, especially New Hampshire. AP members would support programs for fishermen and dealers contact state marine fisheries agencies and provide them with spawning herring samples.

Zero tolerance spawning closures should be re-evaluated. The AP is concerned that regulations may not be consistent from state to state and think that the technical committee should review the regulations again. The specific issue that was raised was that perhaps Massachusetts did not issue notice when the Western Gulf of Maine and Eastern Gulf of Maine spawning areas are closed.

There is concern that seven open days is too liberal. That really speaks to the days-out scenario; that is

changed. And then finally we agreed that the Section should consider a days-out measure for Area 2 because of the quick closure of the Area 2 herring fishery last year; a lot of fish around up in the Rhode Island area, which did not allow sufficient herring to remain during the winter to allow a mackerel fishery to take place. That ends my report, Mr. Chairman.

CHAIRMAN PIERCE: Thanks, Jeff. Questions of Jeff? Pat.

MR. PATRICK AUGUSTINE: Mr. Kaelin, on your report you noted that there was only a difference – and I apologize for not having reviewed that chart – you noticed there was only a difference in that 22 and 23 centimeter for two – was it two years, 1976 and 2001? I guess the question to our technical committee would be does it make a difference whether we do the 22 or 23 where the advisory panel noted it was an age issue versus a size issue? If we go one number versus the other, how would it affect the results of your information?

DR. MATT CIERI: That is actually really a good point and something I was going to bring up a little bit later on. If you go to I believe it is the table on Page 8 of the addendum document, you will see that there is a highlighted section of a 23 to 24 centimeter size bin. If you look at the 22 to 23 centimeter size bin directly above that, that row directly above that, what you can see is that there has only been a few – there is only been basically 2011 in which you've actually had a significant amount of spawning occurring in that size bin.

The difficulty is that spawning tolerances and triggers are based on a percentage of mature fish caught. So, what ends up happening is if you've got a lot of fish in that sort of 22/23 centimeter size bin that aren't spawning, they're going to affect your results. So if they're not maturing like they did in 2011, then you will end up not closing those places that need to be closed based on other fish. Do you see where I'm going, because you're adding in zeros is what it comes down to. So we believe that the fish in that size bin aren't consistently spawning on a year-to-year basis and therefore you're probably better off using the 23 and up.

CHAIRMAN PIERCE: Thanks for that clarification, Matt. Pete.

MR. PETER HIMCHAK: I was focusing on the same point, and the conference calls for both the technical committee and the advisory panel were on the same day. Was the AP aware of the technical

committee's comment on the number of immatures that they would get at 22 inches? This wasn't brought out I don't believe in the development of the addendum where the technical committee – I think at that point it was 22/23.

Well, now the technical committee is coming out with a good reason to say 23 inches. If the advisory panel had been aware of the technical committee's conference call results – well, were they, first of all; and if they were, would it have influenced your decision; because if you go with the smaller size limit, then you may have the reverse effect of not protecting spawning Atlantic herring. That is my question to Jeff.

MR. KAELIN: I don't think we were aware that the technical committee had their call the same day. I think generally we felt that this might be a little bit over our head, honestly, and my sense of the call was that AP members wanted to be as conservative as we could be and making sure that we're protecting spawning fish.

I'm not sure my head is wrapped around this particular issue that both you gentlemen brought up this morning, but I can tell you that we were just trying to be ultra-conservative, I think, in our discussion. If the technical committee's advice is to use a 23 centimeter fish and we were clear about, I wouldn't be surprised if we would support that as an advisory panel.

CHAIRMAN PIERCE: Thank you, Jeff. Any further questions of Jeff? All right, we now have the Law Enforcement Committee Report.

MR. JOE FESSENDEN: Good morning. Basically, I think in your packet you will find a memorandum from Mark Robson, our law enforcement coordinator's comments from our committee on the Addendum V for Atlantic herring. I will read the bottom paragraph basically is we reviewed the Section 3.0 and as far as the LE Committee was concerned, no concerns or issues were raised by members regarding these management measures.

Current management allows for changes in spawning area seasons depending on the availability of sampling data. No additional problems are foreseen with the mechanism to change boundaries provided that timely notification of such changes is integral to the process. The LEC is supportive of efforts to consolidate and standardize regulations into one primary management document. The LEC



appreciates the opportunity to review this addendum and provide input.

CHAIRMAN PIERCE: Thank you, Joe. Question of the Law Enforcement Committee? All right, I see none; therefore, it is time – Pat.

MR. AUGUSTINE: Are you ready for a motion or are we going to get public comment or where are we going to go with it, Mr. Chairman?

CHAIRMAN PIERCE: No, it is now time for a motion if anyone cares to make one, and I suspect you are ready.

MR. AUGUSTINE: Sure, we would like to do that, Dr. Pierce. Relative to management measures, how would you like to have this stated? I would state that 3.1, spawning area boundaries, should remain status quo; 3.2 –

CHAIRMAN PIERCE: Hold on one second; so you're saying Option A?

MR. AUGUSTINE: Option 1; thank you, Mr. Chairman; 3.2, size bins that trigger a spawning closure start would be Option B; and 3.3, number of fish per sample –

CHAIRMAN PIERCE: Hold on one second; excuse me, I just wanted to make sure that we have this right. You said for management option 3.2.2, Option B, greater than or equal 24 centimeters, which is the technical committee's report or the advisors' suggestion.

MR. AUGUSTINE: I thought that was the technical committee's recommendation Option –

CHAIRMAN PIERCE: Option C is the technical committee.

MR. AUGUSTINE: I'm sorry, Option C, I stand corrected.

CHAIRMAN PIERCE: Okay, so your motion is for Option A under 3.1.2, spawning area –

MR. AUGUSTINE: Correct.

CHAIRMAN PIERCE: – boundaries can only be modified through an addendum to the FMP. And then the second part of your motion is Option C for –

MR. AUGUSTINE: Option C, greater than or equal to 23 centimeters.

CHAIRMAN PIERCE: Greater than or equal to 23 centimeters, and –

MR. AUGUSTINE: Under 3.3.2 would be Option B, 100 fish per sample, Mr. Chairman.

CHAIRMAN PIERCE: Okay, we have a motion. Staff is putting it in clearer terms on the screen; it would be **move to adopt Option A for 3.1.2, spawning area boundaries; Option C for 3.2.2, size bins that trigger a spawning closure start – add that language in – size bins that trigger a spawning closure start; and Option B for 3.3.2, number of fish per sample.** I correctly stated that motion, Pat?

MR. AUGUSTINE: That is correct, Dr. Pierce.

CHAIRMAN PIERCE: Okay, thank you; so Pat Augustine has made the motion; Pete Himchak has seconded the motion. Discussion on the motion? Terry.

MR. TERRY STOCKWELL: Thank you, Pat, that was the exact motion I was going to make. I appreciate the work of the technical committee and the AP. The technical committee's work is going to answer a lot of the issues that we've have been not really struggling with but dealing with over the last couple of years for consistency in the spawning regulations. I certainly feel that Option A under 3.1.2 is important enough to require a public hearing. Anytime we change a spawning area boundary, the public should be involved. I'm a hundred percent supportive of Pat's motion as it is on the board.

CHAIRMAN PIERCE: Other comments? I see none; I'll go to the audience. Does anyone in the audience wish to comment on the motion? I do not see any interest; therefore, any need for a caucus?

(Whereupon, a caucus was held.)

CHAIRMAN PIERCE: All right, all those in favor of the motion please signify by raising your hand; all opposed; any null vote. **Okay, it is unanimous; the motion is approved.** Next we need a motion to approve Draft Addendum V to the Interstate Fishery Management Plan for Atlantic Herring. Bill Adler.

MR. ADLER: **I'll make the motion to approve the addendum as approved options.**

CHAIRMAN PIERCE: Okay, so we have a motion to adopt the Addendum V with the options that we

have selected. The seconder is Pat Augustine. The motion is move to approve Addendum V to the ISFMP for Atlantic Herring with options selected. Motion by Mr. Adler; seconded by Mr. Augustine.

All right, I'm assuming there is no need to caucus and I can ask the simple question is there any objection to adoption of this motion? I see no objections; therefore, **we will consider the motion approved. We have adopted Draft Addendum V.** Now, as a reminder I'll turn to Toni and she will once again indicate the next step in this process.

MS. KERNS: I will work with Matt and we will draft a full set of spawning regulations. We will give those to the technical committee to review and then at the annual meeting we will come back to the Section to review that full language and for you to consider approval of that so all of our spawning regulations will be in one place.

CHAIRMAN PIERCE: All right, thank you very much. I think I can speak on behalf of the Section to express our appreciation to Matt and to other members of the technical committee who have put in a lot of time regarding the crafting of this addendum, the technical support for the addendum, and we greatly appreciate the fact that they did call to our attention a problem that needed to be addressed and indeed we have done that.

### **REVIEW OF THE NEW ENGLAND FISHERY MANAGEMENT COUNCIL AMENDMENT 5**

CHAIRMAN PIERCE: Next on the agenda is review of the New England Fishery Management Council Amendment 5 selected measures. Indeed, the New England Council has acted. The decisions have been made and now Toni will provide us with an update as to what that council did.

MS KERNS: The council did select measures to move forward in Amendment 5. Those measures that were selected have been sent to the regional office for their consideration and approval. Options include expansion of possession restrictions. It eliminates the VMS power-down provision for limited access herring vessels.

It establishes a new at-sea herring dealer permit for carrier vessels. It looks at the pre-trip notification requirements for all LA herring vessels and Category D vessels fishing in the areas 1A, 1B and 3. It has pre-landing notification requirements that would apply to all vessels. Federally permitted dealers are

required to accurately weigh all fish and document how the composition of mixed catch is estimated.

There is a 20,000 pound possession limit in Area 2/3 for vessels that also possess a federal LA mackerel permit. There is a hundred percent at-sea observer coverage on Category A and B vessels supported by funding from federal and industry and the use of state service providers. It improves the catch sampling by observers. There is a trip termination after ten slippage events for limited access vessels with the exception for slippage because of spiny dogfish. There is a two-phase bycatch avoidance approach. The bycatch limits or catch cap will be approved for consideration in future herring action. For midwater trawl access to the groundfish closed areas; apply closed Area 1 provisions; and there is a hundred percent observer coverage on all trips in the groundfish year-round closed areas.

Also, as an update yesterday there was a federal court decision for the lawsuit that was undergoing for Amendment 4 through the New England Fishery Management Council. That lawsuit was filed in April of 2011. The court ruled that Amendment 4 is vacated or null for one year from now.

The court will retain oversight of the agency's actions in this matter until the National Marine Fisheries Service fully complies with the court ruling. It requires that the National Marine Fisheries Service and the New England Fishery Management Council review the most recent science and consider a full suite of protections for shad and river herring.

It gives the National Marine Fisheries Service one year to take action to minimize the bycatch of shad and river herring. It orders the National Marine Fisheries Service to consider new approaches for setting the allowable catch for sea herring that accounts for its role as food. It requires reports to the court at several stages, one, six and twelve months down the line. This ruling just came out yesterday so this is the limited information that we have on the ruling.

CHAIRMAN PIERCE: Thank you, Toni. This update from Toni is a bit of a surprise to me. I was unaware of it. Of course, I knew that it was eventually going to happen; the judge would eventually rule. I think what we're going to have to get from the National Marine Fisheries Service fairly soon now that the decision has been made is to what extent will the actions taken by the New England Council in Amendment 5 address the court's concerns.

That I think is a central issue. Well, it is the issue, I think. For example, in Amendment 5 the council went with a river herring monitoring and avoidance approach and not the river herring protection approach which would involve specific closed areas. It is a two-phased bycatch avoidance approach and it is an approach that was developed by the fishing industry itself working with SMAST, which is, of course, the University of Massachusetts-Dartmouth and Marine Science and Technology and also the Division of Marine Fisheries.

The council chose to go with that and the council chose to go with a river herring catch cap, but the cap would be implemented through a framework adjustment or the fishery specification process; in other words, through the next appropriate action. I believe the council is still waiting to be advised as to whether or not we can actually implement the river herring catch cap through the specification process. I will turn to Doug Grout, who is chair of the Sea Herring Committee of the council. I think I misstated something; go ahead, Doug.

MR. DOUGLAS GROUT: I believe that we will more than likely have to go through a framework as opposed to a specification process. That was my understanding from our council meeting at that time.

CHAIRMAN PIERCE: Doug is correct; that is the understanding. However, there is still some disagreement among New England Council members as to whether or not this can be done through the specification process. I for one believe it can be done through the specification process, but NOAA Legal Counsel has told us it cannot be done. It is a rather bizarre situation, to say the least, and now I think it will unfold more as a consequence of the judge's decision.

We will see if indeed NOAA Fisheries will change its mind on that particular position as to whether or not it can be done through the specification process. It will all unfold, to say the least. Any questions of Toni regarding what she has provided regarding a summary of what the New England Council has done and, of course, what the judge has just decided. The many specifics of what has been adopted through the New England Council's actions, of course, can be found on the New England Council's Website if indeed anyone cares to really delve deep into the individual issues and the rationale for all the different decisions. Pete.

MR. HIMCHAK: Mr. Chairman, maybe you can't answer this now because this complicates the process for implementing a river herring/shad cap. You recall Amendment 5 was paralleling the development of Amendment 14 in the Mid-Atlantic Council for squid, mackerel and butterfish. Now, we voted on preferred management options at our June council meeting.

Is now recommendations that have been made to the National Marine Fisheries Service for the development and implementation of a cap that would be developed through 2013 and implemented in 2014; not through a framework following the amendment, but as part of the actual Amendment 14; whereas, New England was working under the premise that the cap would be developed through a subsequent framework adjustment.

I guess my question is, well, what is the anticipated implementation of a river herring/shad cap under Amendment 5 in consideration of what we're doing with Amendment 14. They may be on the same timetable now. You may have to accelerate your process; whereas, I was afraid you'd be like a step behind the Mid-Atlantic.

CHAIRMAN PIERCE: So to clarify, Pete, the Mid-Atlantic Council will be doing it through the specification process, right, setting a cap through specifications?

MR. HIMCHAK: That's correct.

CHAIRMAN PIERCE: Okay, and right now the – okay, Doug.

MR. GROUT: I would anticipate, given what we were talking about, we would be on the same timeframe. You're right, Dave, that was some discussion that the council had that we already had a mechanism under Amendment 1 to put in a river herring catch cap, but the NOAA Counsel advised us that we did not properly consider river herring in those catch caps. Until I hear differently from NOAA Counsel, I have to assume that we're going to do it via framework.

CHAIRMAN PIERCE: Okay, the Chair of the Herring Committee, those are his views and highly respected views. Bill.

MR. ADLER: Toni, back to Amendment 5, there was one line there that you said something about applying to Area 1, and I didn't know what that meant.

MS. KERNS: Bill, were you talking about the pre-trip notification required for all limited access herring vessels and Category D vessels fishing in Area 1A, 1B and 3?

MR. ADLER: No, that wasn't it; yes. Maybe Closed Area 1 Provisions; what was that one about?

MS. KERNS: The midwater trawl vessels would be prohibited from fishing in the groundfish year-round closed areas without a National Marine Fisheries Service approved observer on board.

CHAIRMAN PIERCE: Any further questions of Toni? Yes, Bob.

MR. ROBERT BALLOU: Toni, just so I understand the court's ruling; did that reflect at all the council's decision on Amendment 5 or was that undertaken separately and without regard to the council action?

MS. KERNS: I would believe it would be separate without regards to the council action because the document hasn't been finalized. Amendment 5 hasn't been finalized. It has to go through the regional office and then beyond before it gets finalized, so it wouldn't be brought in otherwise would be my assumption. It wasn't a part of the lawsuit so I'm not a hundred percent sure everything that the judge looked at.

MR. BALLOU: And just a quick followup; so now the National Marine Fisheries Service needs to review Amendment 5 both with regard to Magnuson provisions and now with regard to this new court decision. It adds an additional layer of review upon the National Marine Fisheries Service; is that my understanding of where things now stand?

CHAIRMAN PIERCE: I think we can assume that is what the Service will have to do. I believe the assumption has been that Amendment 5 had options within it that would enable – well, that would adequately address concerns about river herring. The question now becomes – the options that were adopted by the New England Council as part of the amendment; do they go far enough; do they actually address the judge's concerns. We don't know because no one has the decision – we don't have the decision in front of us and I don't know the specifics. Toni did a very good job summarizing where it stands right now. Bob.

ACTING EXECUTIVE DIRECTOR ROBERT E. BEAL: Just quickly reading through the judge's orders, they do reference Amendment 5, but the way it is worded in my quick reading here is that they

don't presuppose what the outcome of Amendment 5 is going to be coming out of the National Marine Fisheries Service.

They recognized that Amendment 5 is moving through the process and has been approved by the council. As part of the one month, the six months and twelve month reports back to the court from the National Marine Fisheries Service and the council, the relationship between Amendment 4 and Amendment 5 is going to be one of the key points in those reports.

CHAIRMAN PIERCE: Thanks for that additional information, Bob. Terry.

MR. STOCKWELL: Just to follow up, Doug, I have the same recollection of general counsel's advice to the council that moving forward a catch cap would have to be through a framework. John Bullard will be here tomorrow and this will be a real welcome to our neighborhood and a question to ask him.

CHAIRMAN PIERCE: All right, to be added to the list; very good. Any further questions?

MR. HIMCHAK: Mr. Chairman, I just wanted to follow up the Mid-Atlantic Council also voted to begin the initiation of Amendment 15 to the Squid, Mackerel and Butterfish FMP to include river herring and shad as stocks in the fishery. This further complicates and that will include ACLs and AMs for river herring and shad in those fisheries.

## **ATLANTIC HERRING SAW 54 BENCHMARK ASSESSMENT**

CHAIRMAN PIERCE: Thank you, Pete; nothing new; increased complexity and complications; par for the course. Any further questions of Toni? All right, I see none; therefore, we will go on to the next agenda item, which the Atlantic Herring SAW 54 Benchmark Assessment. Matt is going to give us his summary of the stock assessment report as well as the peer review panel report of that assessment that we have been waiting for. Toni.

MS. KERNS: I just want to let the Section know that the reports were on your supplemental materials. The full assessment report has yet to be released. When I called to inquire about the full assessment report, they said it would be several weeks. It is undergoing some revisions, mostly edits, but as soon as it is released I will send it out to the Section; or, if it's too large of a report, I'll send you all a link to pull it off of the ASMFC Website.

DR. CIERI: Yes, those tend to be pretty honkin, so by and large you're going to get a link because otherwise these documents are literally like 200 megs by the time we're done with them. My name is Matthew Cieri; I'm the technical chair and also from Maine DMR. I'll be talking to you today and giving you an update on the summary document from the 54<sup>th</sup> SARC.

This SAW/SARC actually accomplished two species. One was yellowtail flounder and the other one was Atlantic herring. We'll talk today about Atlantic herring rather than yellowtail flounder as herring is a commission managed species and yellowtail is not. This particular idea was to take a new approach for Atlantic herring.

As you may remember from some of the background information, in 2009 we did an update through the TRAC process. At that particular TRAC meeting it was discovered that there was a very large retrospective pattern with the model as well as some very significant uncertainties about some of the end result.

What ended up happening was during the specifications process for Atlantic herring, the SSC moved to simply use the last three-year running average for Atlantic herring and to set specifications based on that. Even though the model for 2009, that update had been peer reviewed, it was still only an update and it was a very difficult model to deal with.

We decided to take a fresh look at Atlantic herring in an Atlantic Herring Assessment through a SAW/SARC process. We looked at a number of different types of models; the first one being SS-3, which is a very popular west coast model, which is length and age based. Then we also looked at another model developed by Yong Chen, which is very similar to the lobster model that you guys might be familiar with for the Gulf of Maine.

We also started from scratch with all of our surveys. New and old surveys were brought to light during this entire process, and these included the winter, spring and fall NMFS bottom trawl series; the Gulf of Maine shrimp, which actually will end up becoming fairly important; the inshore Maine, New Hampshire and Massachusetts DMF trawl surveys; as well as the larval survey and a Georges Bank acoustic survey. Those are all the surveys that we had to work with.

We reformulated natural mortality completely and looked at a lot of new, fresh approaches for natural mortality that are done for some other species as well

as stuff that we came up with ourselves. We took a fresh look at the catch at age. We took a fresh look at pretty much a lot of the landings. We took a fresh look pretty much at a lot of stuff.

At the end of the day we ended up with the same model. It is the same model but entirely different, and I'll go through some of these changes as we go along. The last time we used this model called ASAP, which is an age-structured forward-projection type of a model, using a statistical catch-at-age approach.

As you might remember, we had a standard natural mortality across the board, all ages, all year at about 0.2. We had a huge retrospective bias, on the order of 40 or 50 percent, and that tended to overestimate your biomass and underestimate your fishing mortality in the terminal year. There were a lot of problems with that old model.

This time we used the same model. It is the same statistical framework, but we've got a new formulation for the catch at age. We've got new fleets. We got age and year time-varying natural mortality. We've got new surveys and we've a whole other bunch of stuff in there. The data, just stepping right through it, we've catch and catch and age from 1965 to present; so we used a new approach and reformulated that.

We broke it out into two types of gear, fixed and mobile. In this case fixed would be a stop seine and weir as well as any type of pound net activity, that type of fixed gear, and mobile gear which would be purse seines, midwater trawls and bottom trawls. Instead of resolving the catch-at-age spatially, we decided just to lump everything all together. In the past we've resolved it spatially, but then we've had to borrow samples from one thing to the other.

Most of us found that to be kind of silly, so therefore we just simply did it as one lump. For the surveys we included the NMFS spring survey and the NMFS fall survey and then a new survey, which hasn't been online before for Atlantic herring, which was the shrimp survey that occurs in the Gulf of Maine in the summer.

This is a particularly important survey because it predominantly catches herring age five and up, so it as an adult index unlike some of our other surveys. The ones that we considered but ended up finally rejecting for use in inclusion in this model was the NMFS winter survey, the flatfish survey.

The acoustics and the larval survey were also tossed as well as the Massachusetts DMF and the New Hampshire bottom trawl, mostly because these don't cover the entire range of the stock, and what we're trying to look at is the entire meta-complex of Atlantic herring. Just to give you a landings breakdown of what this kind of looks like, again this is right out of the document.

You can turn and follow along in the figures if you're having trouble seeing, but we've got mobile gear and the catch of mobile gear by year from about 1965 onward. You can see this sort of large spike here. That would be the ICNAF fisheries, the foreign fleets that went after Atlantic herring. We have a New Brunswick weir fishery in the panel right below that. As you can see, it has been highly variable, but in some cases where it is much higher than where it is currently down here.

The U.S. fixed gear fishery; the same deal; in the eighties actually quite high, 60,000 metric tons was being taken by fixed gear alone and now it is down around five or six hundred metric tons. When you look at this in the overall total, what you can see is pretty much everything follows the mobile gear, and by and large we've had large landings back here in the ICNAF fisheries. It then declined and now we've got some – we had some increase here in the mid-nineties and then it started to come down ever since.

We took a completely fresh look at natural mortality. I know this is fairly technical. A lot of this will be explained in detail when the assessment report comes out, but we did a Hoenig approach, first off, which basically gives us a scale of what natural mortality is, and that is based on life history. That includes things like growth and maximum age.

This gives us an idea of what natural mortality is using this approach. We then took something called the Lorenzen approach, which looks at body size, and this gives us actually  $M$  at age. What it does is when you go through and you take look at that type of stuff, what you end up seeing is that smaller, younger fish tend to have higher natural mortality than older fish.

It is something that most people can kind of grasp their hand around. We've now got age and year time-varying natural mortality from the approaches. One of the other things that we did was to take a look at the consumption data, and what it indicated is that there seems to be sort of two break points for Atlantic herring; prior to 1996 and after 1996.

The consumption data available from the NMFS Food Habits Database increased it. After 1996 there was a very large increase in consumption. This large increase in consumption by some of the major predators, including striped bass, dogfish, monkfish and a few others, indicated that we should shift our natural mortality to 50 percent higher on average for all of our years, for all of our ages after 1996.

Surprisingly when we did that, what ended up happening was our retrospective pattern completely went away. That was one of the indications that indicated that doing this type of an approach was going to be beneficial in resolving some of our issues that we had had with the previous model. This overall reduces the retrospective pattern.

So post-1996 has been an increase in natural mortality as a result of increased consumption by most of the dominant predators in the system. That was included so all of the natural mortality by age and by years was then scaled up by 50 percent. When we did that, a lot of our problems with our previous model went away.

To give you an idea of what that kind of looks like, again from Figure 6-A you can take a look at what the consumption looks like in total magnitude as well as the ratio of consumption and catch. Again, this might end up being an important figure. What you can see is that at certain times consumption by itself is 600,000 metric tons, and that the ratio of consumption and catch in some cases tops out to be five, six times what the fishery catches in total biomass.

When you start including these in the calculations, this is the reason why things are going change with your reference points, as we'll discuss in a few minutes. So you're now accounting for predator removals which are literally anywhere from four to seven times what your fishery is catching. You change the stock dynamics when you do so and you change your reference points and the stocks productivity when you account for that.

Again, in looking at this, the red line here is roughly about what you've been catching on average. You can take a look at just the consumption and just from an eyeball you can see in the black line fishery catches. For example, in 2008 the fishery catch is 100,000 metric tons, but the actual predators are removing 600,000 metric tons. Keep that all in mind as we move forward.

When we did the consumption and we took a look at all this natural mortality, what we ended up seeing was in some cases the approach that we had taken was very consistent when you started adding up all of your predators that might be important for Atlantic herring consumption. In some cases we didn't just include other fish predators, but we also included a highly migratory species; bluefin tuna, for example, and some of the migratory sharks.

We included birds and in particular we included marine mammals, particularly seals. That ends up becoming fairly important. When you do that, our approach using both Lorenzen and Hoenig with a 50 percent scaled, comes in at this black dotted line. Whereas, if you simply added up all the consumption by predators that we know of and can account for directly, you're looking at something like what occurs in the orange line here.

So they're roughly on track, they roughly give us the same order of magnitude. The approach that we took is probably a little bit more than when you add up all the consumptive fishes and mammals, but the difference is that there is some stuff that you just can't account for in the food habits database; like striped bass in inshore areas, for example; places in which Atlantic herring are that the NMFS bottom trawl doesn't go and the food habits data does not exist for. That becomes fairly important.

We were all done and we figured all of that stuff out and we came out with our results. Our these results included our reference points and our status, which is what we're supposed to give and the SSC as we go through all this process. The current estimate at  $F_{msy}$  from this benchmark assessment is 0.27. Current  $F$  is estimated to be about 0.14, so we are fairly far below our  $F$  at MSY.

Our spawning stock biomass at  $B_{msy}$  is about 157,000 metric tons with half of that being about 78,000 metric tons. Those are our typical biological base reference points for both fishing and biomass for managing the stock. Our current SSB is roughly a little bit above half a million, so we are very far, far above our biomass targets; more than double.

The current estimate of MSY from the productivity of this fish over the long term is about 53,000 metric tons total for a long-term sustainable yield. The 2011 catch was roughly about 88,000 metric tons, and that is actually lower than what it has been taken in the ten or fifteen years, which has roughly averaged around 100 to 120.

So we have re-estimated our MSY, and part of that is due to the changes in natural mortality that we've seen. The overall status is that we are not overfished and overfishing is not occurring for Atlantic herring, but we do have a number of uncertainties associated with this, and I will get to that in a minute. The first thing is to realize to take a historical look at what fishing mortality has looked like for Atlantic herring, and this is exactly what it has looked like or at least as we have estimated it.

As you can see, our  $F$  at MSY reference point is here in the dashed line, and this is what things have looked like in the past. You will notice that this  $F$  at MSY dashed line does not go past 1996. That is on purpose, because this is the reference point – the  $F$  at MSY that was developed post-1996, and that is actually a fairly important point is that we don't know what  $F$  at MSY was back in this timeframe.

We do and we can probably estimate it, but it was probably much higher because your predator removals were not as great. Looking at it from spawning stock biomass, again here is your reference point. Again, it only goes back to 1996. Here is your biomass. This gives you an idea of where you are biologically with the actual biomass of the stock relative to your reference points.

If you're looking at total biomass, what you see here is it just gives you the sort of magnitude, but it also gives you – it highlights where we are versus where we thought we were historically. This is actually another important point. Back here before the ICNAF fisheries, we were running at a total biomass roughly at about a million to 1.4 million. This is where we think we are now for total biomass.

The other thing to keep in mind – and again we'll talk about this – is that there has been a very gradual decline in Atlantic herring biomass since roughly about 1996 until about 2008, and that is one of our uncertainties. One of the things that this model is suggesting is that is a very large year class for 2008, which we will get into.

The major uncertainties that are associated with this problem; we have resolved the retrospective pattern. For the most part it is done. We've got a different issue and that is the size and strength of the 2008 year class, and this is important for both – in particular for projections and for quota setting.

Right now the model is estimating that it is double the next highest year class of 1994, which is a lot. It literally doubled the biomass in one year. We know

it is a strong year class. We've got fishermen reports to that effect. It shows up in our surveys; it shows up in the catch-at-age matrix. It shows up in a lot of different other data that we've seen.

However, the magnitude is what is troubling. Is it literally double the next biggest year class we've ever seen in the history of this fishery? That is going to be the major uncertainty as we move forward. Even if it's the same size as the 1994 year class – and we believe that is probably a no-brainer – even if it is the same size, the status of the stock doesn't change, so this doesn't really affect the status of the stock itself.

What it does affect is your projections as you move forward in quota setting. To give this a graphical sort of presentation, here is 1994. You'll notice that there have been spikes in year class all along. Here is 2008. It is estimated to be very, very large. The other difficulty is that it is not fully selected by the fishery, which means it is not fully available in the catch-at-age matrix so it is not fully being accounted for in the model without a lot of uncertainty associated with it. We've changed the selectivity of this fishery.

Prior to this we have assumed a knife-edge – everything is available for being fished on by age two. That's not really the case, and in some cases the 2008 year class in 2012 is going to be four years old, correct, so therefore it is not quite in there. It is only a little bit above 60 percent selected by the fishery, so it is not fully into the model.

It is not fully integrated into the model and so there is major uncertainty associated with that year class. The report actually sort of sums it up a lot better than I can. What they said is that in the short term – and this is from the peer reviewers – in the short term this 2008 year class may reduce the vulnerability of the stock to overfishing.

The strength of large cohorts, however, is often overestimated in the short term, and the strength of this cohort should be interpreted cautiously and decisions based on this assessment should consider this uncertainty. This statement and this issue is more than likely what is going to dominate all of the discussion for SSC for setting OYs and ACLs.

There are some other uncertainties also associated with this model. One is the scale of natural mortality in recent years; you know, to scale it up by 50 percent, we had a long discussion about that; you know, was it 50, was it 40, was it 60? Fifty seemed to be the appropriate step from sensitivity analysis; but when you change natural mortality as you just

saw, you not only change how you view the stock but what its reference points are.

Any uncertainty around your natural mortality can translate into a bigger uncertainty with your reference points. The other major uncertainty deals with the unit stock. You've got a couple of things going on here. One is that you've got a meta-complex with a bunch of smaller aggregations in it with different environmental pressures, probably different natural mortality rates, different growth rates, different harvest pressure, all lumped into one, and so that can give you some uncertainty associated with it.

The other thing is that there is some uncertainty about that mixing with the Canadian stock, with 4WX. What we've started to notice is that in certain years there seems to be more leakage from the Canadian side to the U.S. and vice versa, and so there needs to be a little bit more work done on that.

We've had to make the assumption that our stock is ours and that the New Brunswick weir fishery is part of the U.S. stock just as we always have, but we recognize that this is an uncertainty and actually can give you false readings. Particularly if you have a strong year class in Canada that winds up in U.S. catches, it can give you that false impression that looks like emigration or migration, so that can mess up a model.

Right now we're dealing with the projections and these are also available from the document. You totally can't read this but this is also Table A-1, and I've got sort of a summary over here. Basically, you're roughly at about 518,000 metric tons spawning stock biomass. If you fish it at  $F$  at MSY, if you fish it at that rate of 0.27, your landings start off in the first year at about 168,000 metric tons, double what you currently catch.

These landings will drop to about 100,000 metric tons by 2015, and your stock will from half a million down to 300,000 at an  $F$  at MSY rate. At basically 75 percent of that rate, you can already tell what is going to happen. You drop from half a million down to roughly about 300,000 and change. If you keep the  $F$  current, your rate at 0.14, you go from roughly half a million and you drop it down to 400,000 by 2016.

You start off with a catch at 93,000 metric tons; you wind up with 67,000 metric tons by 2015, so the catch goes down. If you fish it at the  $F$  at MSY, the 53,000 metric tons, you have 53,000 metric tons for each of the years, your stock declines from roughly



500,000 down to 448,000. Your stock still goes down even if you fish it at MSY, that is how far above your biomass targets you are.

If you kept the same catch, 88,000 metric tons, your stock will go from 500,000 down to nearly 400,000 metric tons by 2015. Note at no point do you actually go down to your Bmsy in any of these scenarios. Now, that I have completely boggled your brain the first thing in the morning – and I apologize for that – what is next?

The next thing is that somehow we've got the assessment result, we've got the reviewers' comments. They were actually very supportive. There were some minor tweaks that they wanted us to do within the model during the meeting. Those have been resolved. Currently we're editing the document. They provided their comments; those are available, but basically they went along with the formulation as we've suggested.

From here it goes to the PDT/TC for a meeting on the 14<sup>th</sup> of August. Anyway, then we have an SSC meeting on September 4<sup>th</sup>, and this is where the SSC will get their crack at it. This is where they're going to be looking at it in terms of things such as OFLs and ABCs. Now, if you're not really completely familiar with some of these terms, an OFL is your overfishing limit.

It is always going to be higher than your ABC, your allowable biological removal, and the difference between those tends to be scientific uncertainty associated with them. An ACL or accountability measure, those are set by the managers and the buffer between ABC and ACL will account for management uncertainty.

As you guys move through the specifications process, you will be getting a presentation from Lori about all of these alphabet soups for you to contend with. You've got a committee/section meeting on September 20<sup>th</sup> I believe in Warwick, Rhode Island, and then this kicks off the specifications process for Atlantic herring and area allocations of quota by area.

In this assessment document there hasn't been a lot of guidance on the proportion of inshore and offshore fish, so that is going to take a lot of work through the specifications process. The idea is to have an approved document out to NMFS I believe in the fall for final approval by January 1<sup>st</sup> or as soon as possible thereafter for total quotas. That's it.

CHAIRMAN PIERCE: Thank you, Matt. I've always known that you have borne a striking resemblance to Harry Potter, and the reason I say that is I can picture you with your wand saying, "Retrospective pattern, be gone", and it is gone. Shocking! That's good news. Questions of Matt? Bill.

MR. ADLER: First of all, back to your natural mortality where it was 0.2 but you increased it by 50 percent, so you mean 0.3 now; is that how that works?

DR. CIERI: No, it is not. Actually, what we did was we changed how we looked at natural mortality. In the past it was – when we've assessed it previously, it was 0.2 across the board, all ages; all years. We actually redid that whole thing; and then when we went through and redid that, we've got an age and time-varying natural mortality that is some number.

I can't give you what that number is because it changes by age for each year. What we found is when we did that and we basically put that number in or those numbers in as a matrix, they didn't quite jive, and there was still something wrong with the model and it was that retrospective problem. Then we looked at the consumption data and realized that natural mortality had changed. We scaled all of our natural mortality for all of the years and all of the ages up by 50 percent.

MR. ADLER: Okay, if I may, Mr. Chairman, one more question. On this stock thing, on Page 14 and 15, could you explain why the wording there says that the biomass is at 517,930 metric tons in 2011 and then on the very next page it says estimated total biomass in 2011 is 1.322 million. What am I missing here; how we go from 517,930 in the same year to 1.3 million?

DR. CIERI: Does one say spawning and one say total?

MR. ADLER: Spawning stock biomass, so the spawning stock biomass is he 517,930, right?

DR. CIERI: Correct.

MR. ADLER: And then the larger number is the total?

DR. CIERI: Correct.

MR. ADLER: Okay, I'm trying to get my head around this. Thank you.

DR. CIERI: Right, because not all the fish are spawning.

MR. G. RITCHIE WHITE: It seems like the biggest change in this is the natural mortality. Will the natural mortality rate that you now have established; will that continue at the same rate in the next assessments or will that be up for review at each assessment?

DR. CIERI: It will be up for review each time we do it. Just like anything else, natural mortality and some of these parameters are always – they're always on the table for changing. I think over the short term, over the specifications process, the regime that you're in of high natural mortality due to consumption; that is a lock. You don't see any of the predator stocks aren't going to change over the next three years that dramatically. But at the end of those three years, of course, we'll go back and take a look at all of this stuff. We always do.

MR. GROUT: Matt, I was very pleased to see that retrospective pattern was reduced substantially by the work that you folks did. That was certainly something that made our job three years ago very, very difficult having that much scientific uncertainty. I just want to ask a question about was it the change in the retrospective pattern from your scientific and from the assessment's understanding was totally driven by this natural mortality. There wasn't anything else that you saw before you made the natural mortality regime change that indicated that there might have been some improvement in the retrospective pattern before?

DR. CIERI: It was kind of done in tandem. If you're asking did we change the natural mortality and simply fix the model or is this – it was a little bit of both. At first we took a look at the consumption data and then what we had as a natural mortality and what that translated to in biomass; and after 1996 they went like this (indicating).

And, we looked at it and went, well, that is really weird, but what if we scale it up, and then when we were running the diagnostics, we went, wow, the retrospective pattern just went away when we did that. It is one of those eureka moments where you go, all right, that makes sense, but we hemmed and hawed over that for a long, long time during the meeting about whether we were changing natural mortality just to get rid of the retrospective pattern and whether it was based in fact. The answer is it makes the model work better, which is a legitimate

way of doing it, anyway, but by and large there is also a lot of consumption data that goes into it that suggests the same thing.

MR. GROUT: Just a quick additional question; you had indicated that one of the uncertainties with the 2008 year class, your estimate is based on the fact it is not fully selected to the fishery yet. Is it fully selected to the fishery-independent gear yet or do they have about the same selectivity pattern as a fishery?

DR. CIERI: It is fully selected in the fishery-independent gear, and it shows up well in both, and it indicates that it is there in both. But the major driving force of this model is the catch and the associated age structure that is the major driving force of this model. It isn't fully selected by the thing that affects the model the most, so that is the uncertainty.

MR. GROUT: But at the same time was the change in the – was the magnitude in the fishery-independent gear as big as what the model is showing right now? Okay.

REPRESENTATIVE DAVID H. WATTERS: Matt, my question has to do with your confidence in the model over natural mortality. What risk do you factor into this could be wrong or that you're not anticipating changes in predation that may occur? How confident are you that going forward we won't have to be revising this?

DR. CIERI: This stuff is always on the table, all these parameters, selectivity, catchability, all this stuff is always on the table every time you do a benchmark, always. They're always relooked at. They may not change from benchmark to benchmark, but usually there is a statement in there as to why they haven't changed. They are always a fresh look.

This is based on life history parameters, by and large, with the backup being, wow, this actually fits with the consumption data as well. We don't see it changing over your three-year time horizon. You're not going to see a doubling of cod or of dogfish or of anything else in three years or of striped bass. It is just not going to happen, so by and large your consumption probably isn't going to change very much over the next three-year time horizon where you're setting specifications.

More than likely natural mortality is not going to change over three years, so therefore this is what we're going to base the projections on. Will it

change over time on a scale larger than three years, absolutely, and that will be based on the number of striped bass and dogfish that you've got hanging around as well as other things that also serve as forage.

One of the things that we've noticed, if you go back – if you look at the consumption data and you notice the dip – see the dip in 2003 down here – and what we're suggesting is that there might have been in the consumption data a lot of – we've got a lot of sand lance that comes in during that timeframe.

But the life history shows the same pattern, you'll notice, in how we have assumed with things, and that makes sense, but it is not as responsive, so there is a lot of variability. What a fish eats from year to year or moment or moment is based on availability, and sometimes herring aren't the most available; it is sand eels. But overall the size at age and the length and the size at – you know, when they get to be really, really old fish, and the longevity of the fish speak to an integrated over an average what the natural mortality is. Have I answered your question?

MR. STOCKWELL: Different version of Representative Watters' question and it concerns the 2008 year class uncertainty. It is almost easy for me to think about rolling over the specification process for a year in order to allow this year class to either recruit into the fishery or for us to be able to refute that it does not, and it probably is going to make a huge difference from your perspective and SSC's on what the recommendations are going to be for a specification-setting process.

Did I hear you correctly that you are projecting that this 2008 year class will carry through in the recommendations or am I hearing you that you're ringing a bell that we should be cautious as we deliver our specifications to either include or not include them into a three-year process. It makes a huge difference to all of us and certainly the industry.

DR. CIERI: I don't know what the SSC is going to do. This will be entirely up to them. I think there are major concerns from most of the assessment scientists of the magnitude of the 2008 year class. Is it really double the 1994? I think one of the things that we will probably approach when we go to the meeting, apparently the week after next; no, next week – one of the things we're going to want to see is what happens if we do the projections and the 2008 year class is the same size as the 1994, for example? That might be one thing to run.

So we're currently in 2012; by the time we get all the data together, if we ran the model next year, we would have a much better understanding, if you look at the selectivity curve, of whether or not that 2008 year class is as big as we think it is. We would be close to being fully selected to the fishery. We will have another year's worth of trawl survey data; you know, the whole nine yards. The uncertainty will certainly go down.

How the SSC deals with that uncertainty as a committee I don't know. They could come up with a number of different options. If the year class isn't as strong – it is strong and we know it is and we know it is better than average; but if it is not as big as we think we is, there could be a lot of caution that would need to be provided. You certainly don't want to open up the floodgates and realize three years down the road that that year class wasn't as big as we thought it was and wind up in a rebuilding process.

CHAIRMAN PIERCE: Matt, I've got a question. This 2008 year class, assuming it is as big as we think it is or almost as big as we think it is going to be, will this year be the year when that year class will be spawning or have they already had one opportunity to spawn once at age three? This has I think great relevance to concern of this Section, noted by Representative Peake earlier on, about protecting spawning fish. Any insights into whether or not this is the year?

DR. CIERI: They spawned last year. Last year was their first year of spawning. They will be spawning again this year. They are the dominant year class in the model. If you look back, here is the spawning stock biomass, and remember this was 2011. That peak right here in spawning stock biomass, that is the 2008 year class, but they're not fully mature until this year. Most of them entered this past year, 2011, but they will be in full force this year.

CHAIRMAN PIERCE: All right, so we all need to be vigilant with regard to spawning fish. Another question? Jeff, you had one?

MR. KAELIN: Yes, Matt, I'm confused; did you guys end the time series for the model at 2007 and eliminate the 2008 data point completely when you did the projections? In other words, do the projections include the biomass estimate based on the 2008 year class at all?

DR. CIERI: They do.

MR. KAELIN: They do; so there is necessarily then uncertainty about the projections due to the fact you included the 2008 year class?

DR. CIERI: Right. Yes, you kind of have to include the 2008 year class. If you remove them from – if you remove everything after 2007, for example, you remove not only that year class but you also remove the stock-recruitment productivity function that has happened post-2007. That is actually very important. That is your recent recruitment.

MR. KAELIN: Okay, thanks; I'm just trying to characterize how much scientific uncertainty remains after all this for our discussion with the SSC next month.

CHAIRMAN PIERCE: Does anyone in the audience have any questions that you would like to ask? Yes, Jud.

MR. JUD CRAWFORD: Jud Crawford with the Pew Environment Group from Boston. For better or worse, I was at all the stock assessment meetings. They went over a very long period of time. I thank Matt for doing a great job reviewing that process in his presentation. I think you've heard a lot about it.

I don't want to say very much except that I think that they made a huge step forward in terms of really grappling with this issue of the consumption of herring by real predators, looking at real information estimated from stomach contents, a lot of hard work at the Northeast Science Center, data that is hard to work with, and I think they did a great job trying to embrace that issue.

For the first time ever – I think this is correct – they departed from an assumption that predation or consumption of herring is static across all ages and sizes and  $M$  equals 0.2. In every assessment I've read the assessment scientists and the reviewers have said, well, we used  $M$  as equal to 0.2, but we know this isn't right and the next people that do an assessment should do something about this, and they never did until now. I think that they deserve some recognition for that.

Atlantic herring are one of the most important fish in the northeast U.S. because of the vast role they play in marine ecosystems and their importance to fishermen. That is a quote from the ASMFC's website that I just read to you. I just want to point out something that many of you around the table no doubt know, but as forage fish, the way we think about the reference points, the MSY reference points,

we now know I think – or many scientists are advising us we should treat those a little bit differently.

These are fish that are nearer the bottom of the food web and the way we decide how many of them we catch is a little different from the way we think about predators that are up near the top of the food web. I just wanted to make that comment and to point out that there have been some I think significant scientific activities going on both at the Marine Stewardship Council that is in the business of looking at fisheries and deciding how to certify them, convening scientists to look at this question of how catch levels should be set; and also the LENFES Forage Fish Task Force Report that was released recently; also looking at this question.

I hope as this assessment gets taken up and used for setting catch levels, caution will be taken not only because of the 2008 year class that has been an important year for New England, those of you who have been following the cod story, but also because these are very important fish and their abundance impacts on lots of other fisheries. Thanks.

## OTHER BUSINESS

CHAIRMAN PIERCE: Any Section members have any comments you would like to make regarding the presentation given by Matt? All right, with that we will go on to the next item on the agenda, which is other business. I will highlight a couple of points and then turn to Section members to see if you have anything else to add.

The first point is relative to the question asked of staff by Representative Peake earlier in the meeting regarding the white paper. I checked with Bob and Bob indicated that the staff turnover and the like postponed work on that, but he did say that he expects it to be done and ready to be provided to the Section at our annual meeting. Good catch on that, Sarah, thank you very much.

The other item I wanted to highlight is that the delegations of the three states, Maine, Massachusetts and New Hampshire, will be meeting tomorrow at lunch at menhaden to continue our discussions – they're always ongoing – regarding days out, to evaluate where we are right now with Area 1A catch, inshore Gulf of Maine catch, and do we need to make any changes in the regulations that we now have in place regarding days allowed for landing. That's tomorrow at 12:45. All right, any other business? Yes.

MS. KERNS: Just two things; one, Bob Beal just sent you guys all the judge's ruling so that should be in your e-mail inbox for the Amendment 4 case. Then, secondly, please make sure if I don't find you that you find me today if you're going to be coming to the Section Day's-Out Meeting so I can get your lunch order for tomorrow. Thank you.

MR. KAELIN: I just wanted to raise the issue again that the AP brought up asking for the Section to review whether or not the zero tolerance spawning closure should be re-evaluated. I don't know if you want to take any action on that or just let that ride. The other one is some consideration as to whether or not a days-out scenario could be established for Area 2 in the next fishing year. Those are two outstanding AP issues that the Section hasn't addressed today.

CHAIRMAN PIERCE: Thank you, Jeff. Unless anyone cares to address those issues today – Ritchie.

MR. WHITE: Mr. Chairman, this has come up a number of times and I'm still strongly opposed to bringing up the spawning issue again. It is clear that it is not enforceable in New Hampshire and therefore I strongly support the status quo. The only other thing I would bring up is Representative Peake's issue on the Nantucket Shoals and will we be going forward with a white paper?

CHAIRMAN PIERCE: The white paper will be at the annual meeting, so we will address it that time and then determine what the Section wishes to do once the white paper is in hand, of course, before the annual meeting so we'll have a chance to think about it and be prepared for any possible actions to be taken at the annual meeting.

### **ADJOURNMENT**

All right, if there is no further business, I would entertain a motion to adjourn. All right, motion to adjourn with no objection. All right, the meeting is adjourned.

(Whereupon, the meeting was adjourned at 10:10 o'clock a.m., August 7, 2012.)