

# Atlantic States Marine Fisheries Commission

## Northern Shrimp Section

*August 18, 2022  
9:00 a.m. - 1:00 p.m.  
Portland, Maine*

### Draft Agenda

The times listed are approximate; the order in which these items will be taken is subject to change; other items may be added as necessary.

- |                                                                                  |            |
|----------------------------------------------------------------------------------|------------|
| 1. Welcome/Call to Order ( <i>R. White</i> )                                     | 9:00 a.m.  |
| 2. Section Consent                                                               | 9:00 a.m.  |
| • Approval of Agenda                                                             |            |
| 3. Public Comment                                                                | 9:05 a.m.  |
| 4. Review Potential Effects of Eliminating the Summer Survey ( <i>K. Drew</i> )  | 9:15 a.m.  |
| 5. Discuss Possibility of ASMFC Relinquishing Control of the Northern Shrimp FMP | 10:00 a.m. |
| • Review Work Group Progress ( <i>D. Colson Leaning</i> )                        |            |
| • Discuss Next Steps ( <i>R. White</i> )                                         |            |
| 6. Other Business/Adjourn                                                        | 1:00 p.m.  |

**DRAFT PROCEEDINGS OF THE  
ATLANTIC STATES MARINE FISHERIES COMMISSION  
NORTHERN SHRIMP SECTION**

**Webinar  
December 17, 2021**

These minutes are draft and subject to approval by the Northern Shrimp Section.  
The Section will review the minutes during its next meeting.

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1. **Approval of agenda** by consent (Page 1).
2. **Move to continue a commercial fishery moratorium for northern shrimp and establish a northern shrimp personal use fishery in 2022. The personal use fishery will be defined as:**
  - **A two-week season of February 14-28, 2022. Traps can be set starting one week prior on February 7, 2022.**
  - **This is a trap only fishery with a three-trap limit per permit holder.**
  - **A trip limit of 1 five-gallon bucket of whole shrimp (25 lbs.) per vessel per trip per day.**
  - **The commercial sale of northern shrimp is prohibited. In 2022, convene a work group of section members,**
  - **ASMFC staff and NOAA to discuss what relinquishing management of northern shrimp looks like and associated ramifications.**

Motion by Megan Ware; second by Cheri Patterson (Page 21). Motion failed (Page 30).
3. **Move to continue the commercial moratorium for 3 years, in 2022, convene a work group of Section members, ASMFC staff, and NOAA to discuss what relinquishing management of northern shrimp looks like and associated ramifications. The Section would explore a personal use fishery at the same time** (Page 30). Motion by Dennis Abbott; second by Raymond Kane. Motion carried (Page 35).
4. **Move to have a moratorium on the recreational/personal use fishery for 3 years** (Page 38). Motion by Dennis Abbott; second by Mike Armstrong. Motion carried (Page 38).
5. **Move to nominate Senator Miramant from Maine as the Vice-Chair of the Section** (Page 38). Motion by Megan Ware; second by Cheri Patterson. Motion carried (Page 39).
6. **Move to Adjourn** by consent (Page 39).

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**ATTENDANCE**

**Board Members**

Megan Ware, ME, proxy for P. Keliher(AA)  
Stephen Train, ME (GA)  
Sen. David Miramant, ME (LA)  
Cheri Patterson, NH (AA)  
Ritchie White, NH (GA)

Dennis Abbott, NH, proxy for Sen. Watters (LA)  
Mike Armstrong, MA, proxy for Dan McKiernan (AA)  
Raymond Kane, MA (GA)  
Sarah Ferrara, MA, proxy for Rep. Peake (LA)

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

**Ex-Officio Members**

Maggie Hunter, Technical Committee Chair  
Delayne Brown, Law Enforcement Representative

Gary Libby, Advisory Panel Chair

**Staff**

Bob Beal  
Toni Kerns  
Tina Berger

Emilie Franke  
Katie Drew  
Dustin Colson Leaning

**Guests**

Robert Atwood, NJ FGD  
Vincent Balzano, Maine  
Nathaniel Burola, Maine Lobstermen  
Hsiao-Yun Chang, Stonybrook  
Matt Cieri, ME DMR  
Ethan Genter  
Jay Hermsen, NOAA  
Pat Keliher, ME (AA)  
C. Lamb, CBS 13-WGME  
Ben Martens, Maine Coast Fishermen  
Nichola Meserve, MA DMF  
Alicia Miller, NOAA

Allison Murphy, NOAA  
Chris Nunan  
Chuck Plummer  
Maggie Raymond  
Melissa Smith, ME DMR  
Harriett Train  
Rick Trundy  
Kelly Whitmore, MA DMF  
Patrick Whittle  
Steven Wilcox, MA DMF  
Renee Zobel, NH FGD

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The Northern Shrimp Section of the Atlantic States Marine Fisheries Commission convened via webinar; Friday, December 17, 2021, and was called to order at 9:00 a.m. by Chair G. Ritchie White.

### **CALL TO ORDER**

CHAIR G. RITCHIE WHITE: Good morning, everyone, Ritchie White, Governor's Appointee for New Hampshire. Welcome to the Northern Shrimp Section Meeting. I would like to call the meeting to order.

### **APPROVAL OF AGENDA**

CHAIR WHITE: Next item on the agenda is Approval of the Agenda. Are there any additions or deletions to the agenda as presented? Any hands, Toni?

MS. TONI KERNS: I see no hands raised.

CHAIR WHITE: Okay, thank you. The agenda is approved by consent.

### **REVIEW OF 2021 STOCK ASSESSMENT UPDATE**

CHAIR WHITE: Next item is a report from Maggie Hunter, Review of 2021 Stock Assessment Update. It's all yours, Maggie.

MS. MARGARET HUNTER: Good morning, everyone, this is Maggie Hunter from the Maine Department of Marine Resources. I would like to acknowledge and thank the other members of the Technical Committee, Robert Atwood from New Hampshire Fish and Game, Alicia Miller from the Northeast Fishery Science Center, Steve Wilcox from the Massachusetts Division of Marine Fisheries, with tremendous help from Katie Drew, ASMFC staff and Dustin Colson Leaning, who you've already met. Thank you all very much.

Today I'm just going to talk very briefly about northern shrimp biology, and then give a summary of some of the new data that we have since we made our last report back in 2019.

Then give you the 2021 stock assessment update results.

Northern shrimp biology, let's start with their distribution in the North Atlantic. You can see here in the Gulf of Maine, which is circled down in the lower left there, that we're in the southernmost part of the northern shrimp's range. It's considered a genetically discrete stock. On this slide it looks like it's all connected with Nova Scotia and the Gulf of St. Lawrence and so on, but it is not really. It's really a very closed system, and it is a genetically discrete stock.

In the Gulf of Maine, it tends to favor the western part of the Gulf. It likes relatively deep water, soft bottom, cold temperatures of those deep basins, and it also moves around quite a bit. In the summer you tend to find it more offshore, but in the winter the egg-bearing females move in to shore to hatch their eggs, and then that happens over the course of the winter, and then in the spring after egg hatch they gradually make their way back offshore again. The hatchlings that hatch out late in the winter will stay inshore for a year or more, and then make their way back offshore as well. They have a very interesting life history. They mature first as males, and then they function as males for a year or two, and then they transition to become females at about Age 3. They function as females. They usually extrude eggs late in the summer, early fall, and they may live to do that another year.

Their life span is only about five years, maybe six, if they make it that long. The picture on the right shows you at the top what is probably a five-year old female, and then the next one down is probably a four-year old female, and the one in the middle here might be a three-year old female. Sometimes they do mature early, or it may be a transitional.

I think the fourth one down is a transitional shrimp that is in the process, it's probably in its third year in the winter, transitioning from male to female. Then this one is a small male, or actually it is fairly large for a male. Then these two that are side by side here at the bottom are not northern shrimp, they are pandalid shrimp, they are closely related, and they are

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very similar in shape, but they are generally very much smaller than the northern shrimp.

The one on the right is a *Dichelopandalus leptocerus*, and the one on the left is *pandalus montagui*. They both have stripes, which distinguishes them from the *borealis*, which they are similarly colored, but they are just kind of blotchy. Then the one on the bottom is a crangon, a sand shrimp.

These are some of the common species and stages that we see in shrimp samples. Next, I want to talk about some new data that we have since our report from 2019. The only sort of winter projects we have had since then was in 2020 Maine conducted a very small project to test acoustic surveying, and we also coupled that with some trapping.

We are lucky to have right near our lab in Boothbay, a boat that had participated in acoustic monitoring of herring, and then later on shrimp back in 2016 and '17 with the Gulf of Maine Research Institute, and he still had his acoustic equipment onboard. What that gives you is like an echogram here that shows the bottom, which is this wiggly green and red line here. The blue speckles above it are probably shrimp.

That was tested out and shown in work that GMRI did back in 2016, '17. We contracted with this boat to make a few trips right near the Boothbay Lab, a very limited area. I'll show you that in a minute. We also contracted with some shrimp trappers to try trapping shrimp where the acoustic boat was surveying, and see first of all whether what he was seeing really was shrimp, and whether there was a correlation between what the trappers were catching and what the acoustic boat was seeing.

We were thinking about this as possibly being a tool that you could use if you've had an active fishery, and you wanted to do some kind of a mid-season check during the winter, to see if the fishing was impacting the stock, and to look

at the stock that this might be a quick and dirty way to really get out there and see what was going on. I'll show you the results. This is the area that was surveyed. Depending on how familiar you are with the Maine coast, it's a span, from one side to the other here is about 15 miles. From these blue lines are the tracks that the acoustic boat made, and from here to here across the span of his tracks is about 12 miles. This is the Sheepscot River here. Boothbay Harbor is here in the middle, and then in the east Bay up in the right-hand corner that is Pemaquid Point, and the Damariscotta River is in between there, just to orient those of you who are familiar with that area. It's not a very large area. We divided it up into three sections for our analysis, and I'll talk about that in a minute.

The first trip the boat made was in late January, and he saw a few shrimp. He started out over here where his boat is, and he made his way south and all the way to the east and then back. He did this at night, because shrimp are thought to be quite active in the water at night, but not during the day.

About a week later he went again, and he got a lot more shrimp this time, you can see. The size of those bubbles indicates how much signal he's getting. It also happened to be full moon, and as this project went on, we found that that next week he went out he didn't see nearly as many shrimp. Then the last week he saw fewer still.

During a time in February where you would think you would still be seeing quite a few shrimp, and this last trip that he made was a new moon, and it looked like there might be more of a correlation between the cycles of the moon than actually what the shrimp were doing. That may confuse things and make this difficult to do over time like this.

That is something we need to learn more about. But what the trappers were seeing show here in the red circles. The first week several of the guys hadn't started yet, and they weren't getting a whole lot. They did better the next week. You can see that especially a boat that was going right out in the mouth of the Sheepscot here that was doing very well.

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Then by the next week everybody was doing better, and the last week they were still doing quite well. But it doesn't really agree at all with what the acoustic boat was seeing. I'm afraid this project kind of posed more questions that it really answered, but it was really interesting. Some other things we learned was that egg hatch was quite early last year, and especially in the western section.

Then it was not quite as early, but still earlier than usual in the eastern section, and then it was not quite as early as that in the midsection. Between just this small span of space you had very differing results for when the timing of egg hatch was. That was really interesting, and it kind of pointed up how when you do something like this you really need to get a lot of data from a lot of different boats and a lot of different people.

This was nine trappers, by the way, I don't know if I had mentioned that. They were only allowed to fish up to 40 traps, and only one of them actually did fish 40 traps. The rest of them did about, usually about 15 to 18 traps a piece, either doubles or triples. Another thing we noticed was that the western section boats did really quite well, and the eastern section boats did well, especially as things went on.

They continued to fish into March for a while, and then the project wraps up around the third week of March. The middle section boats really didn't do very well at all. Again, just within, and these were all seasoned trappers who were experienced and had had successful commercial seasons. You know we made sure when we picked people that these were folks who knew what they were doing. It was very interesting to me that in just such a short area you have such a variation in both what the samples told you about egg hatch, and very different catch rates.

Again, it kind of points up the importance of location, location, location, and also just who the fishermen are and what they are able to do.

Of course, it is not really fair to compare these results to what they would have done if they were really commercial fishing, because they were limited in how many traps they could put out.

They were only being paid just to bring us a sample once a week, so there wasn't really an incentive to bring in a lot of shrimp. Actually, they weren't allowed to keep their catches, so incentive really for them was just that they were being paid. They're also, people have pride and they wanted to do well and they were trying to do well, but there really wasn't incentive to move their traps around a lot or do a lot of exploring.

They really weren't allowed a large number of traps to do that. Most of them were lobster fishermen who were just setting a few shrimp traps that they could fish on their way back and forth in their lobstering trips. That may have constrained where they fished as well. It's not really fair to compare those two commercial catch rates and so on.

But anyway, we learned a lot of interesting things. There is a report, and I'll be putting another report out today, the GMRI's report on the acoustic work is already out on our website, and I'll be putting DMR's report on the trapping results out on our website later today. I just wanted to let you know that that was done. I don't know how much people knew about what we were doing, but it was really interesting, and I hope we get to do some more work like that.

I'll switch over now and talk about the assessment update. Just a little history. In 2018 we presented a full assessment with the model runs and so on, and then in 2019 we just gave you a data update. We didn't do any report in 2020. There really wasn't much new to report, because most of the surveys weren't able to run that year.

For today we're presenting an updated assessment with the full model runs and so on. The report is in a new format. You may not have seen this format yet, but it's something that ASMFC is working toward to get different committees to do more standardized reports. It's also shorter, we cut out all the stuff about

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how the fishery has managed the history and description of the fishery.

We cut out all of the biological stuff, because that's all in the older report. But we do have, for this new report we now have 2020, the catches from those trappers that I just showed you. We have the 2021 Maine/New Hampshire Inshore Spring Survey. We have the Summer Survey, environmental data and we have the Fall Survey from the Science Center data, but we only have that through 2019, because it didn't run in 2020, and we don't have those results yet from 2021.

We also, for other data that go into the assessment, we use the landings data. We use port samples from the landings, and we also use these winter research project catches and samples from those in the assessment. We also used the fishery independent data, we collect environmental data such as temperature and the predation data from the fall plenteous surveys, environmental data from several sources. We used the resource surveys I've already mentioned summer survey. The time series we're looking at is 1984 to 2021. For the fall survey we're looking at '86 through 2008, and then in 2009 as you know, the vessel changed from the Albatross to the Bigelow.

That is a new time series for us, because the gear and the boat were so different, and there wasn't any comparison close to make between the old boat and the new boat for shrimp. We're considering those as two separate surveys in the assessment. We also look at the Maine/New Hampshire Survey, and that starts with a 2003 Survey.

We used model-based indices that are standardized for habitat, something new we started doing around 2018. None of these surveys were conducted in 2020. The Summer Shrimp Survey, one thing that's new with that since we talked the last time was that they got new doors and winches in 2017.

The big old heavy Portuguese doors were replaced with Bison doors. We had some good advice from some fishermen on the design of the doors and what to get for the size of the net that we were using. The Portuguese doors are really kind of oversized, and had to get advice on how to deploy those and rig those new doors.

I think you'll see; in a minute I'll talk a little bit more about that. But we did manage to do between 2017 and 2019, 39 paired tows, where we towed with the old doors and then switched out and towed with the new doors, and back and forth. We were able to compare the results. Thank you to Miller and Peter Chase who analyzed the data for us.

Their report is in the appendix to our assessment, and they concluded that there were no significant differences in catch efficiency between the two types of gear. That is helpful to us. It means we don't have to make any calculations to try to configure the two surveys. We don't have to treat them as two surveys, because there didn't seem to be a difference between them.

That makes our job a little easier. Part of the assessment is to run a model that was developed at the University of Maine several years ago. It's based on the lobster model that they made. It's been peer reviewed in journals. It passed review by the Stock Assessment Review Committee in 2018. It was approved for management use by the Section later in 2018.

We also use a traffic light approach presenting the data in which green is going to represent favorable conditions for northern shrimp, red is going to be unfavorable, and yellow is just intermediate. We define those categories by comparing with the 1984 through 2017 time series, for whichever variable it is that we are looking at.

You'll see that in a minute. The 2021 survey, it was a shortened survey because of COVID restrictions, but they did get 60 useable tows, which was really good for a short survey. I think those new doors are helping. We're not getting cross-doors, we're not getting the mud tows that were wasting time, because

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we used to have to do them over again. We didn't keep any data when that happens, but we had to admit we weren't able to either get in as many tows, because we had to do them over, so that has been really helpful in getting more good data in the survey. I'll just jump right in here with the survey results from the Summer Survey. Here is the traffic light approach for survey abundance from 1984 to 2021. You can see in the recent 9 or 10 years it's just been way below average.

The 2021 point was a new time series low for shrimp abundance, and the graph down below is biomass, which tracks abundance pretty closely. You can see the results are very similar, are also a new time series low for northern shrimp biomass in the Gulf of Maine in 2021. Spawning stock biomass, which is just the female portion of the biomass, the 2021 value was the second lowest in the time series.

Recruitment was also low in 2021, there was a new low for recruits, which are the number of shrimp in the samples that we see that are those small male, probably about a year and a half old. You can see there were a couple of years here where we got up into the yellow recently, but it was still below average. It's been below average for 9 or 10 years now.

The Fall Survey gave much the same message, but we only have it through 2019. We have the Albatross Survey you can see here in the top, ended in 2008, and then it picked up again as the Bigelow Survey. You can see that the stock declined pretty drastically between 2010 and 2012. Then it's been running real low since then, only through 2019.

Environmental conditions, we looked at several different sources in the upper right here on your screen. I'm just going to talk about temperature first, so in the upper right we have the bottom temperatures from the Summer Survey. You can see that they've been in the red quite a lot. These graphs, the red you see at the top rather than at the bottom, because high

temperatures are unfavorable for northern shrimp.

You can see the value in 2021 was quite warm. Down in the lower left we have the temperatures from the Spring Center Trawl Survey, and again 2021 was a very high number. From the Boothbay Harbor Sea surface temperature measures during February and March, which is when the shrimp eggs are hatching. It's a fairly critical period for them. You see that's been way above average warmth too. Temperature data continues to show unfavorable conditions for northern shrimp.

The only sort of glimmer of good news here is the predation numbers, and that's in the upper left-hand graph here. The last two or three years the predation on northern shrimp has been down, in fact it was slightly below average in 2019, which is the last point that we have available right now. That is a little bit of good news for northern shrimp. We ran the model and I'll just give you a few results here.

Obviously fishing mortality has been extremely low since the moratorium went into effect here in the first year in 2014, and fishing mortality has been very low since then. A little bit of a blip here in 2017, when we had 32 metric tons were caught by the winter research fisheries. But as you would expect, fishing mortality has been very low. The spawning stock biomass has also been low for the last 8 or 9 years. A little bit of an uptick in 2021, but it's still very low. I think that may be responding to the drop in natural mortality and predation. But again, it's not a big change and it's just running very low. We estimate the spawning stock to be about 887 metric tons in 2021. I just want to get back to the surveys just to mention one more survey that I haven't talked about much. I've already talked about this black line, which is the Summer Survey, and the fall survey, which is this yellow line here that turns into the blue line here for the Bigelow Survey.

But there is another survey, the Maine/New Hampshire spring survey, the inshore spring survey we look at as well. This is the green line here that went up a little bit. It stayed high a little bit longer than the other surveys did, and then it has dropped as well, and

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this little green plus sign here is the 2021 value, which I think was the second lowest in its time series.

That's a survey that is conducted on an industry vessel by Captain via a shrimp fisherman, so they are seeing the same thing, unfortunately, that the other two surveys are seeing, which is very low abundance in the past nine years. In conclusion, the status of the stock continues to be poor, the spawning stock and total biomass are low and have been for nine years.

Recruitment has been what we call a recruitment failure in six out of those nine years, and the other three years were well below average. That is the Technical Committee's conclusion on the status of the stock. I'm going to stop there and take any questions you might have, anybody.

CHAIR WHITE: Thank you, Maggie. Excellent report, and obviously difficult data to receive. I'll start by questions from the Section to Maggie, and Toni, if you could tell me the hands raised in the order that you see them that would be helpful.

MS. KERNS: We'll do, Ritchie. So far, I don't see any hands up. I have Megan Ware.

CHAIR WHITE: Okay, Megan.

MS. MEGAN WARE: This is more of a question about the surveys in general, and specifically the Summer Survey. But I was just curious if there were any updates on future funding for that Summer Survey. I know that's been in question. I didn't know if we had any recent information on where that stands.

MS. HUNTER: Sorry, I don't, this is Maggie. Does anybody else on the call have any information about that?

MS. KERNS: I haven't heard anything, but Bob Beal has his hand up.

EXECUTIVE DIRECTOR ROBERT E. BEAL: Is that okay Ritchie, if I chime in?

CHAIR WHITE: Absolutely, go ahead, Bob, thanks.

EXECUTIVE DIRECTOR BEAL: Yes, I talked to John Hare maybe a month ago, and he said that continued funding for the survey is going to be very difficult. The Science Center itself is struggling to cover all the surveys that they fund, and this is one that is frankly on the chopping block. It sounds like there is one more year of funding most likely, you know the summer of 2022, and after that it's very much up in the air what is going to happen. Even 2022 is dependent on a new budget being approved by Congress. I think if we have a continuing resolution throughout the entire federal fiscal year, there is a high likelihood that the survey may not even happen in 2022, unfortunately.

MS. WARE: Okay, thank you very much. I appreciate that. I just want to say, I give my compliments on the new stock assessment format, it was really easy to digest and read, so I appreciated that.

MS. KERNS: Ritchie, you have Cheri Patterson followed by Ray Kane.

CHAIR WHITE: Go ahead, Cheri.

MS. CHERI PATTERSON: My question, if you can go back to where you had the predation slide that showed that the predation was lower. Yes, thank you. Are squid included in that predation pressure index?

MS. HUNTER: No, they are not. Squid are tough, because the predation pressure index is based on both the abundance of the predators, and also what the likelihood that they will have shrimp in their stomachs from historical stomach contents analysis that has been done. But there haven't been the stomach analyses on squid, because they grind up their food and it's kind of unrecognizable in their stomachs.

We did attempt to add a squid index, and that's one of the sensitivity runs in the report. I'm trying to remember whether it's in the appendix or in the main section. It's in the main section of the report, so we

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just assumed that they would have sort of an average likelihood of having shrimp in their stomachs an average of what we were seeing in the other predators.

We only had an index of abundance for them, I think from 2003 to 2017 that had been worked up by Anne Richards for us. It increased the predation during that 2011 through 2013 period. It increased mortality. But it didn't really change too much. I might ask Katie Drew if she wants to hop in and discuss that a little bit more, I'm having trouble remembering just what the impact of adding the squid to the predation index was.

DR. KATIE DREW: Yes, sure, Maggie. I think you covered it for the most part. Obviously, there is difficulty in kind of combining them with the more standardized data that we use in the base-case predation index. Then while it did increase predation during that period, where we think there was a lot of inshore overlap with squid and shrimp in the Gulf of Maine related to that really sharp decline we saw.

After that really high peak in shrimp abundance it didn't overall, you know I think it made the SSB slightly lower in the more recent times, but did not have a significant effect on either the performance of the model or the overall scale or trend of the model. But for sure that's something we might want to look a little at more closely if we're able to get data that makes the squid data more comparable to the finfish data that we're using for the base-case predation index.

MS. PATTERSON: Thank you very much, that answers that.

CHAIR WHITE: Ray, you're up next, and I would also like to say if your time schedule allows, and you would like to resume the Chair, I would be more than happy to turn over the reins. Go ahead, Ray.

MR. RAYMOND W. KANE: I would like to thank the presenter once again, and at our last meeting, Ritchie, I believe you were co-Chair, and I turned out. I don't know if it's been announced, but I believe you are the new Chairman. That being said, I have a question to Bob Beal. A number of years ago we had revenues or what we called up-funding at ASMFC. I'm hearing a concern about the lack of trawl surveys in the future. Is there any of those revenues still available, Bob in the up-funding?

EXECUTIVE DIRECTOR BEAL: The short answer is no. There was that plus-up, I think it was in 2018 of a few hundred thousand, and all that funding has been spent on other projects. We could look around for money, but as of right now we don't have any extra funds that we can set aside for the shrimp survey.

MR. KANE: Thank you, Bob. I'm good, Mr. Chairman, thank you.

CHAIR WHITE: Thank you, Ray. Any additional hands?

MS. KERNS: We have Steve Train.

CHAIR WHITE: Steve, you're up.

MR. STEPHEN TRAIN: Maggie, thanks again for a great presentation, as normal. I have a question about the predator effect/temperature effect and natural mortality versus fishing pressure. Have there been any of those studies that you've done applied to where the population was during years of fishing seasons versus opposed? You know what was the offset, what was the difference? How much did fishing pressure really effect the population versus the natural predation and the temperature/environmental conditions?

MS. HUNTER: That's a good question. Katie, can you help me out again?

DR. DREW: Sure. I would say, so we include the predation index for the entire time series in the model, so the model is getting information on what is happening with natural mortality, as well as fishing pressure for the entire time series. Then when it comes to the environmental side, basically the

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important linkage there seems to be that warmer waters lead to poorer recruitment.

You can see, and so while the model doesn't necessarily know what's happening with that temperature, it can see what's happening with the recruitment. What you see with the model is that you do see that shift from fishing pressure having an effect, along with kind of a lower natural mortality working sort of, I would say together, as well as working with those cooler temperatures to have variability in recruitment, and to have variability in spawning stock biomass, et cetera, affected by both fishing mortality and natural mortality, and environmental conditions. But as the time period has progressed, and natural mortality has increased, and temperatures have increased, and fishing pressure has decreased. Those external factors, those natural factors of temperature and predation are having more of an impact on the stock, and the stock is seeing stronger lows in the recruitment, as well as continued increased predation pressure that seems to be impacting the ability of the stock to sustain itself, even at very low levels of fishing pressure.

There does seem to be sort of a shift over time, as these conditions have worsened. Where prior to this, fishing pressure and natural mortality were sort of working together on the stock to control the stock, and both were having an impact on the stock dynamic. But more recently, it seems to be predominantly driven by environmental conditions, including that predation effect.

MS. HUNTER: Thanks, Katie. I think you'll also see, Katie is going to present some projections in a few minutes using different levels of fishing pressure and natural mortality, so you will be able to see the impacts of both in those projections.

CHAIR WHITE: You all set, Steve?

MR. TRAIN: Yes, thank you.

CHAIR WHITE: Toni, any other hands?

MS. KERNS: I don't see any other hands from Section. Actually, no other hands.

CHAIR WHITE: All right, I'll open it up to the public. Any in the public that has a question?

MS. KERNS: I'll give it one second for the public to have an opportunity to put your hand up. For the members of the public that have not been on this platform. If you just click on the icon that looks like a hand, you should be able to raise your hand, and currently there are no hands up. I have a hand here from Chuck Plummer.

CHAIR WHITE: Chuck, go ahead, you've got the floor.

MR. CHUCK PLUMMER: I'm from South Bristol, which is the eastern side of where the trap fishery, where they collected data two or three years ago for the DMR. You know what I'm hearing is there might not be any money for the trawl survey. I sort of just would like to put it out there that if they couldn't maybe the trap fishery could collect data this year.

I don't think people would need to be paid, but if they could just keep what shrimp they caught and report the data back to Maggie. I mean at least so there would be some type of data coming in, I mean that's what I would like to see is just a limited trap data type of scenario, so thank you.

CHAIR WHITE: Thank you. Maggie, would you like to comment on the type of data that that type of a proposal would produce.

MS. HUNTER: Sure, we always like to get more data. We have found that very limited winter research projects with just a few people, the data are kind of hard to interpret because location is so important, and your choice of the fishermen is important. If you were going to do something like that it would be best if it were pretty widespread, I think. Thanks, Chuck, nice to hear from you.

MR. PLUMMER: Thank you, Maggie.

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CHAIR WHITE: Thank you both. Toni, any other hands?

MS. KERNS: I don't see any other hands at this time, Ritchie.

**MANAGEMENT STRATEGY WORK GROUP  
UPDATE**

CHAIR WHITE: Okay, we'll move on to the next agenda item, and this will be the Management Strategy Work Group Update, Cheri.

MS. PATTERSON: I am going to turn it over to Dustin, as he is the one who put together the presentation. But I can also answer any questions, as well as Dustin at the end. Thank you.

CHAIR WHITE: Dustin, go ahead.

MR. DUSTIN COLSON LEANING: Thanks, Cheri, thank you, Mr. Chair, I'm just getting my PowerPoint set up. All right, you should be able to see it now, the title screen.

MS. PATTERSON: Yes, Dustin, we can see it, thank you.

MR. COLSON LEANING: All right, well as it has been introduced, I will be covering the Northern Shrimp Management Strategy Work Group Update, and then Cheri will help me with facilitating questions and discussions on that. I'm going to bring your memory back to November, 2018, when this Work Group was first tasked by the Section.

This is when the motion was made to move to establish a work group made up of Section and Plan Development Team members, to adjust management strategies based on ASMFC policy regarding changes in species abundance, and distribution resulting from climate change. It took a little while to get this work group underway, as there were staff transitioning.

But we did meet four times through 2020 and 2021. Essentially, this work group was looking to address the ongoing issue of the stock status combined with the fact that it can be fairly unresponsive to the moratorium. As Maggie just presented on, the 2021 stock assessment update indicates that the stock remains depleted, and this is despite the fact that the fishing moratorium has been in place since 2014.

We're currently looking at the three-year moratorium that is schedule to expire in this year. Essentially, the stock has been unresponsive to decreased fishing mortality, and the Section will need to either continue the moratorium, reopen the fishery, and set specifications for 2022, or consider a new management strategy, which takes into consideration the biological, economic and cultural importance of the stock. Determining an appropriate management strategy is challenging, given the stock status and how it remains very poor and at low levels, even under the moratorium, even with one of the most restrictive management tools that the Section has at their disposal. With this tasking, the Section met and came up with a number of different management scenarios for Section consideration.

I'll introduce them here and then over the next few slides explain a little bit more about them. There is the continuation of the fishing moratorium, a personal use fishery, a commercial fishery that operates under the existing fishery management plan, and an economically driven commercial fishery.

In the briefing materials there was a table that presented a number of challenges and benefits of each approach, as well as some considerations, some ongoing questions for fully fleshing any of these concepts out. We'll start off with the continuation of the fishing moratorium. Essentially the current moratorium would remain in place, and we would continue to monitor for signs of improving stock health.

As has been discussed earlier at this meeting, one of the biggest questions is will survey funding continue. With the Summer Survey being a very important factor for determining stock health, there would need to be some considerations about what other survey

data would there be sufficient data already out there to continue to monitor the stocks status.

Another challenge with this approach is with the fishery in a moratorium, there is economic value lost, and the cultural heritage of this important and much-loved fishery is, you know lost with just the continuation of that moratorium. There are benefits, however, namely the ecosystem benefits that shrimp provide as forage.

They support a number of different valuable commercial finfish, as we know with the different predation that occurs on this stock. The moratorium offers the best chance of rebuilding, and it aligns with Magnuson-Stevens Act National Standard 1. I've included National Standard 1 below, but essentially the concept is, maintaining conservation in management measures that give the stock the best chance to rebuild and prevent overfishing, and bring a stock out of an overfished state.

Moving on to the personal use fishery concept. In other words, this would be a personal consumption only fishery, with no commercial sale of shrimp. This could be accomplished in a number of ways, but the Work Group kind of honed in on potentially a trap only fishery, with a small possession limit and a limited season.

One of the challenges with this approach that is consistent with some of the other options that is considered, is concerns about National Standard 1, whether this aligns with that standard. There are also concerns about enforcement, since it's a personal consumption only fishery with no commercial sale of shrimp. It might be challenging to prevent peddling from occurring.

Then another consideration is controlling participation. Each state would need to figure out how to administer their permitting or licensing. There are benefits with this approach, as I've talked about earlier. There is cultural value in opening the stock up again in

New England. This one, this management approach has the potential to have a smaller impact on the stock, which is beneficial. The third alternative that was discussed was the commercial fishery operates under the existing fishery management plan. This would be a very limited fishery compared to what had previously been implemented, just as a result of the size of the stock.

But we would continue to use existing management tools, such as fishing seasons, trip limits, trap limits and days out of the fishery that have been specified in Amendment 3 and Addendum I to the FMP. There are challenges. There is likely to be a negative impact on the stock. Katie will be going over projections later on, and so that will be a little bit more apparent after we review that.

Again, there is National Standard 1 concerns, and this also would conflict with the rebuilding plan, and giving the stock the best chance to rebuild. There are benefits, however, there will likely be some economic benefits, although revenue might be limited by just the depleted nature of the stock.

There may be opportunities to have fishery dependent monitoring and data collected that would increase the understanding of the stock. Then also this fishery would provide a diversified income stream for harvesters who may be fishing less for other species during that time of the year when this fishery is usually persecuted.

Then lastly, the workgroup talked about the economically driven commercial fishery. Essentially, harvesters would decide their own level of fishing effort. This would be based on a personal calculation of the cost of fishing weighed against the revenue they expect to earn. We imagine that it would likely be a little bit of a trial-and-error period, where fishermen see how well they can do, and then depending on their harvest, they determine whether it's worth going out again.

There would be very limited use of traditional management measures. It would be more of a hands-off approach. Clearly, there are some substantial concerns about Magnuson-Stevens Act National

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Standard 1 with this approach. The greater risk of further depletion of the stock, as well as the potential loss of ecosystem services.

Not only do finfish rely on the stock, but there is likely other marine mammals and other animals that rely on shrimp to support the ecosystem. There are also benefits to this approach. It is a simple management scheme. There may not be as much administrative burden and resources that are needed to run this type of fishery, and it would maintain fishery access.

After discussing these different management scenarios, and talking about considerations, things that may need to be fleshed out further. The Work Group discussed with the TC a little bit more of a detailed report, which is available in the briefing materials. I'm happy to answer any questions on that.

But essentially, the Work Group wanted to put forward these four options, but prior to just letting the Section discuss all of them in equal terms, the Work Group did want to acknowledge that they do not recommend the economically driven commercial fishery option. I've kind of already covered the big reasons, but to reiterate them here, it's the greatest threat to deplete the stock further. It lessens ecosystem services that shrimp provide, and then there are also concerns about National Standard 1, given that part of the fishery operates in federal waters. I've definitely gone over some of these items pretty quickly, so if you have any questions, feel free to ask Cheri and I.

We have a number of other Work Group members on the call, and I apologize that I actually didn't identify them in the presentation. But we also have Megan Ware, Kelly Whitmore, Ray Kane sat in on a number of meetings, and of course we had Cheri, the Chair, and Toni joins the meetings as well. With that, Mr. Chair, I'll turn it over to you and the Section.

CHAIR WHITE: Thank you for the report, any questions, Toni, from the Section?

MS. KERNS: Right now, we have Dennis Abbott.

CHAIR WHITE: Dennis, go.

MR. DENNIS ABBOTT: Thank you, Ritchie. Could we have some elaboration on the conflict with the National Standard 1, a little further explanation how that would play out?

MR. COLSON LEANING: Yes, so the Work Group discussed this, and part of the reason we actually invited Allison Murphy to join, was that it's a little bit unclear as to the exact conflict. Seeing as the Commission doesn't necessarily, the FMPs don't necessarily fall under the National Standard Guidelines there is that kind of take on it. But then also, seeing as there are portions of the fishery that operate in federal waters, it was a little unclear as to the full extent at which it would apply. I might maybe turn it over to Alli or Toni, if they have anything more specific to provide.

CHAIR WHITE: Yes, Alli, are you on the call, could you answer that question? It would be appreciated.

MS. ALLISON MURPHY: Thank you, Section, and Mr. Chair for the question. Yes, I think Dustin did a pretty good job of talking about the National Standard and how we apply National Standard 1 for our Magnuson managed fisheries. I think here, because I think historically a good portion of the fishery is prosecuted in the EEZ in federal waters.

Our advice has been that the Commission, you know while they don't regularly follow the Magnuson Act and apply the National Standards. Here it would be appropriate because of that overlap with federal waters, and in doing so it would prevent the possibility of any preemptive action by the New England Council or us, if there was a disagreement in a decision by the Section.

CHAIR WHITE: Any Section members have questions for Alli? Dennis, did you want any follow up?

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MS. KERNS: Ritchie, could I just add one additional thing? Is that okay?

CHAIR WHITE: Sure, absolutely.

MS. KERNS: One of the reasons we originally brought the question to NOAA was that there is that exemption permit for the smaller mesh for the trawl fishery that coincides, I think, with certain groundfish fisheries that the shrimp trawlers get. We wanted to make sure that whatever we did moving forward would not impact those exemption permits. That's another reason why we brought that question forward to NOAA.

CHAIR WHITE: Dennis, are you all set?

MR. ABBOTT: Yes, I think so.

CHAIR WHITE: Toni, any other questions?

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

CHAIR WHITE: Next on the agenda would be Katie Drew with Projections.

### **SET 2022 FISHERY SPECIFICATIONS**

DR. DREW: Great, thanks, Mr. Chair. Let me make myself presenter here.

### **REVIEW PROJECTIONS**

I'll just be going over some of the projections that we did as a result of the stock assessment. We did both long term projections and short-term projections for this, where long term was 50 years, projecting the population out to see kind of what would happen under different natural mortality and recruitment scenarios, where fishing mortality was held at 0.

Then we did short term projections, which were only five years out, looking at different natural mortality and recruitment scenarios, as well as some different fishing mortality scenarios. Both fishing mortality set to 0 and also a couple of

different options of low fishing mortality levels. The M scenarios that we looked at were the recent natural mortality, meaning the mean of the last five years of observed natural mortality, so 2015 through 2019, as well as sort of the time series mean of the entire 1984 to 2019 series of observed natural mortality.

This is the predation pressure index that we use to scale natural mortality, so the average is set to 1, because it's scaled to the long-term average, and then the recent time period is this higher level of predation pressure. The last two years of the data, 2020 and 2021 are not observed. We get the predation pressure index from the Northeast Fishery Science Center's fall trawl survey, which is usually a year behind our assessment, because the fall series is usually happening as we are doing the assessments.

Of course, it did not occur in 2020, so these two points here are the average of the last three years of the observed predation pressure index, and they weren't used as part of the recent time period, we just focused on the five years of observed data. What you can see is this basically shifts the time series natural mortality.

Mortality is a function of shrimp length, so the smallest shrimp have the highest natural mortality, and it follows that Lorenzen Curve down where larger shrimp have lower natural mortality rates. The time series natural mortality is in yellow with the triangles here, and then the recent natural mortality has been higher for all sizes of shrimp. Similarly, for recruitment, we used the most recent 11 years of observed recruitment from 2011 to 2021. The time series recruitment was based on the median and standard deviation of the entire time series of observed recruitment.

If we look at the recruitment deviations that the model is estimating, you can see that from 2011 to now we basically have a period of below average recruitment. We've been in this low recruitment regime, and that was used to inform the most recent period of recruitment for these scenarios, versus using the entire time series and drawing from a distribution of this entire time series.

Again, if you compare the sort of distribution of recruitment that we're using to run these scenarios,

you can see that the time series value is this orange distribution that is centered around the higher value, and has more higher values and a wider range of values than the recent recruitment, which is centered around this lower recruitment level, and is a more narrow distribution.

Those are the two recruitment scenarios, M and recruitment scenarios that we used, and we used a combination of these scenarios to get four total scenarios, where we're looking at your time series natural mortality and your time series recruitment, which is a scenario that has the lower natural mortality and higher recruitment.

The time series natural mortality and the recent recruitment, which is a lower natural mortality scenario, but also a lower recruitment scenario. The recent natural mortality scenario and the time series recruitment, which is kind of that flip-flop of it's the higher natural mortality scenario, but a higher recruitment scenario as well.

Then the recent M and the recent recruitment scenario, which gives you that higher natural mortality and lower recruitment scenario. When we do these long-term projections, you can see that the population stabilizes over time. In the gray and black here we have sort of the time series of what the population has done in the past, down to the terminal year of the assessment in 2021, and then projecting out for another 50 years.

You can see that the population stabilizes, but where it stabilizes depends on your assumptions about natural mortality and recruitment. Again, with the long-term projections we're using no fishing mortality, so this is just if you leave the stock alone, where is it going to stabilize? If we're able to return to your average natural mortality and your average recruitment, then the population will stabilize somewhere around where it stabilized in the past, which is this yellowish bar up here.

But if we continue at our recent levels of natural mortality and low recruitment, the population is going to continue to decline, but stabilize at low levels below where we are in 2021. Then if you kind of end up somewhere in the middle, in terms of lower natural mortality, but also lower recruitment or higher natural mortality but higher recruitment, you'll stabilize somewhere in between those two extremes. If we zoom in a little bit on those long-term projections, you can see this sort of happening. You see that divide from the beginning of the projections in 2021. Whereas you have higher recruitment coming into the population, the population begins to recover, whereas if you keep kind of that lower recruitment and lower natural mortality, the population continues to decline even in the short term. For the short-term projections, we used the same M and the same recruitment scenarios, but we looked at three different F scenarios.

The first scenario was no fishing mortality at all, F equals 0. The second scenario was based on the average fishing mortality of what we're calling the research period, which was basically 2014 to 2018, and that was a very low F of about 0.0224 split between the trap and the trawl fishery, based on sort of the historic proportions of fishing mortality that both of those fleets contributed during the active fishery period.

Then the third option was a slightly higher F that was the maximum F we saw during the research period, but only using the trap fishery. I think what you can see here is we've broken up. This is the trajectory of the median spawning stock biomass for each scenario, so each panel is a scenario, and then each line is an F rate.

What you can see is what's really driving the trend of the population is not really the F rate, but what level of M and recruitment we would expect to see. This is the same as we saw during the F equals 0 long term projections that with the recent natural mortality and recent recruitment levels, the population will continue to decline with both 0 and low levels of fishing.

Whereas, reversing one of those trends, having either lower natural mortality or higher recruitment, will

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allow the population to start to rebuild a bit. Having both lower natural mortality and higher recruitment gives you a strong positive trend. This is where we start to see some differences in the fishing mortality rate having an impact on the results, where the  $F$  equals 0 is recovering slightly faster than the scenarios that have some level of fishing mortality.

If we look at sort of what's your probability of being above SSB, those lines were just based on the overall central tendency of the projection. I think what you can see is that the probability of being above where we were in 2021 is basically less than 1 percent for your current conditions. Whereas, as your conditions improve under better natural mortality and better recruitment scenarios, the probability of being above where you were in 2021 increases.

You do see a little bit more of an effect of those fishing mortality rates, where the  $F$  equals 0 is having a higher probability of recovering and recovering sooner, or increasing and increasing sooner than the values with the low, even the slightly low  $F$ . In terms of kind of what you can expect out of a fishery under these  $F$  scenarios.

This table is just focused on recent natural mortality and recent recruitment, because we think those are the most likely conditions to persist in the near term, in the next few years. Comparing your 2022 catch with your 2026 catch, so the catch at the end of the projections, and comparing your 2021 SSB with your 2026 SSB, so where you started and where you end up.

You can see in all of these scenarios, from  $F$  equals 0 to  $F$  equals 0.5, you do end up at a lower SSB than you do in 2021, and your overall catch also declines over this period. These projections are based on keeping a constant  $F$  rate applied to the population, and therefore, as the population declines, you're taking a smaller and smaller amount out of that population, in order to maintain that same  $F$  rate. For the  $F$  equals the average of the

research period, you're starting out at about 7.9 metric tons in both fisheries combined, and then you end up at about 4.8 metric tons for both fisheries combined. Under the  $F$  equals 0.05, that's the maximum of the research period applied only to the trap fishery. You start out at about 21 metric tons, and then decline to about 11.9 metric tons, in order to maintain that constant  $F$ .

If you are maintaining a constant catch, your catch would remain the same but your  $F$  rate would go up, and your spawning stock biomass would decline further as you take out a higher and higher percentage of the population with that constant catch. I'm going to pause here before I move on to recommendations, and see if there are any questions about the projections. But if not, I can move on to the TC recommendations.

CHAIR WHITE: Okay, any questions for Katie on this section?

MS. KERNS: Mr. Chair, you have two hands raised, Mike Armstrong followed by Steve Train.

CHAIR WHITE: Okay, Mike, go ahead.

DR. MICHAEL ARMSTRONG: Katie, could you refresh, I think you said it at some time during the presentation.  $M$  is calculated how? Is that based on the predation index?

DR. DREW: Yes. We used sort of a baseline Lorenzen Curve for shrimp, so basically based on the size of shrimp, and we calculate what natural mortality is, and that is what gives you that declining curve of going from high natural mortality on the smaller shrimp to lower natural mortality on the older shrimp.

The natural mortality at the oldest shrimp, sort of in your base case, is set at 0.25, which is what the value is that we actually had measurements of when we did some empirical studies back in the day. That curve then is shifted up and down over time, by multiplying by the predation pressure index. That is a combination of what size the shrimp are, and then combined with the level of predation the population is experiencing.

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DR. ARMSTRONG: Great, thank you.

CHAIR WHITE: Okay, Steve, you're up.

MR. TRAIN: Thank you, Dr. Drew. I have a couple of questions for you, if you don't mind. One is, why did you not run heavier fishing pressure studies, considering traditionally the fishery was a lot more than the last few years while we were shut down, just to see what the numbers were? Second question is, on I believe your last two slides, where would the error bars be on those numbers? Is the catch tonnage within where the error bars would be if they were shown on the chart?

DR. DREW: For the first question. We didn't run any more aggressive catch levels, because we weren't sure what the Section's feelings or thoughts on that were, in terms of our understanding was that the Section was considering potentially a small level fishery, but was not considering going back to a full active fishery, the way we would have seen in the past. Given the fact that even under no fishing pressure, under the current conditions we saw the stock declining. We didn't feel there was a lot of information in that.

If the Section is interested in seeing alternative scenarios, we can definitely redo those projections and bring them back to you with higher or lower levels of F. This was just based on kind of our understanding of what the Section was considering at the time. In terms of like the error bars, I'm not sure what you mean by. This is showing what the probability of being above SSB or not, so this is based on the number of runs.

In some of these runs you do have a small probability, even under recent conditions, you do have a small probability of being above SSB in 2021. For example, if we have a few good year classes come through, you know in some of those runs, a few unusually good year classes, there is a low probability that the stock will increase, even with low fishing mortality rates.

In terms of, I think maybe you're asking on this table, like is 436 and 423 within the confidence bounds of that 444 metric tons. Yes, I would say most likely these trajectories would overlap a little bit, in terms of, you know is 436 that different from 444. We did not look at sort of, I don't have the confidence intervals to show you on that here.

But definitely there is a little bit of overlap between kind of the F-0 scenario and these low levels of F that if you have more positive environmental conditions, resource conditions, more positive recruitment over the next couple of years, then you could end up in a situation where these are roughly equivalent SSBs. Is that what you were trying to get at?

MR. TRAIN: I believe so, confidence intervals I think when I looked at a chart. We used to put them all on there years ago, and we called them error bars. You know you threw the line down through the middle. I think you've called them confidence intervals, but they are the same thing. Thank you for your answers.

CHAIR WHITE: Okay, Toni, any other hands?

MS. KERNS: I don't see any other hands at this time, Ritchie.

CHAIR WHITE: Okay, Katie, if you would proceed that would be great.

#### **TECHNICAL COMMITTEE RECOMMENDATIONS**

DR. DREW: We'll go on to the TC recommendations, which are very straightforward. The TC recommends that the moratorium on all fishing be extended, including the moratorium on research trips. This is because of the poor stock status and resource conditions, so we're talking low abundance, unfavorable environmental conditions, and high predation levels.

The TC doesn't see a biological justification for harvest, based on kind of the FMP objectives, which are to maintain shrimp stock at a sustainable level that will support a viable fishery, and minimize the impact on the other resources, such as shrimp predators. We didn't see any levels of fishing mortality that would not cause the stock to decline

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further. Recognizing that even in the absence of fishing and the current environmental conditions, the stock will continue to decline. We didn't think that we could define any fishery as sustainable and producing a viable fishery, as well as the benefits that shrimp provide as prey would be impacted by accelerating that decline through harvest. That is the TC recommendations, and I and/or Maggie, or other TC members can provide some additional comments on this if people have questions.

CHAIR WHITE: Okay, thank you, Katie, that was very thorough, as usual. Just to go back to your two recommendations. I have a question.

MS. KERNS: I don't have any hands right now, Ritchie.

CHAIR WHITE: Okay, I have a question, if you could go back to the last two recommendations on the last slide. Katie, this would then include a recreational limited pot fishery for personal use that would provide small amount of mortality, but would provide some mortality. Your recommendations would include that type of fishery as well.

DR. DREW: Right. The TC feels that given the current FMP objectives, there is no level of fishery that meets those objectives. I think the question of how the Section wants to define sustainable, or viable fishery, or minimizing impact on other resources. That kind of risk and uncertainty question starts to move into more what the Section is comfortable with, and what they feel the objectives of the Plan are. The TC doesn't feel there is a biological justification for increasing removals at any level.

CHAIR WHITE: Okay, thank you. Any other questions? Okay.

MS. KERNS: One second, we have a hand raised from a member of the public. I don't know if you're taking.

CHAIR WHITE: Yes, I will. I was going to wait until we had actual chance for Advisory and a motion, but if a hand is raised let's take it from the public.

MS. KERNS: It's Chuck Plummer, and hold on one second, Chuck.

CHAIR WHITE: Go ahead, Chuck.

MR. PLUMMER: I can wait if you want me to.

CHAIR WHITE: No that's fine, you're on. Let's go ahead and ask it.

MR. PLUMMER: This shrimp, it's been managed for you know 7 or 8 years with no fishing whatsoever, and it's at a level that fishing mortality hasn't affected it. But I would really like to see, you know a limited trap fishery of say 10 shrimp traps per person, or something, just so we have an idea of what's happening, because that's what I would like to see. I mean they can put a quota on it or whatever, but that is what I'm hoping for. Thank you.

CHAIR WHITE: Okay, thank you, Chuck. We'll be getting to that when we do the specifications. There will be motions, various options, and I'm certainly going to allow the public to comment on those options. But thank you in advance for that.

#### **ADVISORY PANEL REPORT**

CHAIR WHITE: Next is Mr. Libby for the Advisory Panel Report.

MR. GARY LIBBY: Dustin had a PowerPoint for me he was going to bring up. I'm just going to read through it and then let them know what we did. We held a meeting yesterday. We only had four members in attendance. We got the same stock assessment review you all did today, which we pretty much felt the same way you're feeling, probably.

Recognizing that this moratorium, where we've had a flat line over the last few years, doesn't seem to be working very well as a stock rebuilding thing. We went into a long conversation about what we could do about that. It ended up the AP was supporting a survey of commercial harvesters like, just have

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fishermen go out and do it instead of spending the money for the survey.

AP members could conduct the survey more efficiently, we felt, because that is where a lot of the fishermen in the talk around the dock that I hear. As soon as they hear how the survey comes out, they go what, how can that be? We thought if fishermen had a hand in it, they may feel that the survey results or any results that come out and they had a piece of it, then they would understand that it was in poor shape or good shape, or whatever shape it ends up being.

That leads right into this last point, where we question whether the survey is accurate or healthy. Some of the AP members supported 20 traps a couple days a week, which is similar to what we just heard from Chuck. Open it up for personal use fishery could become problematic for enforcement, because we thought dependent on how much quota you were allowed in this personal use fishery, that would be an incentive to try to sell a few off to the side, which has been discussed, so we agreed with that.

Some of us prefer a limited commercial fishery opposed to the personal use fishery, because that way you would be able to sell a little bit of the product. Then you would be able to get some more data into the model, so maybe we could help by putting more stuff in there, because Maggie said to me earlier, like she said today. More data is better. That was a reason for thinking a small fishery with very low trip limits.

Then we had one person that was pretty concerned that you guys wouldn't accept any fishery at all. Then we go into the small research set-aside fishery, which AP supported that they should be able to sell the shrimp if they do that, which leads into that very limited fishery. Ten-day season, low shrimp limits was suggested.

Whether the landings will help answer the question, whether there is a disconnect between the Summer Survey and what the commercial harvesters can get. Use it as a research tool, that's pretty much what we decided. Comments on February 22, two members thought it was too late to implement something other than a moratorium this year, it should be planned for next year.

Two members thought that something could be implemented for this year, it really depends on what type of management system the Section wants to implement. It's pretty much, we saw the stock assessment just like you did, and you can see that it's very poor with the information we have now. I think most of our push was to add information into it and try to help that way, even if it means taking out a few more shrimp, it may be beneficial in the long run. I guess that's it, I guess I can take some questions now.

CHAIR WHITE: Okay, thanks, Gary. Any questions? Toni.

MS. KERNS: One hand from Dennis Abbott.

CHAIR WHITE: Okay, Dennis, go ahead.

MR. ABBOTT: Mr. Libby, thank you for your meeting yesterday. I listened to the entirety of it and appreciated everything that I heard, and share the same concerns that you do have. But one thing I would like to ask Katie or Maggie to comment on is the concern about, and what would be the ramifications of outsourcing the survey, and the intent of them somehow achieving better results? I think we need to have some better understanding of why we do things the way we do things, and not change doing things in any other way. Thanks.

MS. HUNTER: I'll take a stab at that, Dennis. This is Maggie. We do use industry vessels for the Maine/New Hampshire inshore trawl survey, and that has been very useful. I think I did show that earlier. It's important that if you do have industry doing the survey that it's just done the same way every year.

You know it could certainly work, and we have had some success with that inshore survey. But you can't

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have a different boat doing it every year, or a different gear. You also have to have a very set protocol on how you choose your stations. You can't have the captain say, well, I think I'll try over here this year.

Next year he says well, that didn't work out very well. I think I'll try somewhere else the next year, because then you're comparing apples with oranges, and if you see an increase or a decline in your stock you won't know whether it was because you looked in a different place, or because the overall Gulf of Maine stock was declining.

Unfortunately, that's the question that we have. We need to know how the whole stock is doing, not just what can be caught in Portland or what can be caught off of Stonington. Yes, certainly an industry survey can work, but it has to be done very consistently from year to year.

CHAIR WHITE: Okay, Dennis, are you all set?

MR. ABBOTT: Yes, thank you, Maggie, that is what I wanted to hear.

CHAIR WHITE: Okay, any other questions, Toni?

MS. KERNS: I don't have any other Section members with their hands up.

CHAIR WHITE: Any questions from the public, and please questions, because you'll get a chance to comment on any motions that come up, so any questions for the Advisory Panel?

MS. KERNS: Right now, I just have one, it's Ben Martens.

CHAIR WHITE: Ben, go ahead.

MR. BEN MARTENS: Thank you, Mr. Chairman, and thank you, Mr. Libby as well. This is maybe more of a question for Maggie than for the AP. But for the comments that Maggie just made about the idea that we kind of need to have these surveys being perfect, when at the same

time we're talking about losing some of these surveys because of funding. I guess maybe that's a bigger question to the AP or their recommendations on how we start to collect better data and use fishermen to collect data.

I guess I was a little shocked that the answer to that question was that we, like we need perfect surveys when our surveys are about to disappear. Maybe there is not a question there, but I was just a little struck by that, and I thought the APs recommendations on that were kind of important to think through. But maybe Maggie can talk a little bit about the data needs of the surveys moving forward, and what would happen if we lost those surveys without the catch data that we haven't had for quite some time either.

CHAIR WHITE: Maggie.

MS. HUNTER: Well, I'm happy if you think our current surveys are perfect, but no, you don't need a perfect survey you need an extensive survey. Like I tried to show in that 2020 trapping project how different the results were just within a 12 mile stretch of coast. You know that map we put up of the Summer Survey.

You can see that there were some areas where you caught shrimp and some areas where you didn't. But you do want to have a widespread, you know to cast a broad net when you do a survey, and get just as many stations as you can. You know the more stations you can visit, the better idea you'll have how the stock is going. That is all I was trying to say there.

CHAIR WHITE: Are you all set, Ben?

MR. MARTENS: Thank you, Mr. Chair.

CHAIR WHITE: Any other questions, Toni?

MS. KERNS: Yes, we have Mike Armstrong.

CHAIR WHITE: Mike, go ahead.

DR. ARMSTRONG: Gary, could you expand? One of your slides said the AP opposes a personal use harvest. Was that everyone on the AP? I know there

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are only four, but did everyone oppose it, and could you expand on the reasons why?

MR. LIBBY: We opposed that, three of us. One of us wanted it, and three of us opposed it because of the possible illegal sale of the shrimp under the personal use. Also, the enforcement issues that would come up with it, they would have to be monitored quite closely to make sure they weren't bringing in more shrimp than they were supposed to.

It would be an incentive, because there is a big, really big demand in the public to try to get some of that shrimp to eat. We thought it would be opening up a can of worms to have personal use with potential illegal sale of that shrimp, and thought it was like a dangerous area to take more shrimp out than what we should with a personal use.

CHAIR WHITE: You all set, Mike?

DR. ARMSTRONG: Yes.

CHAIR WHITE: Toni, any other hands?

MS. KERNS: Steve Train.

CHAIR WHITE: Steve, go ahead.

MR. TRAIN: I wonder, has enforcement weighed in on that at all, on that fear? Is that something that they see as a problem? Does anybody know?

MR. LIBBY: I'm not sure, Steve. When we came up with it, I think it was just a personal history, and thinking about fishermen not being able to go for, what 6 or 7 years, and finally being able to go, and the neighbor bugging them for a bucket full of shrimp or a tray of shrimp. It depends on what they're allowed, I guess.

If they're allowed a tray of shrimp was what was thrown out at us by the member that wanted it. We thought a tray of shrimp was quite a lot. If it was 15 pounds of shrimp, then

maybe not so much. But the one guy said, even if you did have a limited commercial fishery, then it still might be a personal use, because you may not get many with that stock assessment.

CHAIR WHITE: Are you all set, Steve?

MR. TRAIN: Yes, so that was a personal thing. There is no enforcement report on it, thank you.

CHAIR WHITE: Toni, any further hands?

MS. KERNS: Yes, we have Megan Ware. Just to be clear, since the AP just had their meeting yesterday. We wouldn't have had an opportunity to talk to Law Enforcement about it. I will say that Delayne Brown is on the call, so if you want him to respond you can call on him.

CHAIR WHITE: Steve.

MR. TRAIN: I certainly wouldn't mind hearing from enforcement on it that fear is justified in their opinion.

CHAIR WHITE: Okay, Lieutenant, would you like to respond, please?

LIEUTENANT DELAYNE BROWN: Sure, as always, I would like an opportunity to review what the Technical Committee came up with, and also bring it to the members of the Law Enforcement Committee. But I can't see how, if the Technical Committee says they can't see any biological reasons to open it, how it would make any sense to open it by any means.

CHAIR WHITE: Okay thank you, any further hands, Toni?

MS. KERNS: Yes, Megan had her hand up.

CHAIR WHITE: Okay, Megan.

MS. WARE: I just wanted to comment a bit on the enforcement aspect, and Mr. Chair, you can ask me to hold this if it is steering more into territory you want to hold off until motions. But after the AP meeting, I actually had a meeting with our Colonel and two Lieutenants here in Maine DMR, to specifically talk

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about this enforcement issue, since it came up at the AP.

You know what I heard from them is, could it be the effort you allow and the limit you set at is what is going to be really important there in determining the incentive for peddling. If you're setting it at a low level that reflects personal use, there is not going to be, I'll say "extra" to be passing around. I'll have a motion forthcoming, but at the levels that are in this motion, I'm not going to spill the beans here, but you know they did not express concerns about peddling. I'll talk about that a bit more when I get to that.

CHAIR WHITE: Okay, thank you. Toni, any other hands?

MS. KERNS: Yes, Cheri Patterson.

CHAIR WHITE: Go ahead, Cheri.

MS. PATTERSON: Yes, I just wanted to talk about a recreational harvest of shrimp, and how that would be any different from a Law Enforcement perspective on say recreational harvest of lobster. We have recreational harvest for other species that that is always a concern with, but yet we still have those recreational fisheries that are enforced by Law Enforcement. I guess I'm kind of confused how that would be any different with a recreational shrimp fishery than per se a recreational lobster.

MR. COLSON LEANING: Mr. Chair, if I may. I'm unfortunately unable to raise my hand, but I thought maybe a point of discussion that was had at the AP meeting yesterday might be helpful with Cheri's question, because this did come up with the scallop fishery. There is a recreational fishery and a commercial fishery, and how that would differ actually from northern shrimp, which would just be implemented as a recreational fishery. I guess when there is no commercial sale allowed whatsoever, I think the AP members were

talking about some concerns about how that could become an illegal activity. But when you have a recreational fishery and a commercial fishery, participants have a legal means to sell the product, and so there would be less concerns about like an illegal market.

CHAIR WHITE: Any further hands?

MS. KERNS: No hands at this time.

### SET 2022 FISHERY SPECIFICATIONS

CHAIR WHITE: Okay, I think we're starting to get into discussion that will probably take place after a motion is on the table. Megan, you said you had a motion that we could get started with that?

MS. WARE: Sure, Mr. Chair. I'm happy to start us off. Maybe I'll just start by kind of stating the obvious here. I think we have a stock where high natural mortality and high predation are what's preventing rebuilding. It's frustrating and unfortunate that we've been in a moratorium for 7 years, and we really aren't in a better position today than we were when the moratorium started.

Based on the environmental data I'm seeing, I'm not expecting additional years of a moratorium to suddenly change the winds here, and we be able to rebuild this stock. I think that leaves the Section in a really difficult and tough position about where to move forward. I know DMR continues to be interested in a limited commercial fishery.

I also know that there is not enough support around this table for that action. Given that is kind of off the table, I don't see a continued moratorium changing our stock condition. I'm willing to try the path that's in the middle here, and allow for a small personal use fishery. I think the projections that Katie showed show very little difference in the stock trajectories, between allowing no harvest and a small level of harvest that we might expect under a personal use fishery.

You know I'll also note that as we've kind of alluded to, we have a series of research recommendations from our benchmark assessment that we really

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haven't been able to address, because we don't have recent fishery dependent data. We've learned we have a Summer Survey that's in jeopardy, I'll say, in terms of funding.

I think allowing for a small level of harvest would provide an opportunity to collect some samples, and do it in a way that unlike an RSA, doesn't force a state to pick winners and losers. I think it's been interesting to hear Maggie talk about how location can be just as important a factor in the resulting data as the biomass of shrimp that may be out there.

I think this is the way to kind of avoid those impacts. I have a motion I sent to staff, and when that's up on the screen I will read it, and if I get a second, I would like to speak a little bit more to this enforcement issue. **But move to continue a commercial fishery moratorium for northern shrimp and establish a northern shrimp personal use fishery in 2022. The personal use fishery will be defined as: A two-week season of February 14-28, 2022. Traps can be set starting one week prior on February 7, 2022. A trap fishery with a three-trap limit per permit holder. A trip limit of 1 five-gallon bucket of whole shrimp (25 lbs.) per vessel per trip per day. The commercial sale of northern shrimp is prohibited. In 2022, convene a work group of section members, ASMFC staff and NOAA to discuss what relinquishing management of northern shrimp looks like and associated ramifications.**

CHAIR WHITE: Okay, thank you, Megan. Is there a second to this motion?

MS. PATTERSON: Yes, Cheri seconds the motion.

CHAIR WHITE: Okay, Cheri. All right, Megan, if you want to elaborate.

MS. WARE: Thanks. There are a lot of topics that have come up, and I don't want to be hogging the microphone here. But I think the one that seems to keep coming up is

enforcement, and as I mentioned, you know I think the easiest way to stop peddling is to set a trip limit that is low enough that actually reflects the level of personal use.

I think a three-trap limit and 25 pounds of whole shrimp, so that is still with the head and shell on, represent a level of personal use. I did have conversations with our Marine Patrol yesterday, and I think as Cheri alluded to, they didn't see anything heightened concerns about illegal activity compared to other fisheries.

I'll note that striped bass is a fishery, at least in Maine, maybe in New Hampshire as well, where it is recreational only, there is no commercial sale. I don't think northern shrimp is unique in that way. Then I'll also note, you know if someone is caught peddling, the Commissioner has authority to suspend licenses. That can be a powerful disincentive, particularly if someone's lobster license is on the line.

CHAIR WHITE: Okay, thank you, Megan. Cheri, would you like to talk as a seconder?

MS. PATTERSON: No, I agree with all that Megan had indicated, and don't have any more to add, thanks.

CHAIR WHITE: I have one question before I'll open it up. This would be to Alli. This would produce even limited, but some mortality on a depleted stock. Is there any sense that National Marine Fishery Service might take any action based on this, and would that action be limitation in federal waters? I know this is a hard issue to have a direct answer, but if you could give any sense, Alli, that would be appreciated.

MS. MURPHY: It's a good question, and at this point this is the first time I'm seeing the proposal here, so I haven't shopped this around then and had a discussion with folks about this. I was intending to make public comment when you were accepting public comment, in support of the full moratorium to keep the fishery completely closed.

I think that kind of best aligns with the requirements of National Standard 1, to promote the rebuilding, as well as National Standard 2, which is about the best

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scientific information available, and I think the TC presented some, or members of the TC presented some really good data to you all today. That said, I will also say this looks to be a pretty limited personal use opening of the fishery. If this does pass, I'll certainly be discussing this and passing this along to General Counsel and other folks who might be interested.

CHAIR WHITE: Okay, thank you very much for that. Now I'll open it up for comments from the Section.

MS. KERNS: Mr. Chair, I had Cheri followed by Mike Armstrong, Megan Ware and Ray Kane.

CHAIR WHITE: Okay, Cheri.

MS. PATTERSON: Yes, I'm sorry, my hand was stuck up from before. I just dropped it.

CHAIR WHITE: Okay, Mike.

DR. ARMSTRONG: I've got a few questions, but I'll start with one for Megan. We saw that 5 or 7 metric tons didn't change the trajectory too much. What do you anticipate that the harvest would be, and how do you go about calculating that?

MS. HUNTER: Can I tackle that one? This is Maggie, I'm sorry, I don't have a way to raise my hand.

MS. WARE: Maggie, this is Megan, I'm happy to answer that question.

CHAIR WHITE: Go ahead, Megan, and then Maggie after Megan.

MS. WARE: I think that's a really fair question, Mike. What I did, obviously you have to make some assumptions, but I'm going to use the worst-case scenario assumptions to give you that, and then you can change these assumptions as you multiply the three numbers to what you think is reasonable. I was looking

through the benchmark assessment. The highest number of trap fishermen ever recorded in Maine was 143, so I'll use that as a worst-case scenario of 143 participants.

I think that is high, but again worst-case scenario. I'll say that they land the full trip limit. Every trip the 25 pounds, and then I'll say, or I'll assume they go three times a week, based on weather and also the need for traps to soak. That comes out to 9.7 metric tons. You can change those values as you want and you'll get presumably lower numbers here, higher changing them. I think this is a pretty low, or of the projections that the TC did, this falls within that lower option.

DR. ARMSTRONG: Megan, just if I could follow up.

CHAIR WHITE: Go ahead.

DR. ARMSTRONG: You did 143 times 25 pounds per trip times, what was the last one? It's two weeks times three a week, is that right?

MS. WARE: Yes, for two weeks, so it was 14 3 times 25 times 6, and then I converted that into metric tons.

DR. ARMSTRONG: Oh, okay, so 6 was the last number.

MS. WARE: Yes.

DR. ARMSTRONG: I'll let someone else go. I'll probably raise my hand again, thanks.

MS. HUNTER: Hi, this is Maggie. I just did a quick, set up a little worksheet to do this, and I just had put in 100 fishermen and I got 7 metric tons, and I would be happy to put in some different numbers if you want to play around with it. But I did want to mention that that is around the F in the second scenario that Katie presented in the projection section.

It did result in the SSB after the fifth year being somewhat lower than the SSB, if you had no fishing at all, so I just wanted to mention that any level of fishing does reduce the stock more than no fishing does. I also wanted to mention that people have said that the moratorium didn't work, and I would like to suggest that it has helped preserve the stock at a higher level than it certainly would have been if you

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had had fisheries, so anyway I'll be quiet now. But if you want to run some different numbers, I've got that set up.

CHAIR WHITE: Okay, thanks, Maggie, that's helpful. Who is next, Toni?

MS. KERNS: I think it was Megan. I hope I'm putting that in the right order.

CHAIR WHITE: Do you have anything more, Megan?

MS. WARE: I was going to respond to the National Standard 1 comment, but I've spoken a lot, so I'm happy to go to the end of the line and others can speak.

CHAIR WHITE: Okay, who is next?

MS. KERNS: Then I had Ray.

CHAIR WHITE: Okay, Ray.

MR. KANE: Yes, thank you, Mr. Chairman. Question to Megan. You're talking about a high number of 143, so will the state of Maine be limiting access so that, you know we're running these numbers, so will the state, if this motion were to be approved. Would the state limit the number of permit holders, because there might be a run on recreational or whatever you call them in the state of Maine, the trap fishery. There might be a run, on permits, in which case all these numbers get skewed. That's a question for Megan.

MS. WARE: Yes, thanks, Ray, good morning. What we've talked about in state is creating a non-commercial northern shrimp permit that would be at no cost to individuals, so that we would know the number of purchases against them, and have a way to enforce that reporting requirement. That would be an open access permit, so that is out there for your thoughts, but I think the 143 is a high estimate, to be frank. I mean if that's the highest number of trap fishermen we saw when this stock was at

its peak, I suspect we'll see different participation rates at a three-trap and five-gallon bucket limit. I personally think that that is quite high.

MR. KANE: Follow up, Mr. Chairman.

CHAIR WHITE: Absolutely.

MR. KANE: Yes, so is the state thinking about a hard stop, because I keep hearing 7,000 as a number, so is the state going to implement a hard stop when a certain number is achieved?

MS. WARE: I'm not sure what the 7,000 number is, Ray, can you help me understand what you're getting at with that?

MR. KANE: I would have to look at the table once again, but what was the projected number at 143 permits fishing three days a week, 25 pounds a day?

MS. WARE: I think it's 9.5 metric tons.

MR. KANE: Nine-point five metric tons. Would the state implement a hard stop if this motion were to be passed? It gets caught in the first week, right? You're giving them a week to set the gear, then the following week they can start hauling in three days a week. If it were to be filled. You know we need a hard stop number in this motion, where you just say okay, you can't go that following week, we've hit a TAC here. I don't see a hard stop, you know okay, 9.5 tons have been caught, but that's not in this motion.

CHAIR WHITE: Ray, just to clarify. You're suggesting that there be daily reporting then, so that the state would know exactly what the amount was every week?

MR. KANE: Yes, thank you, Ritchie. I'm supporting what the TC has to say about this, and I understand there is a push in the state of Maine, you know to have a personal fishery, but I'm not seeing any numbers, so yes. Daily reporting on the days they fish, and we need a hard stop number if this motion were to pass.

CHAIR WHITE: Megan.

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MS. WARE: Yes, and I'll say, I don't think we were envisioning daily reporting for a personal use fishery. I think that would be a first, as far as I know of. It's hard, because we've had a moratorium for so long. I don't think we know what the level of participation will be. Certainly, we can be monitoring the number of permits that are sold, and respond accordingly.

We will have to be, if this happens. The regulations will have to be implemented as an emergency regulation. We can always be more conservative than what a state, if we feel like the effort is higher than we anticipated. But my understanding with a personal use fishery is that there is no hard TAC, you know a hard TAC is for a commercial fishery, which is not what I'm proposing here. I think that it's clear the commercial fishery's moratorium is going to continue.

CHAIR WHITE: Megan, I have a question. The negatives are that it affects the stock, to a small degree, but it still is a negative impact on the stock, and it probably has some negative impact ecologically. On the benefit side, what I saw was cultural. The history of the shrimp fishery has been commercial, not recreational, or not personal use.

I would view this, the benefits are going to go to 100 fishermen or 140 or 80, or whatever that ends up with, and their family. It doesn't seem like the benefits go to the general public. I just wonder if you would comment, on how you view the benefits of this fishery.

MS. WARE: Sure, thanks for the question, Ritchie. I think it's important to, I guess see the benefits. Under a moratorium the benefits we're getting are the ecosystem services, I'll say that northern shrimp provide, and I want to acknowledge those are really important. I think the projections show that a small level of F is not going to change the trajectory of the stock.

I think under a personal use fishery you get those same ecosystem services that you are

getting under a moratorium, but you also get these social benefits. Northern shrimp, it does have a coastal access to New England. You know people talk about northern shrimp almost like legend up here. I think that value, while it's really hard to quantify, it is important to consider kind of that heritage cultural access.

I think that's a really important benefit that we get out of this. Again, I respect Ray's opinion in support of a moratorium. From my perspective it feels like we've walked the same road for 7 years, and we haven't ended up where I thought that road was going to lead us, and so I'm willing to try a slightly different path here and see where that goes.

CHAIR WHITE: Okay, thank you, that helps to define it. The next hand, Toni.

MS. KERNS: Steve Train.

CHAIR WHITE: Steve, go ahead.

MR. TRAIN: I want to speak in favor of the motion. I don't believe that here is any great risk that we will exceed catch with three traps per boat, beyond what would be considered the confidence levels in the graphs and charts we saw earlier. Knowing that, I am in favor of it.

CHAIR WHITE: Okay, thank you, Steve. Next, Toni.

MS. KERNS: Dennis Abbott.

CHAIR WHITE: Dennis, go ahead.

MR. ABBOTT: There are a lot of points here to be made. First of all, Mike Armstrong's question I think is really unanswerable. We don't know how many participants there would be if we went in this route. We don't know the weather conditions. We don't know this; we don't know that. It's a real guesstimate of what a catch could possibly be under a three-trap limit per permit holder moving forward. As you said earlier, there are social benefits. I think we have to consider also that in the early days of the moratorium, we've had the moratorium now for 7 or 8 years, and the stock hasn't rebounded.

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But as Maggie said a few moments ago, and as I spoke with her yesterday, that it's a question of the glass being half empty or half full. I mean we probably wouldn't be at the present stock status had we not implemented a moratorium, so you could say that it's somewhat of a success, even though the stock is not rebuilding, it's just been informative.

We also had a fishery, whatever you want to call it for the first couple years, which probably did take more shrimp than would possibly be taken under this scenario. This is a big jump for us. I mean we've been very adamant for all these years about a strict moratorium. But it's gotten us nowhere, essentially. I mean status quo, so to speak.

I don't think that there is a whole lot of danger in moving ahead with this, which is a change of thinking on my part, being a strong proponent for all these years to continue the moratorium with no fishery whatsoever. It was also brought up that there is going to be a need for data. If we lose the Summer Survey, you know there is probably a need for sampling it, which might be helpful to the scientists, whatever.

Somewhat reluctantly, I'm willing to support this and take the jump off the cliff, and let things happen. There is a year to be working on the finer details of this. I see that Maine; Megan is going to have some work to do about how they are going to implement this. Are they going to have a separate license category?

How are they going to take care of it? I think the idea of having daily reporting is a bit much, with possibly a goodly number of people calling in to say that they caught two gallons or three gallons, or got lucky and got five gallons, or whatever. Summation, I think that we should just give this a chance, so I will be voting in favor of this, thank you.

CHAIR WHITE: Thank you, Dennis. Toni.

MS. KERNS: I think we're circling back to Mike Armstrong. If you had a follow up question your hand was still up.

CHAIR WHITE: Yes, go ahead, Mike.

DR. ARMSTRONG: Thank you, I actually didn't want it up, but now that you've asked, I do have a question. One of the benefits would be some biological sampling. How do you go about doing that? Are you just going to find cooperative fishermen? I guess for Megan.

CHAIR WHITE: Megan.

MS. WARE: I had a conversation, Mike, with our sampling folks a week or two ago to talk about this, and what would be possible. I think what I learned from that is that we are going to have, or we can do some sampling for this. I think it will be port sampling, so meeting people at the docks. Hopefully trying to engage with some of our, I'll call them NGOs, but you know like fishing community NGOs that we have in Maine, so that if they are able to collect samples and freeze them, we can pick them up from around the state.

I think we are at a point where Maine is committing to do some sampling on this and putting staff time towards it. One of the things that contributed to the two-week season I proposed is, this is a time where scallop work or scallop sampling is winding down in the state, and so I think we have some availability with those folks to pick this up as that scallop work is winding down.

CHAIR WHITE: Mike, any further?

DR. ARMSTRONG: Yes, if I could just follow up with a comment.

CHAIR WHITE: Sure.

DR. ARMSTRONG: I'm kind of torn. Like you guys know, I usually never want to go against what the TC suggests. I am torn. I do think the harvest will be fairly trivial. But I worry a little bit about it. Last time the fishery was opened for a little bit of research,

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there were people getting \$10.00 a pound, so each one of those buckets is worth \$250.00.

That's quite an incentive to do some peddling, I suppose, that we will never, ever record as landings, and that's been a continuing problem is all the cryptic harvest that we've always had. I do worry that we danger the stock a little bit, tiny bit, and we're doing it for a group of 100 people, not the general public.

There isn't a whole lot of net benefit to society from doing that. You know I know that's sort of a strange thing to say. But if this somehow would benefit a whole bunch of the public, I could digest it better. But it's not, it's sort of a private little group that will benefit from it. Anyway, I'm not sure how I'm going to vote.

We're going to have to caucus for a few minutes when it comes time. One final thing. I worry about that fifth one about convening a work group. I would actually like to see that as a separate motion, if that's what we want to do. I mean I don't see us relinquishing management for a long, long time. But anyway, those are my comments.

CHAIR WHITE: Thank you, Mike, any further hands from the Section?

MS. KERNS: We do. You have Cheri Patterson followed by Dennis Abbott.

CHAIR WHITE: Okay, Cheri, go ahead.

MS. PATTERSON: This might go out to Maggie, this question, in regards to, and I know it's variable but when have the shrimp been dropping their eggs? Is this prior to egg drop typically, or is this in the middle of egg drop? What is the February 14-28 season going to be for egg drop?

CHAIR WHITE: Maggie.

MS. HUNTER: Yes, this is Maggie. It varies very much from place to place, but that should be right around the 50 percent egg hatch mark for

Mid-Coast Maine. It would be later down East, say in Stonington and earlier to the west, if that helps you. I also wanted to comment on sampling.

This is a personal use fishery, especially if it's a trap fishery. That will cost staff time, but it also gives us samples that don't have as much information as trawl samples, because traps generally do not catch small shrimp, so it won't give us any idea of what's coming along, so that the sampling will be of limited use.

CHAIR WHITE: Thanks, Maggie, Toni.

MS. KERNS: We have Dennis.

CHAIR WHITE: Go ahead, Dennis.

MR. ABBOTT: Yes, thank you, Mr. Chair. To Mike Armstrong, about having any benefit to the general public, and were prohibiting commercial sale. I think that you would probably find out there would be bartering going on. There would be, if someone is lucky enough to go fishing and have success in a week, they would probably be handing out shrimp to friends and relatives.

Maybe to restaurants in lieu of some consideration or a few meals or something. Would that be considered commercial sale? I think that if there is shrimp being caught, somehow some amount of them is going to be available to the general public, however limited. I don't think that we should get too involved in that.

CHAIR WHITE: Toni, and further hands?

MS. KERNS: I don't have any hands right now. I do have a question, just for clarification purposes from staff perspective. I think that Megan, you are intending this to be a trap only fishery, but it doesn't say traps only anywhere, so I'm just curious for clarification purposes.

CHAIR WHITE: Megan.

MS. WARE: Yes, thanks, Toni. I was trying to be clear with the second bullet, but maybe not successful as a trap fishery, so yes, this is trap only, a three-trap limit.

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MS. KERNS: Is it okay if we write, either just a separate bullet that says this is a trap-only fishery or something to that effect in one of these?

MS. WARE: Yes, if that's necessary for the record. I think you could just add the word only in that second bullet.

MS. KERNS: Maya, could you say this is a trap only fishery with a three-trap limit per permit holder? Thank you.

CHAIR WHITE: Is that okay, Megan?

MS. WARE: Yes, thank you.

CHAIR WHITE: Cheri, as seconder is this an okay change?

MS. PATTERSON: Yes, it is, thank you.

MS. KERNS: Ritchie, I don't know if you will be going to the public or not, but you have a bunch of public hands.

CHAIR WHITE: Yes, I will. Any more hands from the Section?

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

CHAIR WHITE: We can certainly come back to the Section. Now I open it up to the public for a question or comment, raise your hand.

MS. KERNS: Right now, I have Gary Libby first.

CHAIR WHITE: Gary, go ahead.

MR. LIBBY: Thanks for letting me speak on this. I was one of the ones that was opposed to this in the Advisory Panel. I think I would rather see some sort of fishery with the sale of the shrimp, and that way you could keep track of what was being landed, and that way it would benefit the public more.

Because the public is the ones that I really think want to have access to this shrimp, not just a few guys that can go out and get a bucket of shrimp and trade it for whatever they want. If they were to trade it, trade is a value, so that is like selling. That's why I'm opposed to it. I just don't think it's a good idea to do that without involving people from the public to get access, because that's more what it's about, it's a public resource. That's just my opinion, thank you.

CHAIR WHITE: Thank you, Gary, Toni, next hand.

MS. KERNS: Vincent Balzano.

CHAIR WHITE: Vincent, good to hear you.

MR. VINCENT BALZANO: Thank you, Mr. Chairman. Good morning. Happy Holidays! I'm not going to oppose or support this motion, and I know this is going to be more of a comment. It's obvious that the moratorium is not working, and it's obvious that we are going to need some more information about this fishery.

The biggest angst I have about everything here, in this motion trawl is not even mentioned, and if we look back in the history of this fishery, the gear type allocation split is 87 to 13, so you're denying 87 percent of this fishery any access, and you're allowing 13 percent of it in a very small area of the broad stock area passes to this shrimp to get you information.

I have issues with what type of information it's going to supply, number one, and I am very supportive and in agreement of a lot of Dr. Armstrong's comments, about the benefits of the public, the information that we're going to get, and the equity amongst the traditional participants in this fishery. I thank you all for allowing me to comment. I say hello to all my old friends in Trent that we haven't gotten together in recent years, and happy holidays to all, thank you.

CHAIR WHITE: Thank you, Vincent. Toni, next hand.

MS. KERNS: I'm not sure. Chuck Plummer's hand keeps going up and down, so I'm not sure if he's having trouble with his hand or not, so I just want to check in with him.

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MR. PLUMMER: Hello.

CHAIR WHITE: Yes, Chuck. Go ahead.

MR. PLUMMER: Well, I don't understand what the big issue is about not being able to sell the shrimp. If there is only 25 pounds of shrimp, you know projected to be caught. I think if we were able to sell that shrimp, and I really believe there should be some kind of data collected, like a trip report, like they do with lobstering, so that the DMR would know how much shrimp really is being caught.

I don't think there is much of a threat of catching those 25 pounds out of three traps. That's quite a lot per trap, as I understand it. I would like to be able to sell. Now, when Maggie had the shrimp trappers do a little survey a couple years ago, my friend Arnie Gamage, who passed away had been shrimp trapping for years, he started that business.

He wasn't allowed to sell the shrimp, but he took all his shrimp around and he gave it to people in town and out of town, and you know he told this story to me, and he later passed away a couple years ago. Every time he gave a person shrimp, he had the biggest smile come over from whoever he gave the shrimp to, because it had been so many years where they were just happy to get them shrimp.

We asked the question at his funeral, which was quite big, how many people he had gone around and given this shrimp to, and probably 100 people stood up. He would give two pounds, and so the public was being served by that. I mean I could support this. I would like to see it be five traps. I really don't see the problem of why they can't be sold. If people in the public know there is a shrimp season, they'll be coming to the co-ops or places like that looking to buy a couple pounds of shrimp. That's just my comment, I guess. Thanks.

CHAIR WHITE: Thank you, Chuck. Could I ask you a question, Chuck?

MR. PLUMMER: Yes.

CHAIR WHITE: If this passes, will you fish three traps?

MR. PLUMMER: I'm not sure whether I would. You know I might, because I would like to have a shrimp and my mother would like to. You know the Co-op would like to have shrimp. I come from a trawling background for years and years, so I understand what Vinny Balzano was talking about also, but yes, I probably would set three traps.

CHAIR WHITE: Okay, thank you. That is helpful. Toni, next hand.

MS. KERNS: I don't have any more members of the public, but Dennis has his hand up.

CHAIR WHITE: Dennis, go ahead.

MR. ABBOTT: Yes, thank you again, Mr. Chair. I think we're getting ourselves, getting wrapped around the proverbial axle here. I don't know if I should consider making a substitute motion to impose a commercial fishery moratorium for 2022, and then a further motion to convene a work group of the Section members, and give us time to give this whole thing further thought about how we might have a small season.

To Vinny Balzano's comments. I do understand, you know the fact that it's an 87-13, but there is no way, I don't think the Section could even consider entertaining having an open trawl season, because we would so quickly go over the numbers in all likelihood, that I don't think there would be any support for that under the conditions of the stock, so I just want to make that clear in my thinking. I won't make a motion yet, but I'm very close to wanting to make that motion. Thank you.

CHAIR WHITE: Are there any more hands, Toni?

MS. KERNS: I just want to check with Chuck. I know he just spoke, but then his hand went back up again, so Chuck Plummer's hand is up.

MR. PLUMMER: No, I put my hand down. One thing I want to say though is, to be brutally honest, there are

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not many shrimp, you know, and if all the stock assessment says there is not many, the fishermen are sort of in agreement about that too, so a hard TAC wouldn't be out of line here. Thanks.

CHAIR WHITE: Thank you, Chuck. Toni, if there are no more hands, then I would like to comment. I started being in favor of this, and as I listened through this meeting I am now opposed. What I would support is the last bullet, but I would like to see that expanded, and I think the work group would not just look at how we would relinquish management, although I think that there are a number of questions that would have to be answered on that, so I would like to see those answers. But also, how we go forward. What kind of minimum data would we need going forward?

Would we need the trawl survey that is going to be eliminated? If we would need that, what kind of money are we talking there, where that money might come from? Is it possible to design some information that the fishermen could provide? I would like to see more detail about both getting out of the fishery.

Then, what would be entailed in staying in it, but staying in it going forward with the proper data, so we could monitor what is happening. Then also, figure out what we do after this coming year. If we do a moratorium this year, then what do we figure out for the following year? That is where I have evolved, listening to everything at this time. That is how I will be voting. Any further hands?

MS. KERNS: We have Mike Armstrong followed by Dennis Abbot.

CHAIR WHITE: Okay, Mike, go ahead.

DR. ARMSTRONG: Just one quick note on this motion. I think whatever we can maybe perfect it later. I'm not sure how you want to do it. Maybe just vote on this and move ahead. But I think the moratorium we need to specify that it probably should be another three years,

because there is nothing locked and loaded recruitment wise, and so there won't be a fishery even if we have the biggest year class, we've ever seen.

For three years, so I would like to see that. I'm not sure I'm asking to perfect this now. But the subsequent motion should contain some sort of time period for the moratorium. I think as I've said before, it's helpful for industry to know what's going to happen in the future, rather than year to year. Thank you.

CHAIR WHITE: Dennis, you had your hand up.

MR. ABBOTT: Moving along here, are we going to be voting or is this a consensus type thing, where we have to reach consensus? I think we need to take some action now, because we're just continuing to talk and not get very far here.

CHAIR WHITE: Toni.

MS. KERNS: The Shrimp Section votes.

CHAIR WHITE: Okay, so if there are no more hands, I'm assuming that there is a need for some time to caucus, so let's take three minutes to caucus, and then we'll come back and vote on this. Okay, time's up. Any state needs any additional time, raise your hand? Any hands, Toni?

MS. KERNS: I don't have any hands from the state. I do have one member of the public who has a hand up.

CHAIR WHITE: I think we're beyond public at this point. Will you do a roll call, Toni?

MS. KERNS: I can. I'll be calling the states. If you just ask for a yes, no, null, abstain, I'll say the states names out loud.

CHAIR WHITE: Thank you. That would be good.

MS. KERNS: Ritchie, are you looking for me to say in favor?

CHAIR WHITE: Yes, would you?

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MS. KERNS: If you ask for those in favor, I'll just read the names out loud.

CHAIR WHITE: All states in favor of this motion, raise your hand.

MS. KERNS: I currently have Maine with their hand up. Cheri, did your hand go up and then down? I couldn't tell.

MS. PATTERSON: No, it should be down.

MS. KERNS: Okay, just checking, so in favor I have Maine.

CHAIR WHITE: Okay, clear the board and all states opposed.

MS. KERNS: For opposed I have New Hampshire and Massachusetts.

**CHAIR WHITE: Okay, we don't need any further, because that is all the states, so there is no null, no votes, so 2-1, motion fails. Is there any new motion?**

MS. KERNS: I have Dennis and then Cheri.

CHAIR WHITE: Pardon, what was the first?

MS. KERNS: I have Dennis with his hand up.

CHAIR WHITE: Okay, Dennis.

**MR. ABBOTT: I would like to make a motion to continue the commercial moratorium, either indefinitely or for three years. Let's make it for three years. I would also like to include the fourth bullet from the previous motion. Rather than me read it, if you could just transcribe that, transfer that whatever. Also, I would add a third sentence that the Section would explore a personal use fishery at the same time. I'll speak to that if I get a second.**

CHAIR WHITE: Okay, any second to that motion?

MS. KERNS: I have Ray Kane with his hand up.

CHAIR WHITE: Okay, seconded by Ray. For clarification, Dennis. The second part of your motion, the work group, would it have the ability to look further than just relinquishing management? Would it have the ability to look at how we would continue management, and what that might take or change from our present scheme?

MR. ABBOTT: I think that probably we could perfect that motion by eliminating the word relinquishing, just to discuss what management of northern shrimp looks like. I think that the group, it should be open to them to go in whatever direction they feel necessary, and to come back to the Section with the results of whatever they would decide.

CHAIR WHITE: Would you entertain, to include relinquishing with that, so that is looked at?

MR. ABBOTT: Yes, it should be very open. You can wordsmith it however you like. I think that the work group should not be limited in looking at any aspect of shrimp management. I think that's the task that we would be giving this group, very simply. I don't think we should make it too complicated in a motion.

CHAIR WHITE: No, I think that is fine, so your intent then would be that Section members then could propose questions to the group that they would like to see answers to for the full Section to consider.

MR. ABBOTT: Go wherever they choose, to try to find some solutions in the conundrum that we face.

CHAIR WHITE: Okay, so that the Section would have input as to directions that the Section would like to see them go.

MR. ABBOTT: I think basically the Section is going to end up being the work group, there are only three states.

CHAIR WHITE: Okay, all right, thank you. Ray, do you want to make comments?

MR. KANE: I agree with this motion. I'm still a little betwixt about the Section where it's for a personal use

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fishery at the same time. Yes, okay that's fine, as long as some thought goes into that personal use fishery, because I think a lot of questions were asked today, and I think the Department, DNR up in Maine has got to address those questions, as far as a personal use fishery is concerned. Thank you.

CHAIR WHITE: Thank you, any comments or questions from the Section?

MS. KERNS: Bob has his hand up and then Megan Ware.

CHAIR WHITE: Okay, Bob.

EXECUTIVE DIRECTOR BEAL: I guess the question for Dennis and Ray as maker and seconder. I guess what's the difference between this group that will be convened next year and the group that Cheri just Chaired that we heard about it at the beginning of this Section meeting? In other words, is this new work group really only focusing on relinquishing and on personal use? I guess I'm just trying to see if there is a different charge to this group, or is this really a continuation of the Work Group that Cheri Chaired leading up to this meeting?

CHAIR WHITE: Dennis.

MR. ABBOTT: Yes. To the first part. There have been conversations that we've had in the past about moving forward, whether we should continue managing shrimp or not. That's a question that I think needs to be pushed forward. Where do we want to go with that? As far as what the Work Group did in the past year or two.

I think that a lot of the information or Megan's motion raised more questions about what we should be looking at. You know there were a lot of questions posed about the implementation of a personal use fishery, so I think that using that as background that maybe we can come to some solution or understanding. Okay?

CHAIR WHITE: Bob, if I could add what I was trying to have Dennis put on the record with intent is, I have a lot of questions that I would like to see the Work Group attack. I mean withdrawing from this fishery, there would be parts of that. One would be the Commission, what is the process within the Commission, probably a vote by the Policy Board, I guess.

I don't believe we've ever done it. Then what happens? Then will National Marine Fishery Service assume jurisdiction? Does it assume jurisdiction in federal waters, and then what happens in state waters, so each state then has the ability to prosecute whatever that state wants to do? Then if we're going to continue management, what is a minimum amount of data, and how would it be collected, and then how much money would be involved in that?

That is what I would like to see for this group to come back to us with, so we can weigh our options, continuing management and what does that look like, and how do we do it, or to say we don't think this is ever going to recover. It's going to stay in moratorium forever, and therefore we're better off spending what resources we're spending on this to another stock. Those are the kind of questions I would be looking for. Is that helpful at all, Bob?

EXECUTIVE DIRECTOR BEAL: Yes, absolutely. I think your comments and Dennis's comments have been very helpful. Just so everyone knows, I'm not opposed to a work group, I think it's a good idea. There is a lot to talk about here. I just wanted to make sure that this work group had a clear direction, not just get together and chat about shrimp, but if it's more focused on what you just said and what Dennis said. I think that's valuable.

While I'm speaking, I think there may be value in this work group reporting back out to the Policy Board, as well as just the Shrimp Section. There is a lot of, you know as you said, precedent setting decisions and opinions and perspectives here on northern shrimp that the Commission has never really talked before. I think there is value in whatever comes out of this work group, going out to the broader audience of the Policy Board and have a bigger discussion here,

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because we may unfortunately run into the situation again, where there are some fisheries that we're trying really hard on, and we're not getting anywhere, and what do we do about it? Again, not opposed to the work group, just want to make sure they had a clear charge on what to do.

CHAIR WHITE: Right. I would hope that other members of the Section then would also add questions that they have, you know for both continuing and/or walking away from, as well as input from National Marine Fisheries Service. I don't see this limited, but I understand that the working group will need direction, and I think that's important. Who is the next hand, Toni?

MS. KERNS: It was Megan Ware.

CHAIR WHITE: Megan.

MS. WARE: I get two reactions. I really like Bob's suggestion about, I do think we need to somehow incorporate the Policy Board into this discussion, because I think this has broader impacts than just northern shrimp. I don't know if the motion makers would consider that as a friendly, to either include a subset of the Policy Board or report out to the Policy Board, some language that includes the Policy Board.

CHAIR WHITE: Yes, Dennis, do you have any objections to that as part of this motion, or that could probably be in the minutes as intent?

MR. ABBOTT: Yes, I don't have any objections. I don't know if it's necessary to put that in there at this time, but I would be fine with any verbiage people think is helpful to reaching some conclusions. I have no problem with.

CHAIR WHITE: Yes, I would think that Dennis has shown the intent of this motion, so I think it would be clear that it could go to the Policy Board. I would view the process of this coming to the Shrimp Section first, because the Shrimp Section may look at the information that's provided us.

Then I would think they would decide whether they're going to go forward with recommending to the Policy Board the withdrawal, or recommendations as to how we improve the data, and here is how much money we're going to need, and then how do we do that? I would kind of view that as the process. Does that help you, Megan?

MS. WARE: Yes, I mean I think as long as it's clear in the record that the work group could have Policy Board members, or there is some relationship to the Policy Board, I think that would be helpful. It sounds like it is clear on the record on that, so I appreciate that. I guess, to move to another point. I'm really struggling with the three years of a continued moratorium for a couple reasons. It feels like we're convening a work group to tackle some pretty big issues, and if we come to a resolution in that we've kind of hamstrunged ourselves to three years before we could potentially make a change. The same with the personal use fishery. If more of those questions are answered, it feels like we're saying, oh but we're not going to make that change for three years. My other concern is, and this is what we saw at the last three years, and this is not meant as a criticism of anyone.

But just human nature is, when we accept these long timelines, we tend to, you know hold off making progress on things until the very end. I think that's frankly the pattern we saw with this three-year moratorium. You know certainly the pace of the work group increased this year, when we knew we were in that last year. I'm going to move to amend to say, continue the moratorium for one year, and I'll see if I get a second.

CHAIR WHITE: Okay, move to amend, is there a second to the motion to amend?

MS. KERNS: I see no hands.

CHAIR WHITE: I have a question then, Toni. If this passes and we're in a three-year moratorium. When the work group has completed their work, at that point can the Section vote to come out of moratorium with the information, and to use the information that they've gotten from the work group?

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MS. KERNS: The Section can revisit the motion at any time.

CHAIR WHITE: Okay, so this doesn't stop us from doing anything for a three-year period, we can relinquish this at any time.

MS. KERNS: That's correct, it does not lock you in.

CHAIR WHITE: Thank you. Again, no hands raised for a second to Megan's motion to amend.

MS. KERNS: Correct.

CHAIR WHITE: Okay, so that motion fails due to a lack of a second. Any hands for discussion on the main motion?

MS. KERNS: I don't have any members of the Section; I do have two members of the public.

CHAIR WHITE: Okay, let's go to the public.

MS. KERNS: I'm sorry, Dennis has his hand up, got it up right at the end.

CHAIR WHITE: Okay, Dennis.

MR. ABBOTT: But just to Megan's proposed motion. The Board can always take further action. Whatever action we take today in any legislative process is open to be changed at a next meeting. Nothing binds us to the future.

CHAIR WHITE: Okay, thanks, Dennis, and now to the public, Toni.

MS. KERNS: Thank you, we have Ben Martens, followed by Chuck Plummer.

CHAIR WHITE: Okay, Ben.

MR. MARTENS: Thank you, Mr. Chairman. I think that there are two pieces that I would like to push into this process to talk a little bit more about. We're transitioning from a pretty data

rich fishery, when it came to our management, to potentially a data poor fisheries management situation, with the loss of survey work, catch data, et cetera.

I think that that would be an important part of this working group's discussion is what's actually happening to the science, and the data that we are making these decisions around, and whether that impacts the decisions you explore for personal use or explore relinquishing the management. I think that the underlying data questions and issues is really, really important, and must be a bigger part of this management discussion.

Then my second point is, I think we need fishermen involved in this conversation in some way, shape or form. While I appreciate the Section members and ASMFC and NOAA kind of convening and working through this, I'm having a bit more of a feedback loop with either the Advisors or a subset of the Advisors that can try and make sure that some of those questions, concerns, ideas are heard along the way, could be really, really important and helpful along the way.

If that means we need to reinvigorate the Advisory Panel a bit, it was disappointing to see only four people were able to attend yesterday. But I think that this is a big enough deal for a lot of us that it's an important way to get fishermen involved in this important conversation moving forward. Thank you.

CHAIR WHITE: Thanks, Ben. I think those are important points. I support your suggestion. Chuck, you have another comment?

MR. PLUMMER: Well, I think my hand goes up and down. I don't touch it, so I didn't have a comment. But if this proposal here would explore a personal use fishery at this time. I don't understand why we couldn't have, as a fisherman, why we couldn't have had personal use this year. To talk about having a three-year moratorium.

That would be like a ten-year closure on the shrimp industry. I guess it would be easier for the people doing the regulating to have three years of not doing

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it, but we're kind of flabbergasted sitting here, where three traps would make a big difference. I just don't understand why, so thank you.

CHAIR WHITE: Thank you, Chuck. Any other hands, Toni?

MS. KERNS: Yes, we have Gary Libby and then followed by Alli Murphy.

CHAIR WHITE: Okay, Gary.

MR. LIBBY: I just wanted to say that I'm not in favor of the three years moratorium. I thought we could probably, if we were going to do another moratorium do it for one year, and try to implement some of the stuff that we talked about in the AP. Have industry involved, which kind of is the same idea that Ben had.

We've got to have fishermen involved with this or you're not going to have fishermen trust in this. They're going to just say, they shut it down for three more years, they don't care about us. You know I hear that conversation all the time. I just think we should come back to the table every year and see where we are.

Try to do something to keep these surveys moving, because this is an important fishery to a lot of fishermen, especially in the state of Maine. I just think it should be amended to one year from now, and see what we can do later about personal use or possible small commercial use. That's it, thanks a lot.

CHAIR WHITE: Thank you, Gary. My intent as Chair if this work group can complete their work by next year, my intent would be that we meet, and at that time decide whether we would continue in the moratorium or implement any recommendations that the working group might come up with. I don't see us doing nothing for three years, so I agree with you on that. Who was the next hand, Toni?

MS. KERNS: You have Alli Murphy, and then followed by Alli you have Dennis Abbott.

CHAIR WHITE: Okay, Alli.

MS. MURPHY: I just wanted to comment that I'm supportive of the motion and proceeding with this working group, and also committed to participating. Thank you.

CHAIR WHITE: Thank you, Alli. Dennis, final word.

MR. ABBOTT: Yes, thank you, Mr. Chair. Just to be clear. Whether we declare the moratorium for one year or three years. As I said before, it doesn't preclude us from changing in the future. What would cause us to stop the moratorium? We would surely need more shrimp in the water, and you know that's not likely to happen.

But I think that every year when we meet as a Section, as we have through all the years, we're going to hear the assessment and we're going to make a decision. We have the ability next year to end the moratorium if conditions are favorable. Surely not likely to happen. I don't think we should get hung up about whether it's three years, and as I originally thought it was a suggestion, would be indefinitely, because we're going to be looking at it constantly.

CHAIR WHITE: Okay, time to vote.

MS. KERNS: Ritchie, just really quick. Megan just put her hand up.

CHAIR WHITE: Okay, Megan, quickly.

MS. WARE: Just a clarification and then I also would like to request time for a caucus, please. Ben and Vincent have brought up good points about, you know what happens in the absence of the Summer Survey. I'm trying to understand if this motion encompasses that discussion or not, and if it doesn't, I think it should. You know something to the effect of, and maybe this is a TC tasking, but what do we do in the absence of the Summer Survey? I guess that's a point of clarification, if that's included in this motion.

CHAIR WHITE: Yes, it most definitely is. I think it's on the record that I asked Dennis and he agreed that the Section members can put in questions to the work

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group that they would like to see answered. I added that the work group needs to look at how we would manage shrimp going forward, if we decide to do that, and what data is needed, and how do we get that data, and where does the money come from. Those are all questions that already are on the record that will go to the working group. Does that help?

MS. WARE: That does, thank you.

CHAIR WHITE: All right, two-minute caucus, is that all right? Any objections, two minutes.

MS. KERNS: I see no hands in objection.

CHAIR WHITE: Okay, time is up. Toni, are you ready?

MS. KERNS: I am, Ritchie.

CHAIR WHITE: Are all the hands down?

MS. KERNS: Yes.

CHAIR WHITE: Okay, all those in favor of this motion, please raise your hand.

MS. KERNS: I have Massachusetts and New Hampshire.

CHAIR WHITE: Okay, hands down. All those opposed, please raise your hand.

MS. KERNS: Maine.

**CHAIR WHITE: Okay, motion passes 2 to 1.** At this point I'm going to have to leave this meeting, I have a one o'clock that I have to drive to that I cannot miss, so I'll make an ask, Bob or Toni that you would take over Chair.

EXECUTIVE DIRECTOR BEAL: I'm happy to do it, Ritchie, Toni's got her hands full with everything else.

CHAIR WHITE: Yes, Bob, I appreciate it and I apologize for having to leave, but I don't have a choice, so thank you very much.

CHAIR ROBERT E. BEAL: Thanks, Ritchie, for your time. Toni, any other hands right now? I guess one question that popped into my head during the two-minute pause was, you know continue the commercial moratorium for three years, does this also preclude recreational fishing? If a state wanted to open up a recreational fishery, which is kind of what we talked about earlier. Is that not allowed, based on this motion?

MS. KERNS: I don't see any Section members with their hand up yet, Bob. We have Mike Armstrong.

CHAIR BEAL: Yes, Mike, go ahead.

DR. ARMSTRONG: I don't see anything in this motion that we couldn't put in a personal use sometime in those three years.

CHAIR BEAL: All right, thanks, Mike. Any other comments, Toni on what it means?

MS. KERNS: Cheri has her hand up.

CHAIR BEAL: Yes, Cheri, go ahead, please.

MS. PATTERSON: Yes, I agree with you, Bob. There is nothing here to indicate that there is no recreational moratorium for any of the time period. I ask the states around us, are you guys intending on opening up a recreational fishery based on this motion?

MS. KERNS: So far, I don't have any hands, and Bob, I'm going to the FMP. I don't remember off the top of my head if it speaks to recreational fisheries in the FMP or not. To my recollection I don't think it does, but I'm double checking, and Ray Kane has his hand up.

CHAIR BEAL: Thanks, Toni, for looking at the FMP and Ray, yes go ahead, please.

MR. KANE: Yes, so in the last sentence the Section would explore a personal use fishery at the same time.

These minutes are draft and subject to approval by the Northern Shrimp Section.  
The Section will review the minutes during its next meeting.



Draft Proceedings of the Northern Shrimp Section  
December 2021

The time being, move to continue the commercial moratorium for three years, and then in 2022 convene a work group of Section members. I think it's one in the same. The Section works for a personal use fishery at the time.

This motion was voted up, move to continue the commercial moratorium for three years. I'm not in disfavor of a recreational fishery. But I think in the motion itself I'm reading it that it will be looked at while the commercial moratorium is in place. As Dennis mentioned earlier, if we want to reconvene and do something different for a personal fishery or a recreational fishery next year, we can. But the way I read this motion it's one in the same.

CHAIR BEAL: Thanks, Ray. Any other hands, Toni?

MS. KERNS: Sorry, I was reading the FMP. I can tell you what the FMP says, and then we have hands, Mike Armstrong and Dennis Abbott.

CHAIR BEAL: Yes, if you could go through the FMP that would be great.

MS. KERNS: Yes, so the FMP states that no management measures are included for the recreational fishery. At this time the fishery is very limited, and is usually carried out with recreational lobster traps, and is for personal use. It does note that obviously, it notes that one exists, but it doesn't have any specific management measures to it or speak to any other part of the fishery that I see here.

CHAIR BEAL: All right, thanks, Toni, then we had Mike Armstrong and Dennis Abbot, was that right?

MS. KERNS: That is correct.

CHAIR BEAL: Mike, go ahead, please.

DR. ARMSTRONG: I mean any personal use, given the nature of the distribution, it's got to

be a commercial fisherman, I would think. At least in our state, and I think the feds, and probably all the other states. If you possess a commercial fishing permit, sometimes with an endorsement for the species or not. You can't bring home recreational catch. I think we would have to specifically come out with a management action to allow anyone with a shrimp permit to possess personal use amount.

CHAIR BEAL: Thanks, Mike, Dennis.

MR. ABBOTT: I think that we just caught ourselves in a wordsmithing problem here. When I made this motion using the previous motion as a guideline. When Megan made here initial motion, she had a commercial aspect of having the commercial moratorium, but also having a personal use fishery. I think that in the past, going back to Mike Armstrong's time as being Chair.

When we imposed a moratorium, we didn't specify, I don't believe, commercial or recreational or whatever. We just imposed a moratorium on the northern shrimp fishery. If it helps, I could make a quick motion that there will be a recreational moratorium for three years also. But if anyone feels that is necessary. But I think we just got caught up in word smithing here, and good pick up by whoever made the distinction. In a legislative process this would be a problem.

CHAIR BEAL: Thanks, Dennis. I think most, or it sounds like Ray and Mike and other's comments are that the intent here is not to allow for personal use or recreational fisheries to be opened at this time either. You know the motion clearly says commercial, but then the last section says personal use fisheries are going to be explored by the working group.

Then sort of the logical follow up to that is that, you know until we get a report from the working group, personal use or recreational fisheries cannot be opened or initiated in the states. If everyone is comfortable with that interpretation, I think we're covered. No fishing for shrimp is going to happen in the next three years, unless additional action is taken by the Section. Is there any objection or any concern with that interpretation?

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MR. ABBOTT: Yes, I would just ask Megan to comment. Barring any further clarification, could Maine folks think they could go recreationally shrimp fishing at this time?

MS. KERNS: Bob, if it's helpful, the last time the Section did a moratorium, Dustin found a previous motion, and it was a harvest moratorium not a commercial moratorium. I don't know if that helps you all.

CHAIR BEAL: Thanks, Toni. Megan, do you want to respond to Dennis's question about what is allowed in Maine, or what Maine's intentions might be, given the wording of this motion?

MS. WARE: Yes. Sorry for being quiet, I was just trying to scroll through our regulations and laws quickly, to kind of figure out what's going on, because I had not picked up on that. I think it would be wise to, if people are also taking this to mean that there is no recreational personal use fishery, that that motion be made, because in our law we do have an exemption for personal use. I don't think this motion would cover that. I think if people want to cover that, that that motion should be made.

MR. ABBOTT: I would make a motion.

CHAIR BEAL: Yes, Dennis, go ahead, please.

MR. ABBOTT: Move to have a moratorium on recreational fishery for 3 years. Excuse me, excuse me, one year, because we're going to be thinking about it. Let's leave it at one year for now.

CHAIR BEAL: Thanks, Dennis, can we call that recreational/personal use fishery? They kind of mean the same, but a little bit different sometimes.

MR. ABBOTT: Yes, that would be fine.

CHAIR BEAL: Okay, thank you. Is there a second to Dennis' motion?

MS. KERNS: Ray, is your hand up in seconding?

MR. KANE: No, I'm sorry, Toni, no it isn't. It's red, so it should be green, I'm sorry.

CHAIR BEAL: Anyone else interested in seconding the motion by Mr. Abbott?

MS. KERNS: Mike Armstrong, I think you have your hand up.

DR. ARMSTRONG: I do, I second for discussion purposes.

CHAIR BEAL: Thank you, Dr. Armstrong. Is there any discussion, or Dennis, do you want to say anything else about the motion? You've commented on it a little bit leading up to it.

MR. ABBOTT: No, I don't think so.

CHAIR BEAL: Thanks, Dennis, Mike, do you want to say anything?

DR. ARMSTRONG: Yes, I actually don't particularly like the wording of the motion. I would rather have amended the other motion, just to change commercial to harvest moratorium. I think it's just cleaner. If we go with three years for everything, because we can always come back and open the moratorium, if we decide we want a personal use fishery. Just as a point of clarification, can we open up an amendment and amend it? I'm sorry, a motion and amend it.

CHAIR BEAL: We can't amend a motion that has already been passed, and the previous motion that Mr. Abbot made and the Section voted on, has already been passed.

MR. ABBOTT: You can make a friendly motion to what I made. I think that might in this small group be acceptable. But like you said, you can't amend the past motion.

CHAIR BEAL: Mike, I guess from the Chair spot, is your concern with the one year versus three years?

DR. ARMSTRONG: Yes. I think as always, I don't want to give false hope. I would rather have it consistent with the commercial, and we can come back and liberalize if we feel like it. **I would ask if the motion maker would be amendable to a friendly amendment to change one to three.**

**MR. ABBOTT: I am, Dr. Armstrong, very amendable to your suggestion.**

**CHAIR BEAL: Excellent, thank you. Maya, if you would make that change and also record Dr. Armstrong as the seconder of the motion, please, and we'll be all set.** Any other comments from Section members on the new motion?

MS. KERNS: No other hands from Section members.

CHAIR BEAL: Thanks, Toni, any members of the public commenting on this motion?

MS. KERNS: I'm going to double check.

CHAIR BEAL: Excellent, I think we're ready to vote. Is there a need for a caucus on this, or are folks ready to go?

MS. WARE: Can we get 30 seconds?

CHAIR BEAL: No that's great, we'll give you a minute. You guys all set, Megan?

MS. WARE: Yes, go for it.

CHAIR BEAL: You sure?

MS. WARE: Yes, it's just the wonders of technology, but yes. I have the information I need; I think.

CHAIR BEAL: You didn't sound really confident. All right, we'll go ahead, Toni. I guess I'll go ahead and do it. All those in favor of the motion, please raise your hand.

MS. KERNS: I have Massachusetts, and that's it, no sorry, New Hampshire has raised their hand.

CHAIR BEAL: All right, New Hampshire and Massachusetts, thank you. Hands down, and like sign for those opposed to the motion.

MS. KERNS: I have no hands raised for opposition.

CHAIR BEAL: All right, do we have any null votes, n-u-l-l?

MS. KERNS: Maine is a null vote.

**CHAIR BEAL: All right, excellent, well that's all three of the votes, so the motion carries, 2 votes in favor and 1 null vote.** All right, so Toni and Dustin, are there other actions that we need to take today? I don't have the agenda open in front of me right now.

#### **ELECT VICE-CHAIR**

MR. COLSON LEANING: Yes, there is the last agenda item is to nominate, and hopefully elect, a Vice-Chair.

CHAIR BEAL: Thank you, Dustin. Is there a nomination for the position of Vice-Chair of the Northern Shrimp Section?

MS. KERNS: Megan Ware.

CHAIR BEAL: Megan, go ahead, please.

**MS. WARE: I would move to nominate Senator Miramant from Maine for the position of Vice-Chair.**

CHAIR BEAL: Excellent, thank you. Is there a second to nominate Senator Miramant as the Vice-Chair of the Section?

MS. KERNS: Cheri Patterson.

CHAIR BEAL: Thank you, Cheri, and is there any objection to electing Senator Miramant as the Vice-Chair of the Section?

MR. LEANING: Just a perfection of the motion, let's change that to Vice-Chair.

CHAIR BEAL: Any titles are fine, we're a flexible bunch.

MS. KERNS: I see no hands in objection.

**CHAIR BEAL: All right, then I think we are all set, and congratulations, Senator Miramant, you are the Vice-Chair of the Section now.** All right, same question, Toni and Dustin. Anything else we need to tackle today before we adjourn the Northern Shrimp Section?

MS. KERNS: I was going to say I don't see any hands up for anybody wanting to speak, but I'll let Dustin speak to any other things.

MR. LEANING: I trust that someone will raise their hand if they think otherwise, but as far as what I was aware of, I think we're all set to adjourn.

CHAIR BEAL: All right great, thanks. Yes, nothing procedural. Anything by the Section members under Other Business that you would like to bring up right now? I know we are running a bit long.

MS. KERNS: I see no hands.

CHAIR BEAL: All right, no hands, do I have a motion to adjourn?

MR. ABBOTT: Motion to adjourn.

MR. KANE: So, moved.

CHAIR BEAL: Dennis and Ray are ready to go, thank you both for motion and second to adjourn.

#### **ADJOURNMENT**

CHAIR BEAL: The Northern Shrimp Section stands adjourned, and Happy Holidays everyone, if I don't talk to you before the upcoming holidays. Thank you for your hard work today, everybody.

(Whereupon the meeting adjourned at 12:15  
p.m. on December 17, 2021.)

These minutes are draft and subject to approval by the Northern Shrimp Section.  
The Section will review the minutes during its next meeting.

# Atlantic States Marine Fisheries Commission

## Northern Shrimp Management Strategy Evaluation Work Group Meeting Summary

Conference Call  
February 4, 2022

**Work Group Members:** Cheri Patterson (Work Group Chair, NH), Megan Ware (ME), Kelly Whitmore (MA), Allison Murphy (NOAA Fisheries), Ritchie White (Section Chair, NH), Toni Kerns (ASMFC Staff), Dustin Colson Leaning (ASMFC Staff)

**Others Present:** Dennis Abbott (Section member, NH), James Boyle (ASMFC Staff)

The Northern Shrimp Work Group (WG) convened to discuss and outline next steps necessary to respond to the December 2021 Northern Shrimp Section (Section) tasking. The Northern Shrimp Section directed the WG to 1) develop a contingency plan in the event that the northern shrimp summer survey funding is lost, 2) outline the steps and associated ramifications of the Commission relinquishing control of the Northern Shrimp Fishery Management Plan (FMP), and 3) further develop a personal use fishery management program. The WG spent the majority of the meeting discussing issues 1 and 2, but will address issue 3 at a future meeting.

### Issue 1: Survey Funding

The Section was recently informed that the northern shrimp summer survey may be retired after the 2022 season. One WG member informed the group that the Atlantic Coastal Fisheries Cooperative Management Act (ACFCMA) no longer funds the summer survey as was once the case. In recent years, the Northeast Fisheries Science Center (NEFSC) has covered the funding of the survey. As such, if the summer survey is retired by NEFSC, additional funding will have to be raised to support a new survey.

Northern shrimp advisory panel (AP) members and industry members have previously indicated a willingness to collect fishery dependent data to help support the data gap. One WG member suggested the possibility of reforming a Research-Set-Aside (RSA) program. Several WG members acknowledged that RSAs can require a lot of administrative work, and a cost-analysis may be required before deciding whether to pursue that strategy. There would potentially be a need to hire a research coordinator to ensure the research effort was successful.

### Issue 2: Ramifications of Commission Relinquishing Control of FMP

The WG's discussion on this matter is preliminary and the WG identified several areas where additional fact-finding and confirmation of initial answers is needed. The Commission has never before relinquished control of a species' FMP. One WG member assumed the Section would need to make a vote to declare the Commission no longer manages northern shrimp. Following this, the Commission would likely need to send notification to partnering agencies of the decision. The Fisheries Policy Director, who sits on the WG, agreed to look into this matter further and determine whether legal consultation would be warranted.

The WG also discussed whether the National Marine Fisheries Service (NMFS) would assume jurisdiction of the northern shrimp fishery if the Commission relinquished management responsibility. The WG representative from NMFS indicated it is likely that NMFS would ask the New England Fishery Management Council (NEFMC) to assume management of the FMP. To bridge the gap between the Commission's relinquishment and the development of a Federal FMP by the NEFMC, NMFS would likely need to use emergency rulemaking authority under the Magnuson-Stevens Fishery Conservation and Management Act to enact preliminary measures, including a potential continuation of the fishing moratorium. Should additional questions arise on this topic, additional NMFS expertise may be required (legal, Magnuson-Stevens Act, etc.) One WG member asked if there have been any instances where NEFMC has opted out of assuming control of an FMP; while not a perfect comparison, a recent example is the Council's decision not to prioritize the development of fishery management regulations under MSA for the Northeast Canyons and Seamounts National Monument. When the commercial northern shrimp fishery was open in federal and state waters, harvesters operated under a small-mesh exemption permit that allowed use of that gear. One WG member speculated that as a consequence of NEFMC assuming control of the FMP, some commercial harvesters would likely drop their federal permits to fish for northern shrimp in state waters. Lastly, one WG member questioned how NEFMC would manage the fishery without the summer survey. This issue would likely need to be discussed further by NEFMC, NMFS and NEFSC for a definitive answer.

### Issue 3: Personal Use Fishery

The WG did not discuss this issue, but intends to pick up discussion at a future meeting.

The WG closed the meeting with a discussion of next steps. First, the WG acknowledged that there are several areas identified in the sections above where further research and consultation is needed. WG members agreed to follow up on these information gaps by the next meeting. Second, the WG acknowledged that the AP and Policy Board involvement was discussed at the last Section meeting in December. The WG will need to discuss the involvement of these two groups at a future meeting. Third, the WG prepared several questions for the Northern Shrimp Technical Committee (TC) to assist with the WG's task. Depending on TC member availability, the WG would like the TC to meet in February or March to review and provide feedback on the questions listed below.

### Questions for the TC

- If the summer survey is retired, what other metrics/surveys can be relied on to inform stock assessments?
- The summer survey is effective at capturing the 1.5 year old shrimp. What other surveys pick up on this recruitment trend that could replace the summer survey?
- How will assessment model performance be impacted without the summer survey data? Will the projections be affected?
- If we do adopt new surveys/data for future use in assessments, how will we bridge the gap from a continuity standpoint? How will we be able to piece together a time series with different surveys?

# Atlantic States Marine Fisheries Commission

## Northern Shrimp Technical Committee Meeting Summary

Conference Call  
March 4, 2022

**Technical Committee Members:** Margaret Hunter (Chair, ME), Robert Atwood (NH) Alicia Miller (NOAA), Steve Wilcox (MA)

**ASMFC Staff:** Dustin Colson Leaning, Katie Drew, Adam Lee

The Northern Shrimp Technical Committee (TC) met via conference call on March 4, 2022 to discuss several technical questions provided by the Northern Shrimp Work Group. TC feedback on the questions were provided below each question.

- If the summer survey is retired, what other metrics/surveys can be relied on to inform stock assessments? How will assessment model performance be impacted without the summer survey data? Will the projections be affected?

The Maine-New Hampshire Inshore Trawl Survey is not currently used within the stock assessment model, but the incorporation of the spring inshore data could help to a degree. The stock assessment scientist was able to run an initial sensitivity analysis by comparing an original model run without ME-NH survey data to a model run that contained ME-NH spring survey data without the last four years of data from the summer survey (Figure 2). The recruitment index differed slightly between the two model runs, but generally the surveys generate roughly similar trends. However, in the last four years, all survey indices have been in relatively close agreement around low values. When the summer survey data were dropped during a period (ending in 2011) when the remaining surveys (ME-NH and NEFSC) were showing opposing trends, the model had difficulty converging.

The stock assessment scientist reported that dropping the summer survey from the model would allow for continued monitoring of near term trends, but she was less certain on how sensitive the model would be to larger changes in shrimp abundance without the summer survey data.

Fall Northeast Fisheries Science Center (NEFSC) Bottom Trawl Survey data are not available for the current (terminal) year in the fall when stock assessment updates are usually conducted. Relying on just the ME-NH spring survey data could provide a general indication of stock health, but setting landings specifications could be a challenge. The summer survey provides important information on what proportion of biomass is comprised of spawning stock biomass, which would need to be collected from another survey. In effect, the loss of the summer survey would result in the loss of fine scale data that may be problematic for an actively managed open fishery. The ME-NH inshore spring survey may be problematic because female shrimp are transitioning from inshore to offshore during the spring, and the survey results may be

influenced by the timing of their migration, which could vary from year to year, through the relatively narrow coastal band that the survey covers. Also, the spring inshore survey may not pick up as many small (male) shrimp as the summer survey. This warrants further study.

The TC agreed that the potential effects of eliminating the summer survey on the northern shrimp stock assessment and projections should be evaluated further with additional sensitivity runs. The details on the additional work may be found in the accompanying document titled “Potential Effects of Eliminating the ASMFC Summer Survey on the Northern Shrimp Stock Assessment.”

On the topic of additional surveys, the TC was concerned about comments at the last Section meeting regarding collecting winter fishery dependent data for improved understanding of the stock. The TC clarified that winter fishery dependent data collection is not a suitable replacement for conducting a survey for several reasons. First, weather, location, and timing play a large role in whether shrimp are encountered or not during the winter. Northern shrimp abundance can be highly variable temporally and spatially as the egg-bearing females move inshore from west to east over time, and then return offshore after egg hatch. The timing of this sequence varies from year to year, making winter the worst possible time of year for conducting surveys to inform stock assessment science. Second, sampling from a wide range of locations is important for a complete picture of the stock health, meaning trap sampling is unlikely to be suitable, since it would focus mostly on midcoast Maine. Third, fishery catch per unit effort (CPUE) does not always correspond to stock health. For example, CPUE in 2011-2012 was similar to CPUE in the 1990s yet the health of the stock over those two time periods were very different. Lastly, smaller shrimp (males and transitioning) are generally under-represented during a winter fishery, because many stay offshore or aren't retained by the gear. Also, size distribution data may not be reliable because they vary from vessel to vessel, and the trap fishery generally doesn't catch small shrimp, which doesn't add value to the scientific understanding of the stock.

- The summer survey is effective at capturing the 1.5 year old shrimp. What other surveys pick up on this recruitment trend that could replace the summer survey?

The TC agreed that the spring ME-NH Inshore Survey catches 1+ year-old shrimp. The fall inshore ME-NH survey catches fewer shrimp, with greater variability than the other surveys, but it does catch some 1.5 year-olds, and also some young-of-the-year. Unfortunately, the NEFSC Fall Bottom Survey and fall inshore ME-NH survey data are not available in time for the fall assessment. However, the young-of-the-year data from one year would be available as age 1.5 data for the fall assessment the following year.

The NEFSC Spring Bottom Trawl Survey is not used for the shrimp model, and shrimp samples were not worked up in some years. It may be a viable option in the future, although it is possibly confounded by the spring migration of adult females. TCs in the past preferred the fall NEFSC survey over the spring because “Correspondence among research surveys and fishery



indices of abundance suggests that the NEFSC autumn survey tracks resource conditions more closely than the NEFSC spring survey (ASMFC Assessment Report, 1996)”.

- If we do adopt new surveys/data for future use in assessments, how will we bridge the gap from a continuity standpoint? How will we be able to piece together a time series with different surveys?

The TC agreed that funding a side-by-side calibration would be a challenge. Several years of data would likely be needed in order to sort out survey catchability/selectivity differences. The stock assessment modeling software VAST may be able to offer a shortcut. So long as there is spatial overlap between two surveys, VAST could be used to assist with standardizing the indices instead of conducting side-by-side calibration tows. However, if VAST’s statistical calibration process is not successful, roughly 5-10 years of data collection would be needed before the survey data could become useful for model input.

The TC discussed the possibility that the ME-NH inshore survey may also face funding challenges in the coming years. If funding is available, ensuring the continuation of the ME-NH inshore survey would be preferable over funding a new survey, especially from a continuity and long-term data collection standpoint.

The TC also briefly discussed the potential impact of offshore wind farm construction. Whatever future plans there are for any of these surveys, wind farms should be considered. At this time, it is difficult to anticipate where these wind farms will be and the impacts they will have on the surveys.

# Atlantic States Marine Fisheries Commission

## Potential Effects of Eliminating the ASMFC Summer Survey on the Northern Shrimp Stock Assessment

April 2022

### Introduction

Funding for the ASMFC-NOAA Summer “Shrimp” Survey is in jeopardy, and it is likely that the survey will be eliminated in the next few years. The Summer Survey is the longest time series with the best information on the Gulf of Maine northern shrimp population, but there are other surveys that provide information on northern shrimp, the NEFSC Fall Bottom Trawl Survey and the ME-NH Spring Inshore Trawl Survey, that can support the model in the future. The NEFSC Fall Trawl Survey is currently included in the model, but the data are generally not available for the terminal year of the assessment, as the assessment is run while the survey is taking place. The ME-NH Inshore Survey is not currently included in the assessment, but the spring data would be available for the terminal year of the assessment. All three surveys have shown similar trends over the years, with the exception of a period between 2007-2010 where the Summer Survey and the NEFSC Bottom Trawl Survey were declining and the ME-NH Inshore Trawl Survey was increasing (Figure 1). The ME-NH Trawl Survey peaked in 2010, while the other two surveys peaked in 2006, but after 2010, the ME-NH Trawl Survey declined precipitously and joined the other surveys at time-series lows from 2013-2021.

Note that this report does not address species other than northern shrimp, although several other species assessments use Summer Survey data.

### Methods

To look at potential effects of losing information from the Summer Survey in the near term, the Northern Shrimp Technical Committee (NSTC) compared the results from the current northern shrimp stock assessment model that used different configurations of input data that included truncating the Summer Survey from 2018-2021. The scenarios explored were:

1. Base case: all years of Summer Survey (1984-2021) and NEFSC Fall Bottom Trawl (1986-2019)
2. Base case + ME-NH: all years of Summer Survey (1984-2021) and NEFSC Fall Bottom Trawl (1986-2019), plus all years of the ME-NH Spring Inshore Trawl Survey (2003-2021)
3. Shorter Summer Survey: Remove 2018-2021 from the Summer Survey time series, include all years of the NEFSC Fall Bottom Trawl
4. Shorter Summer Survey + ME-NH: Remove 2018-2021 from the Summer Survey time series, include all years of the NEFSC Fall Bottom Trawl and all years of the ME-NH Spring Inshore Trawl Survey
5. No Summer Survey at all + ME-NH: Drop the Summer Survey time series entirely and fit the model with only the NEFSC Fall Bottom Trawl and the ME-NH Spring Inshore Trawl Survey

In addition, the NSTC was interested in looking at the potential impacts of survey changes during a time period of conflicting information in the indices, so a series of runs with a terminal year of 2011 was also conducted. Those scenarios included:

6. Base case, end in 2011: Summer Survey (1984-2011) and NEFSC Fall Bottom Trawl Survey (1986-2010)
7. Base case + ME-NH, end in 2011: Summer Survey (1984-2011), NEFSC Bottom Trawl Survey (1986-2010), and ME-NH Spring Inshore Trawl Survey (2003-2011)
8. Shorter Summer Survey + ME-NH, end in 2011: Remove 2009-2011 from the Summer Survey time series, include all years of the ME-NH Spring and NEFSC Fall surveys

In addition to comparing the model estimates of spawning stock biomass,  $F$ , and recruitment from the different scenarios, a set of short term projections were run using Scenario 4 (shortened Summer Survey with the ME-NH Spring and NEFSC Fall surveys, terminal year 2021).

## Results

### *Terminal Year 2021 Runs*

Overall, losing a few years of the Summer Survey data did not significantly impact the results of the stock assessment. However, without the Summer Survey, the model was more optimistic about the stock trajectory in recent years. The scenario that dropped the Summer Survey entirely was the most optimistic, both historically and in recent years. Without the Summer Survey, population trends were generally similar, but the model estimated a slightly higher SSB and recruitment and lower  $F$  at the beginning of the time series (although not in all years), and SSB did not decline as significantly as the base model run from 2012-2021 (Figure 2-4). The shortened Summer Survey without the addition of the ME-NH Spring Survey was the most optimistic of the runs that did include the Summer Survey, showing higher recruitment (Figure 2) and a more rapidly increasing trend in SSB (Figure 3) from 2018-2021 compared to the base model. Adding the ME-NH Spring Inshore Trawl Survey to the run with the shortened Summer Survey brought those estimates of recruitment and SSB more in line with the estimates of the base run with the full Summer Survey. The 2020 estimate of recruitment for that scenario was still very high compared to the base run and the 2019 and 2021 estimates; however, none of the surveys were conducted in 2020, and that was the second to last year of the time series, so there was very little information to help inform that data point. Estimates of average  $F$  were very similar across the runs as well (Figure 4).

### *Terminal Year 2011 Runs*

The model struggled to converge somewhat with the terminal year of 2011, but the configurations that did converge showed very similar results across all scenarios, in comparison to the base case with the terminal year of 2011 (Figures 5-7). The base case with the terminal year of 2021 had lower  $F$  and higher SSB during this time period, the effect of adding more years of data to the model. Although the trend in the ME-NH Spring Inshore Trawl Survey differed from the trend in the other surveys, the additional information from the catch-at-length supported the trend in the other surveys and the model was not strongly influenced by the ME-NH Spring Inshore Trawl Survey trend.

### *Projections*

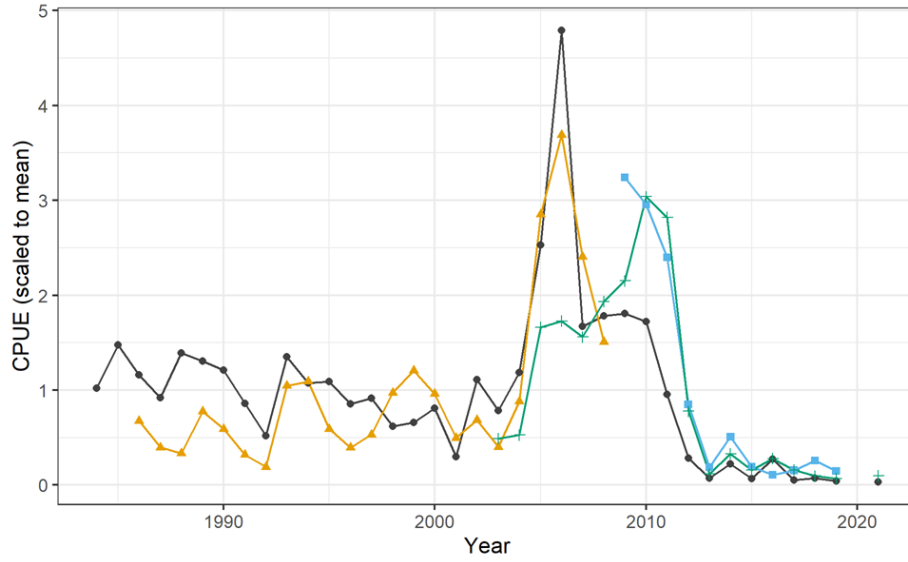
The scenario with the shortened Summer Survey time series and the ME-NH Spring Inshore Trawl Survey included were more optimistic in the first two years of the projections than the base run (Figures 8-9). This was most likely due to the higher estimates of SSB and recruitment in the most recent few years, especially the high 2020 recruitment value. However, under the recent M and recent recruitment conditions, SSB declined after that and even under zero fishing mortality, the probability of SSB being above SSB in 2021 was very low.

### **Discussion**

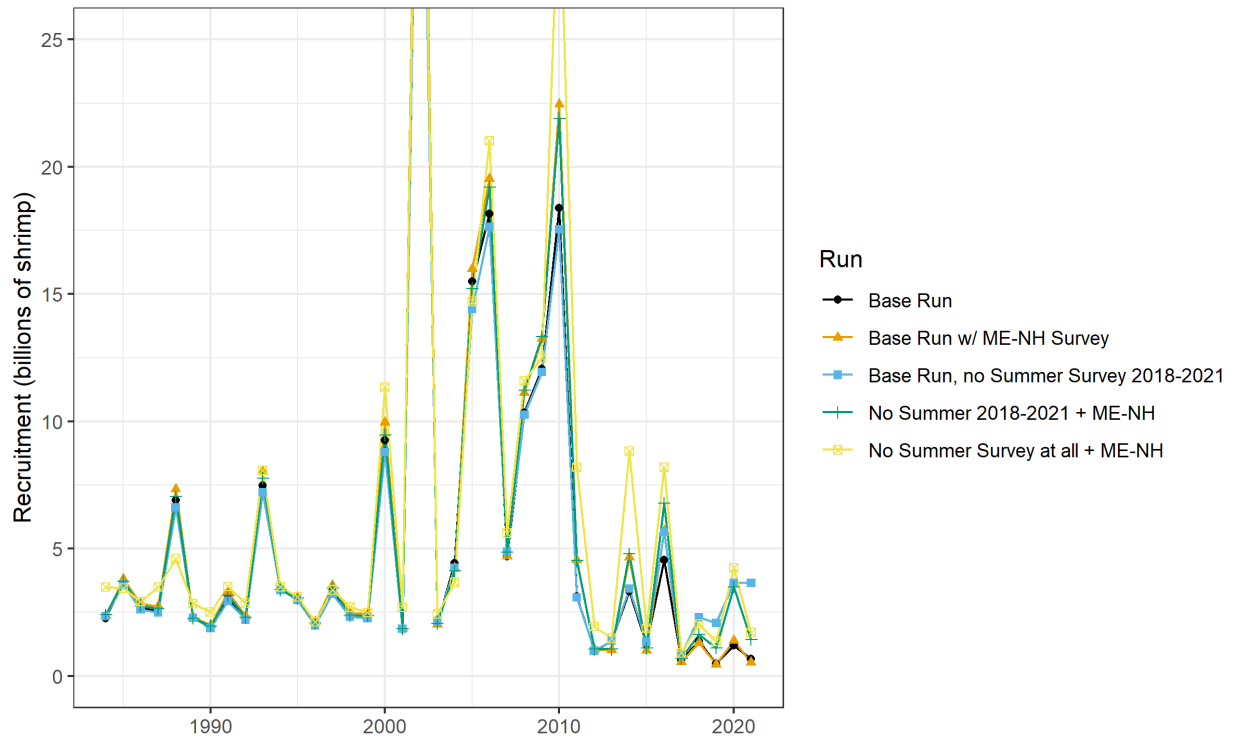
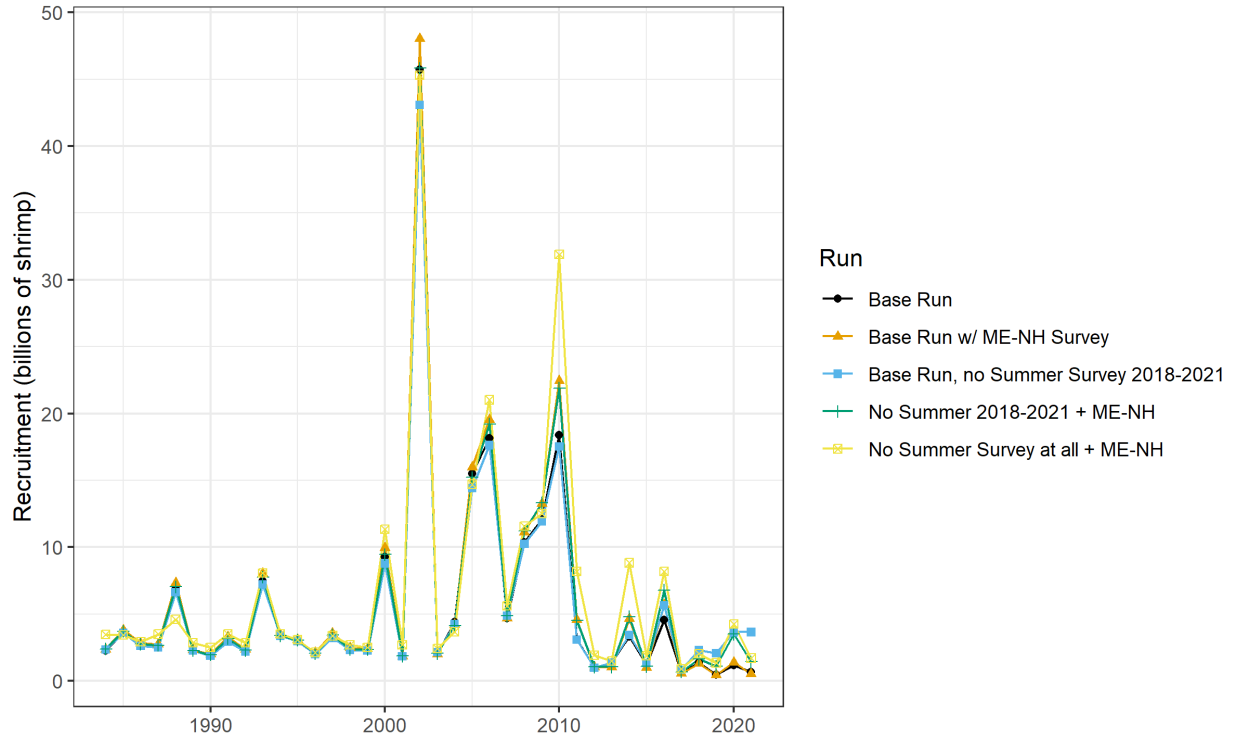
While removing the last few years of data from the Summer Survey did not significantly change our perception of stock status in recent years – the stock was still depleted compared to the historical abundance, and SSB in 2021 was still below the 20<sup>th</sup> percentile of 1984-2017 (Figure 10) – the models were all more optimistic about SSB and recruitment for those years without the Summer Survey data. Including the ME-NH Spring Inshore Trawl Survey with the shortened Summer Survey produced results that were more similar to the base run than to the run with only the shortened Summer Survey and the NEFSC Fall Bottom Trawl Survey. Similarly, projections indicated that under current M and recruitment conditions, even very low or zero fishing pressure will cause the stock to decline in a few years.

The runs with the terminal year of 2011 had more difficulty converging, which may have been due to the difference in trends between the ME-NH Spring Inshore Trawl Survey and the NEFSC Fall Bottom Trawl Survey during this time or may have been due to the pattern in the other indices, which showed a sharp increase followed by a sharp decrease over approximately a single shrimp generation. Adding the 2011 data from the NEFSC Fall Survey was required to get these runs to converge; in a real assessment, those data would not have been available during the usual assessment timeline. This suggests that conflicting data in future years may cause problems with convergence or may require a delay in the assessment timeline to incorporate the NEFSC Fall Bottom Trawl Survey data, but the degree to which that affects the results will depend on how significant the divergence is between the data sources.

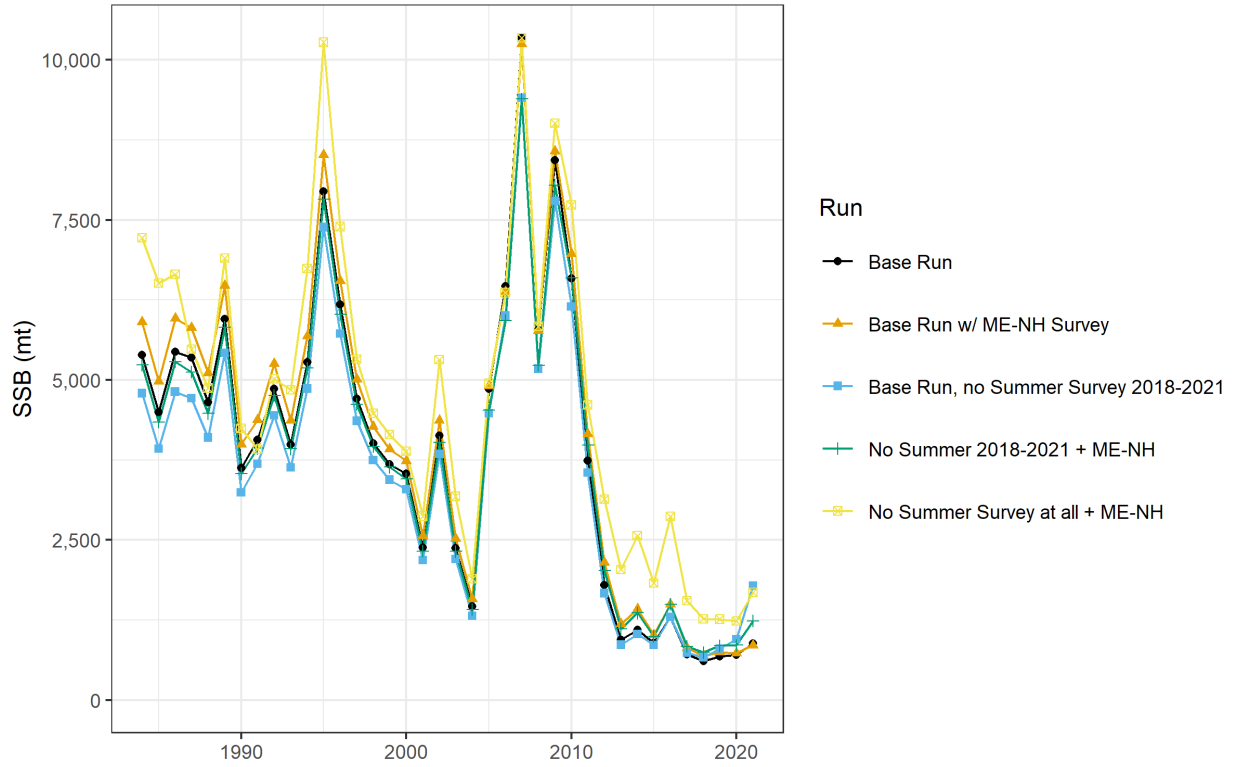
The NEFSC Fall Bottom Trawl Survey and the ME-NH Spring Inshore Trawl Survey can still inform the stock assessment model in the absence of the Summer Survey in the near term. However, results should be interpreted cautiously, as they were more optimistic than the results of the model with the Summer Survey. A full simulation study would be necessary to evaluate the degree of this bias and long term consequences of the loss of the Summer Survey.



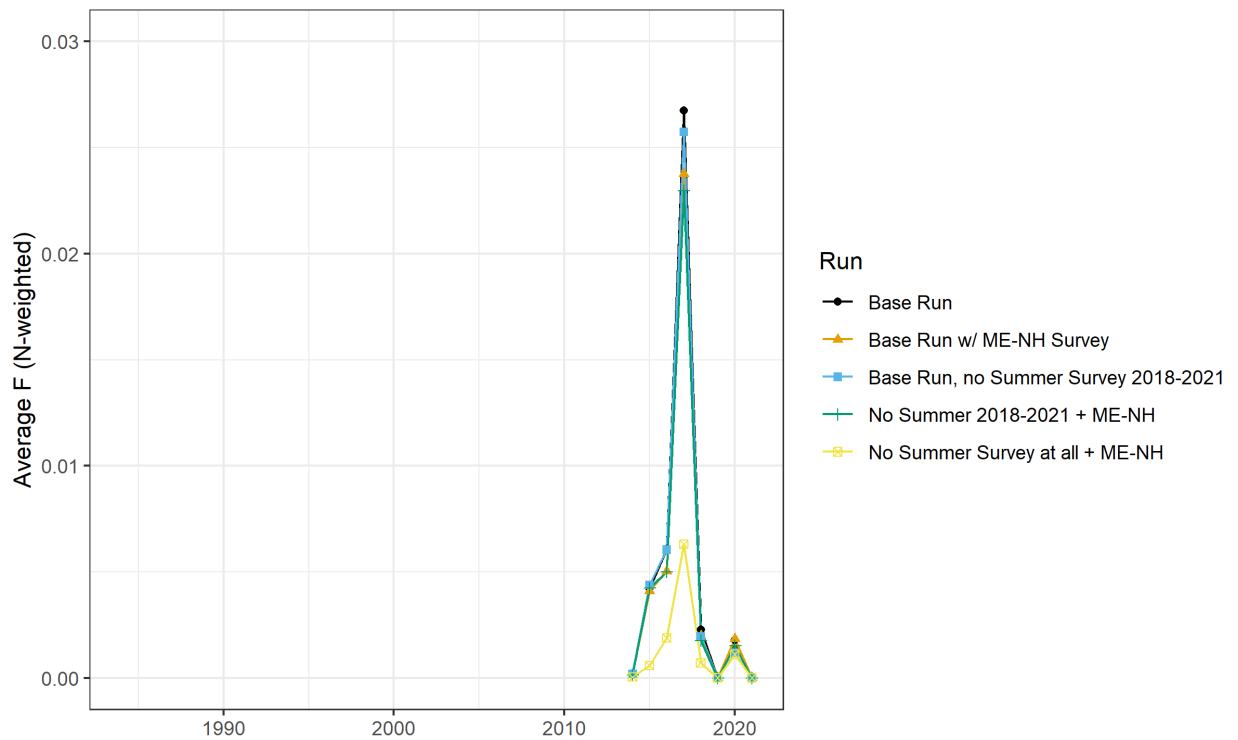
Survey — ASMFC Summer Survey — NEFSC Fall Albatross — NEFSC Fall Bigelow — ME-NH Spring  
**Figure 1. Standardized survey indices of abundance for Gulf of Maine northern shrimp for 1984-2021.**



**Figure 2. Recruitment estimates under different survey scenarios for the model with a terminal year of 2021. Y-axis has been truncated to show detail in lower figure.**

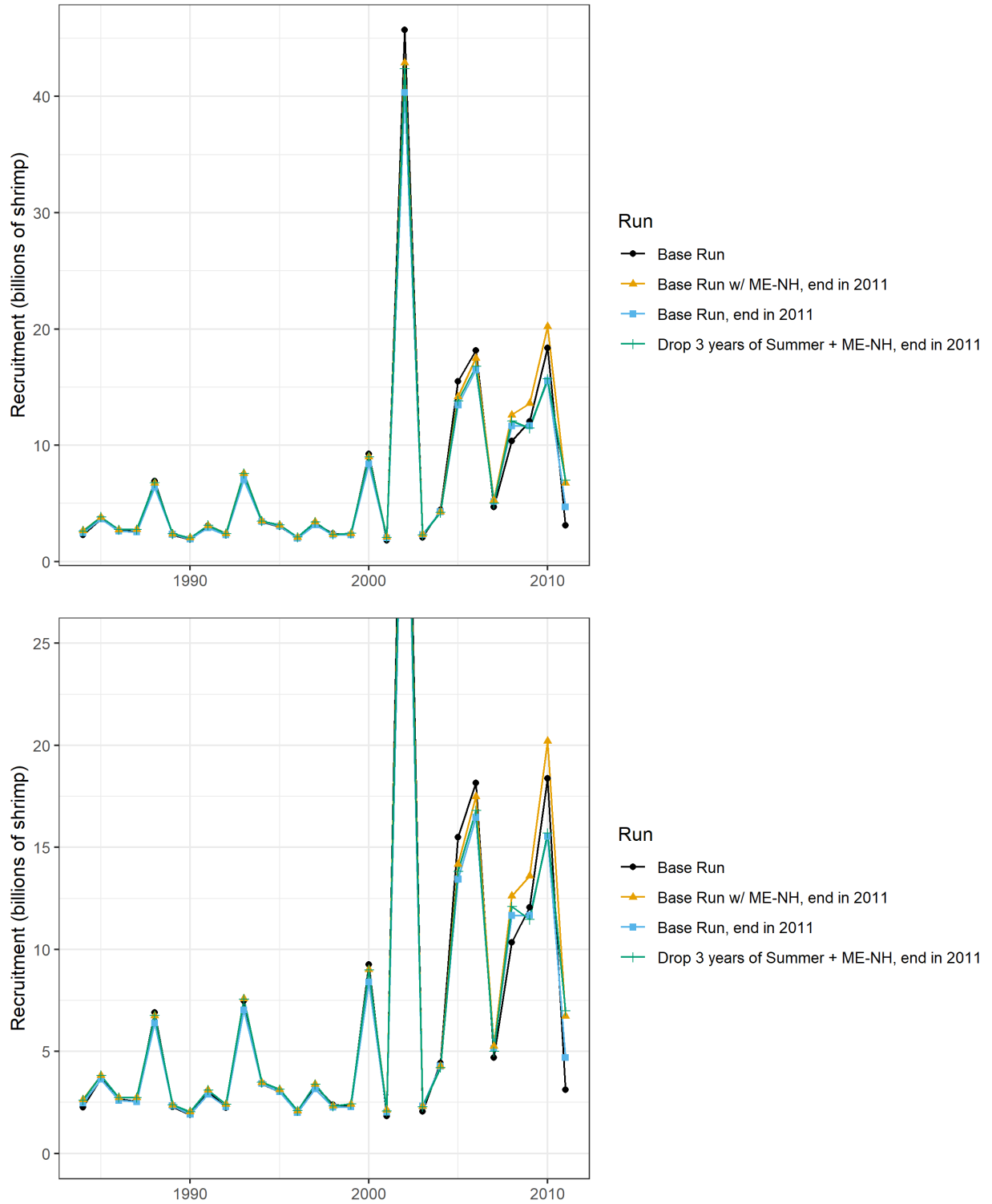


**Figure 3. SSB estimates under different survey scenarios for the model with a terminal year of 2021.**

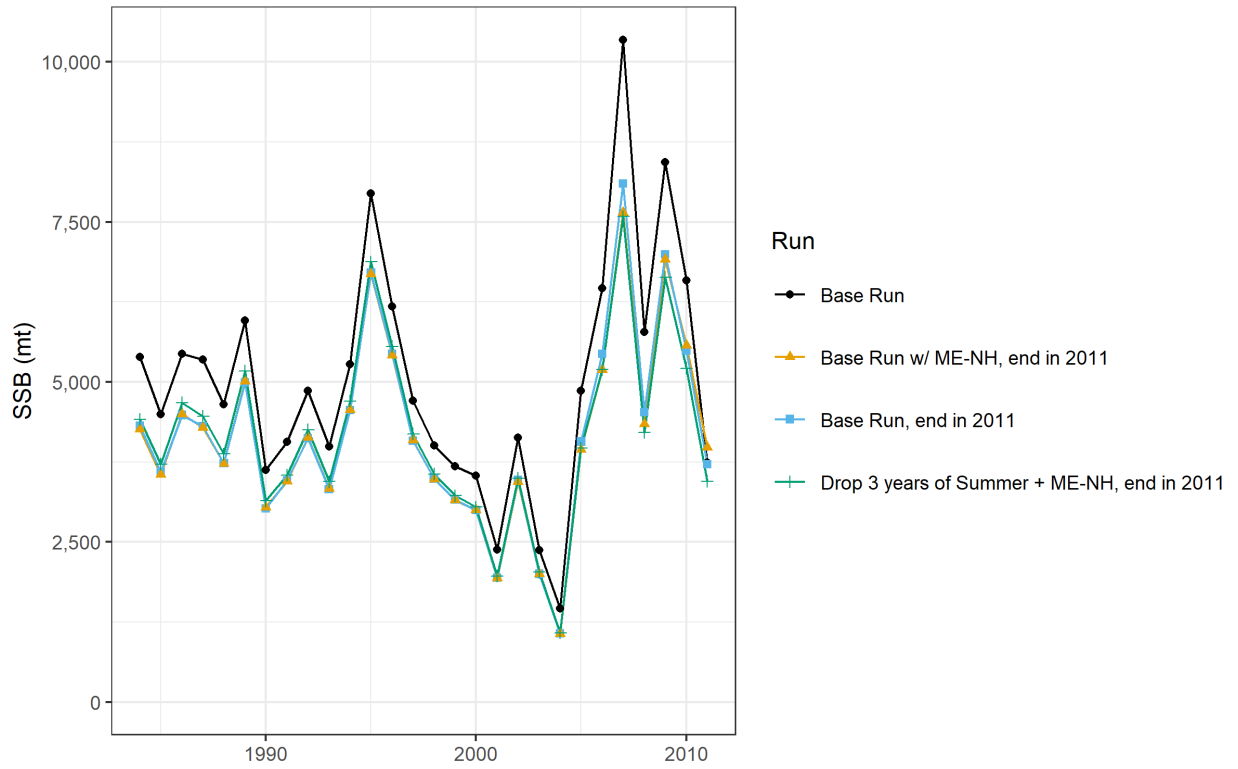


**Figure 4. Average  $F$  estimates under different survey scenarios for the model with a terminal year of 2021. Y-axis has been truncated to show detail in lower figure.**

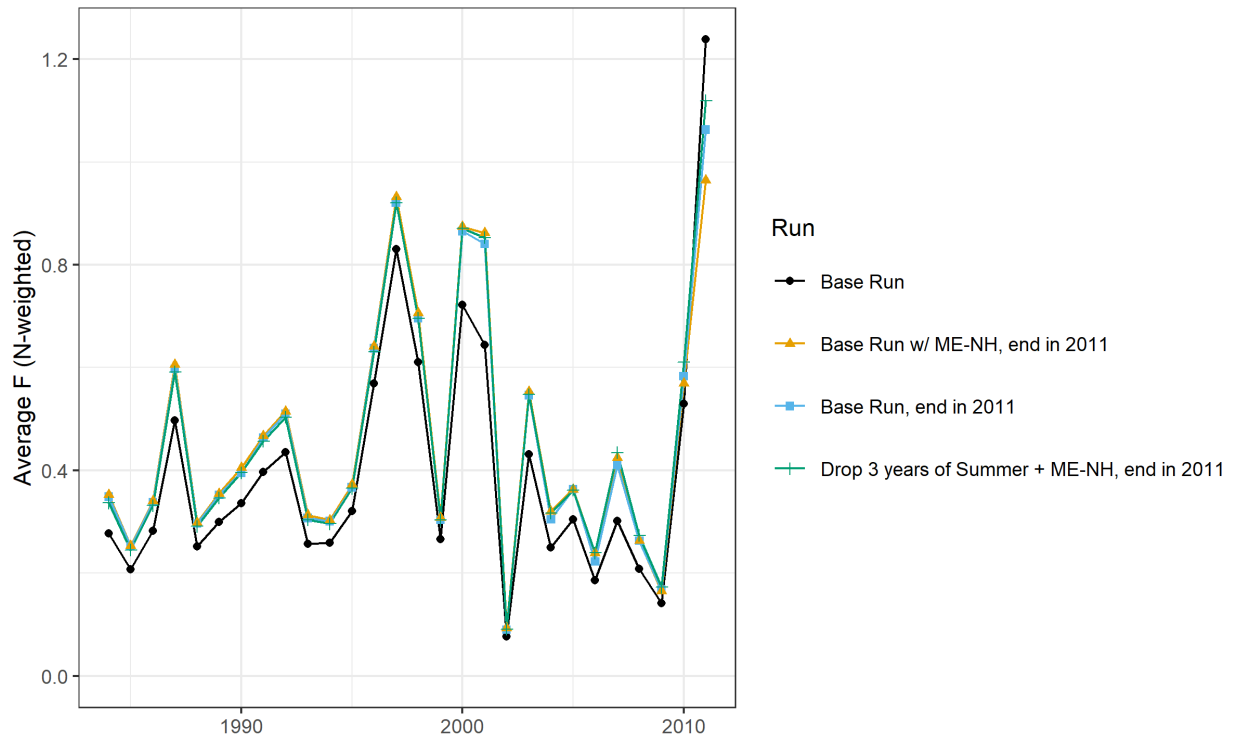




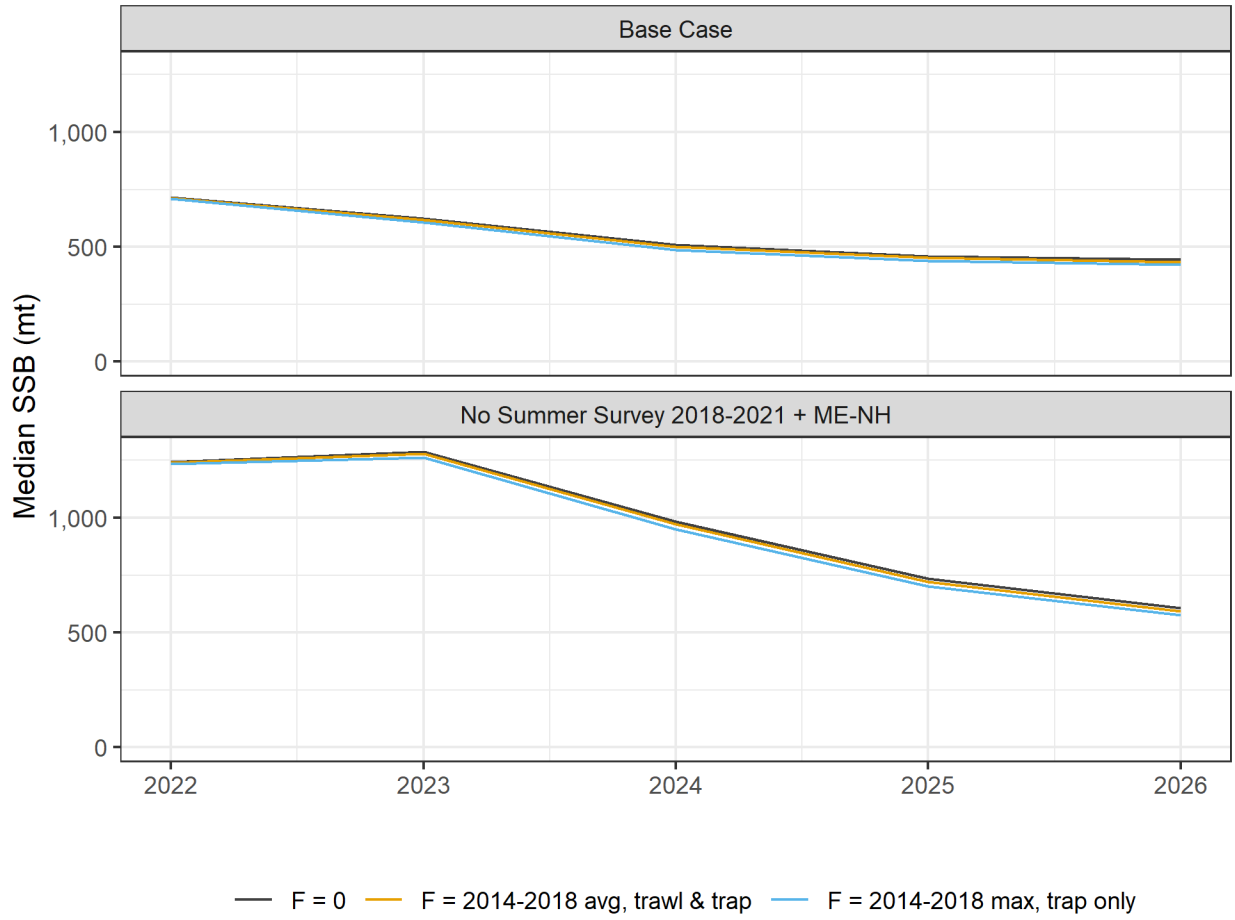
**Figure 5. Recruitment estimates under different survey scenarios for the model with a terminal year of 2011. Y-axis has been truncated to show detail in lower figure.**



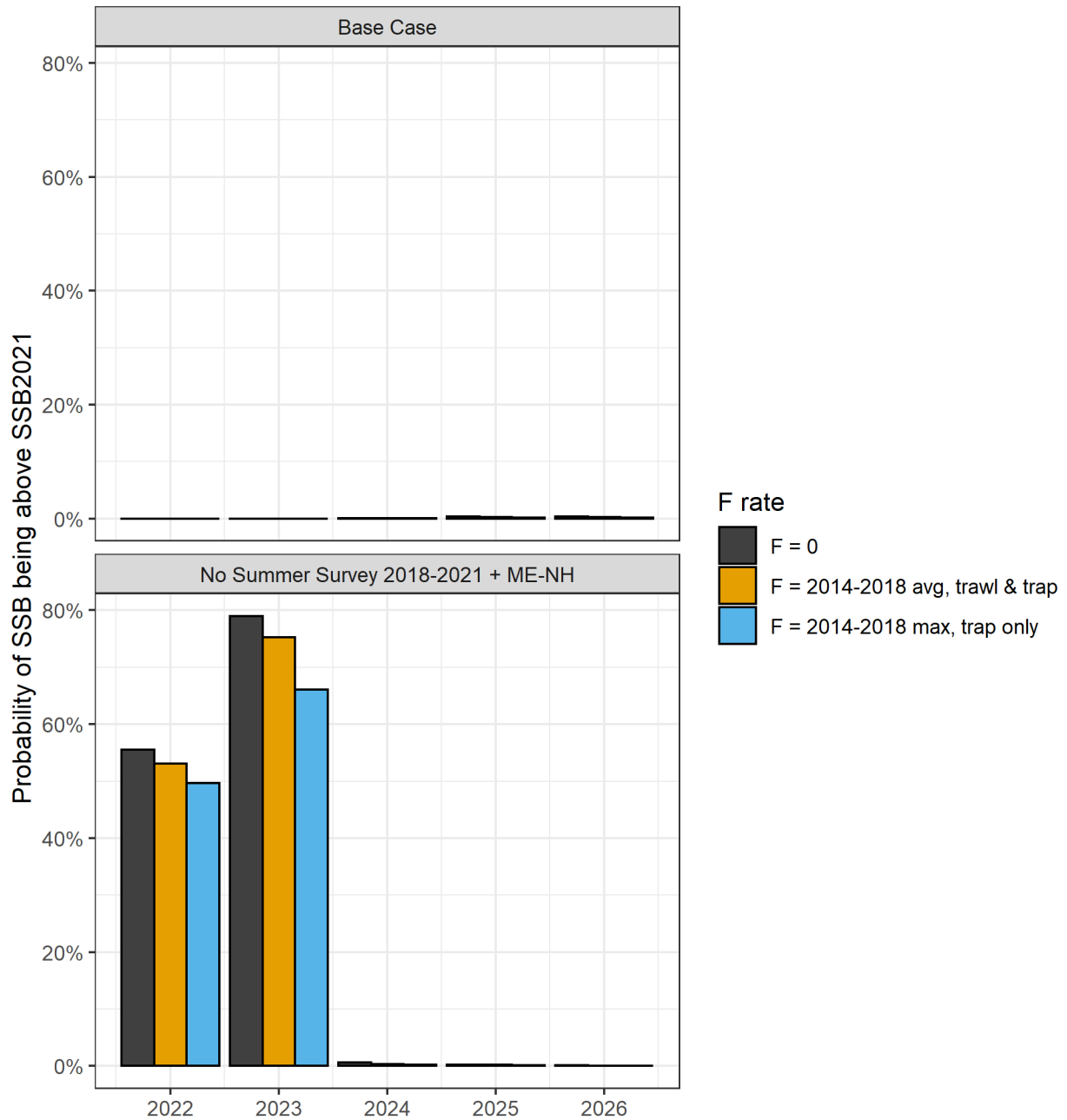
**Figure 6. SSB estimates under different survey scenarios for the model with a terminal year of 2011.**



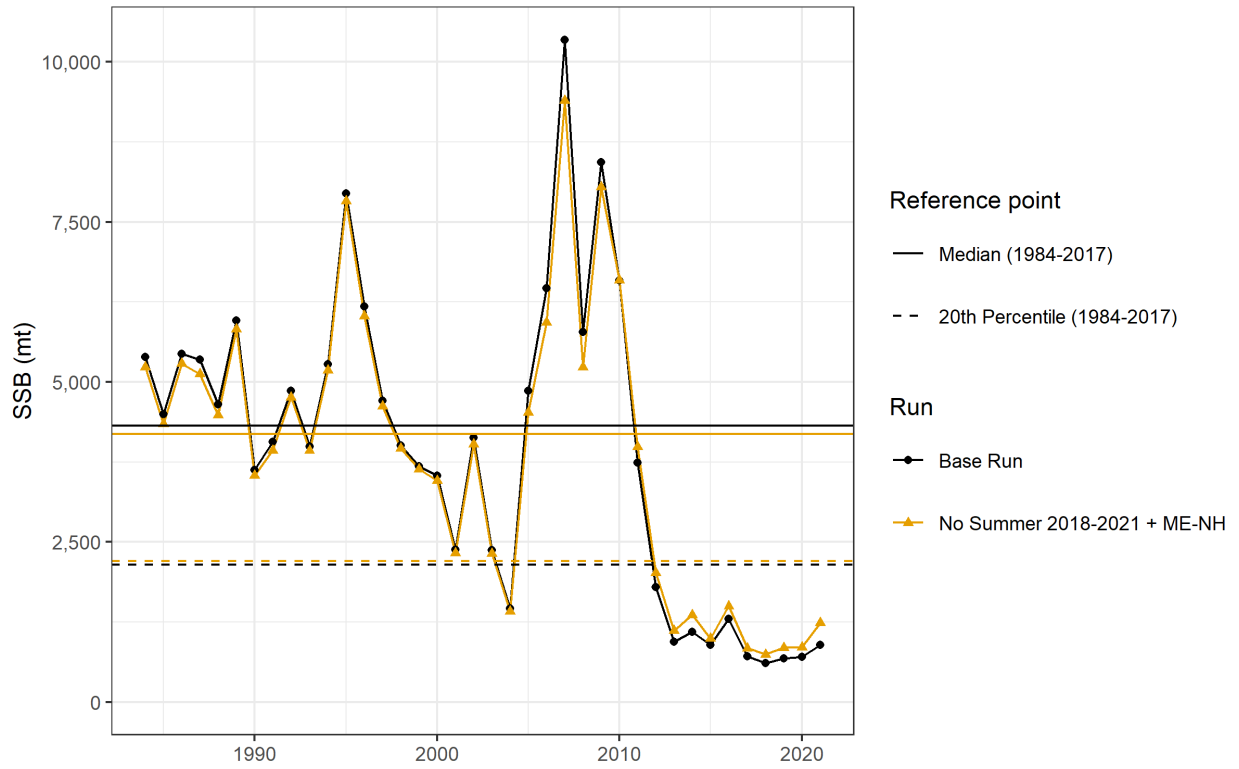
**Figure 7. Average  $F$  estimates under different survey scenarios for the model with a terminal year of 2011.**



**Figure 8. Median projected SSB under recent M and recruitment conditions and varying  $F$  rates for the base model run (top) and the run with the shortened Summer Survey and the ME-NH Spring and NEFSC Fall surveys (bottom).**



**Figure 9. Probability of SSB being above SSB<sub>2021</sub> under recent M and recruitment conditions and varying F rates for the base model run (top) and the run with the shortened Summer Survey and the ME-NH Spring and NEFSC Fall surveys (bottom).**



**Figure 10. SSB from the base run and the run with the shortened Summer Survey and the ME-NH and NEFSC surveys plotted with the median and 20<sup>th</sup> percentile of SSB from 1984-2017 for each model.**

# Atlantic States Marine Fisheries Commission

## Northern Shrimp Management Strategy Evaluation Work Group Meeting Summary

Conference Call  
May 16, 2022

**Work Group Members:** Cheri Patterson (Work Group Chair, NH), Megan Ware (ME), Melissa Smith (ME), Kelly Whitmore (MA), Allison Murphy (NOAA Fisheries), Ritchie White (Section Chair, NH), Toni Kerns (ASMFC Staff), Dustin Colson Leaning (ASMFC Staff)

**Others Present:** Adam Lee (ACCSP Staff)

The Northern Shrimp Work Group (WG) met to discuss the technical committee's (TC) report on potential effects of eliminating the summer shrimp survey, review the pros and cons of the Commission dropping the Northern Shrimp Fishery Management Plan (FMP), and begin discussing next steps should the Northern Shrimp Section (Section) decide to forward a recommendation for the Commission to relinquish control of the FMP.

Staff provided a brief overview of the TC's responses to the WG's questions and the report on potential effects of eliminating the summer shrimp survey. One WG member pointed out that if the summer survey no longer operated, it would increase the reliance on the spring ME-NH inshore survey and the fall NEFSC Bottom Trawl Survey. Considering that the funding situation for the spring ME-NH inshore survey is also tenuous, the WG thought it would be important to flag northern shrimp management's increased reliance on the survey during future survey funding discussions.

The WG also briefly discussed pros and cons of the ramifications of the Commission relinquishing the Northern Shrimp FMP. The following bullets were prepared:

- Would likely require development of a federal FMP for northern shrimp either through the New England Fishery Management Council (Council) or National Marine Fisheries Service (NOAA Fisheries) via secretarial action.
  - Neither a pro nor a con.
- Federal waters would be beholden to Magnuson-Stevens Fishery Conservation and Management Act requirements while state waters would be subject to state regulations.
  - Pro for state waters.
  - Con for fisheries previously in federal waters assuming federal waters would be closed to fishing (although this is not different from the present situation).
- States could act independently in state waters regarding the northern shrimp resource; this could mean states take different approaches in their own state waters.
  - Pro in terms of flexibility for states but potential con if one values consistency between the states.
  - Con if state management is inconsistent with a future Federal FMP. Section 306(b) of the Magnuson-Stevens Fishery Conservation and Management Act

allows the Secretary to regulate a fishery within state boundaries if a state has taken action that substantially and adversely affects carrying out a Federal FMP.

- The Commission would not devote staff time to northern shrimp, includes ISFMP staff and stock assessment staff.
  - Pro in this frees up ASMFC staff time to work on high priority species.
  - Con in terms of lost institutional management and scientific knowledge.
- Establishes a process and circumstance in which the Commission relinquishes control of a species.
  - Pro, probably good to understand how this process works.
- WG envisions no change to the existing catch reporting system; if there were landings in state waters, harvesters and dealers would be required to submit trip level reports and that data would be stored in ACCSP.
  - Pro in that existing systems would not have to be altered.
- Assuming a moratorium is maintained in federal waters, likely no need for any changes to the current permitting systems (states issue the permits and there is no federal northern shrimp permit).
  - Pro in that existing systems would not have to be altered.
- Loss of funding to states through ACFCMA
  - Con

The WG also discussed in greater detail the steps involved in the process of the Commission relinquishing control of the FMP. The Section would first have to make the recommendation to the ISFMP Policy Board at a Section meeting. Next, the Policy Board would consider forwarding the recommendation to the Commission. The recommendation for relinquishing the FMP would also need to be accompanied by a rationale. The process of the Commission relinquishing control of the FMP could be completed through one Commission meeting, but the WG agreed that dedicating more time to this process would likely be preferable to allow for adequate coordination and preparation for the next phase of management for northern shrimp.

WG representatives from Maine, New Hampshire, and Massachusetts provided some initial thoughts on what each state's fishery would look like within state waters should the Commission decide to relinquish control of the FMP. The following comments are preliminary ideas and subject to change. The Massachusetts representative indicated that the Commission relinquishing control of the FMP would not likely cause an immediate response. Massachusetts would not pursue a trap fishery considering that vertical lines are already closed in state waters due to the protections for North Atlantic Right Whales. The representative from New Hampshire reminded the WG that trawling is not allowed in state waters. Instead they would potentially implement a trap fishery, but would need to check with their industry members first to see if they are interested in participating in a trap fishery. The Maine representative said that if the Commission relinquished authority, Maine would likely first engage in a dialogue with industry representatives to see what their preferences are. The Maine representative indicated the possibility of opening a personal use trap fishery with a limited season and possession limit, similar to what was proposed by Maine at the Section meeting in December of 2021.



The WG then discussed the timing of the Commission relinquishing control of the Northern Shrimp FMP and next steps from the federal perspective. The WG agreed that this discussion warranted at least two Section meetings. The first meeting would consist of presenting the work conducted by the WG and TC thus far, and the second would involve taking up the question of whether to forward the recommendation to relinquish the FMP. Ideally, the first Section meeting would take place in late summer and the second in the fall. If the Commission relinquished control of the FMP, northern shrimp would still need to be managed in federal waters. NOAA Fisheries would likely recommend that the Northern Shrimp FMP be picked up by the Council. However, the WG agreed that it would likely take at least a year for the Council to transition to a new FMP for northern shrimp. The federal representative on the WG indicated that in the interim NOAA Fisheries would likely begin writing an emergency rule, if and when it becomes clear that the Commission intends to relinquish control of the FMP.