PROCEEDINGS OF THE

ATLANTIC STATES MARINE FISHERIES COMMISSION

SHAD AND RIVER HERRING MANAGEMENT BOARD

Webinar
October 19, 2021

Approved May 3, 2022

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TABLE OF CONTENTS

INDEX OF MOTIONS

ATTENDANCE

Board Members

Megan Ware, ME, proxy for P. Keliher (AA)
Cheri Patterson, NH (AA)
Dennis Abbott, NH, proxy for Sen. Watters (LA)
Mike Armstrong, MA, proxy for D. McKiernan (AA)
Raymond Kane, MA (GA)
Rep. Sarah Peake MA (LA)
Phil Edwards, RI, proxy for J. McNamee (AA)
David Borden, RI (GA)
Eric Reid, RI, proxy for Rep. Sosnowski (LA)
Justin Davis, CT (AA)
Bill Hyatt, CT (GA)
Sen. Craig Miner, CT (LA)
John Maniscalco, NY, proxy for J. Gilmore (AA)
Emerson Hasbrouck, NY (GA)
John McMurray, NY, proxy for Sen. Kaminsky (LA)
Heather Corbett, NJ, proxy for J. Cimino (AA)
Tom Fote, NJ (GA)
Adam Nowalsky, NJ, proxy for Asm. Houghtaling (LA)
Kris Kuhn, PA, proxy for T. Schaeffer (AA)
Loren Lustig, PA (GA)
G. Warren Elliott, PA (LA)
John Clark, DE (AA)
Roy Miller, DE (GA)
Craig Pugh, DE, proxy for Rep. Carson (LA)
Lynn Fegley, MD, proxy for B. Anderson (AA)
Allison Colden, MD, proxy for Del. Stein (LA)
Russell Dize, MD (GA)
Pat Geer, VA, proxy for S. Bowman (AA)
Shanna Madsen, VA, proxy for B. Plumlee (GA)
Chris Batsavage, NC, proxy for K. Rawls (AA)
Jerry Mannen, NC (GA)
Bill Post, SC, proxy for P. Maier (AA)
Malcolm Rhodes, SC (GA)
Sen. Ronnie Cromer, SC (LA)
Doug Haymans, GA (AA)
Spud Woodward, GA (GA)
Erika Burgess, FL, proxy for J. McCawley (AA)
Marty Gary, PRFC
Dan Ryan, DC, proxy for J. Seltzer
Lowell Whitney, USFWS
Max Appelman, NOAA

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

Ex-Officio Members

Brian Neilan, Technical Committee Chair
Pam Lyons Gromen, Advisory Panel Chair

Staff

Bob Beal
Toni Kerns
Laura Leach
Lisa Carty
Maya Drzewicki
Tina Berger
Pat Campfield
Kristen Anstead
Emilie Franke
Lisa Havel
Chris Jacobs
Jeff Kipp
Savannah Lewis
Kirby Rootes-Murdy
Sarah Murray
Marisa Powell
Caitlin Starks
Deke Tompkins

Guests

Karen Abrams, NOAA
Pat Augustine, Coram, NY
Richard Balouskus, RI DEM
Meredith Bartron, US FWS
Alan Bianchi, NC DNR
Christopher Boelke, NOAA
Jason Boucher, NOAA
Rob Bourdon, US FWS
Delayne Brown, NH F&G
Jeff Brust, NJ DEP
Joe Cimino, NJ (AA)
Margaret Conroy, DE DFW
Jessica Daher, NJ DEP
Lennie Day
Mari-Beth DeLucia, TNC
Greg DiDomenico
Wes Eakin, NYS DEC
James Fletcher, Wanchese Fish

Guests (continued)

Alexa Galvan, VMRC
Lewis Gillingham, VMRC
Brendan Harrison, NJ DEP
Helen Takade-Heumacher
Jaclyn Higgins, TRCP
Kyle Hoffman, SC DNR
Miluska Olivera-Hyde, USGS
Stephen Jackson, US FWS
James Jewkes
David Kazyak, USGS
Greg Kenney, NYS DEC
David Sanderson-Kilchenstein, MD DNR
Rob LaFrance, Quinnipiac Univ
Wilson Laney
Chip Lynch, NOAA
Shanna Madsen, VMRC
Chris McDonough, SC DENR
Dan McKiernan, MA (AA)
Jason McNamee, RI (AA)
Steve Meyers
Mike Millard, US FWS
Chris Moore, CBF
Brandon Muffley, MAFMC
Kevin Milligan, USGS
Lindsey Nelson, NOAA
Tom O'Connell, USGS
Gerry O'Neill, Cape Seafoods
Derek Orner, NOAA
Alexis Park, MD DNR
Will Patten, NC DENR
Nicholas Popoff, US FWS
Will Poston, SGA
Kathy Rawls, NC (AA)
Harry Rickabaugh, MD DNR
Tara Scott, NOAA
Melissa Smith, ME DMR
Somers Smott, VMRC
Renee St. Amand, CT DEEP
Michael Stangl, DE DFW
Kevin Sullivan, NH FGD
John Sweka, US FWS
Brett Towler, US FWS
Troy Tuckey, VIMS
Beth Versak, MD DNR
Mike Waine, ASA
Jonathan Watson, NOAA
Meredith Whitten, NC DENR
Chris Wright, NOAA
Horace Wynn
Sarah York, NOAA
Erik Zlokovitz, MD DNR
Renee Zobel, NH F&G

The Shad and River Herring Management Board of the Atlantic States Marine Fisheries Commission convened via webinar; Tuesday October 19, 2021, and was called to order at 9:00 a.m. by Chair Justin Davis.

CALL TO ORDER

CHAIR JUSTIN DAVIS: Good morning, everybody. I'm going to call to order this meeting of the Shad and River Herring Management Board. My name is Justin Davis, I am the Administrative Commissioner from Connecticut, and am currently serving as the Chair of this Board.

APPROVAL OF AGENDA

CHAIR DAVIS: The first item on our agenda this morning is Approval of the Agenda. I'll ask if there are any suggested modifications or additions to today's agenda.

MS. TONI KERNS: I see no hands.

CHAIR DAVIS: Okay, great, we'll consider today's agenda approved by consent.

APPROVAL OF PROCEEDINGS

CHAIR DAVIS: Moving on, next item on the agenda is Approval of Proceedings from the May, 2021 Meeting, which were provided in the meeting materials. Are there any suggested corrections or additions to the meeting minutes from May, 2021?

MS. KERNS: I see no hands.

CHAIR DAVIS: Okay, great, we'll consider the proceedings from the May meeting approved by consent.

PUBLIC COMMENT

CHAIR DAVIS: All right, moving on to the next item on the agenda, Public Comment. At this time, I would be willing to entertain public comment on any issue not on the meeting agenda today. Toni, do we have any hands from the public?

MS. KERNS: Jim Fletcher indicated he wanted to speak, so Jim, go ahead and unmute yourself.

MR. JAMES FLETCHER: This is James Fletcher. You're talking about shad and river herring, and we are not talking about what the wastewater treatment cause PFAS. They are long lasting chemicals that show up in the water and affect everything; humans and fish. It's amazing that the Atlantic salmon was affected by this same type of chemical when they sprayed it for the spruce budworm. Is there any chance that the Shad and River Herring Management Board can have the habitat people specifically look at these chemicals?

Because as long as they are going into the water through the wastewater treatment system, trying to rebuild the shad and river herring is not going to work. A lot of these chemicals, depending on which type of chemical it is, affect the ability of the shad and river herring to osmose regulate, either when they're going to sea as young fish or when they're coming back to spawn. Is there any chance that the Shad and River Herring can specifically ask Habitat to look at these chemicals, and it's PFAS is what the wastewater treatment uses? I would ask that if we're going to try to do anything with shad and river herring, first we've got to find out what's affecting their ability to reproduce and get in and out of the fresh to brackish water. Thank you for your time.

CHAIR DAVIS: Thank you, Jim, for providing that perspective. Toni, do we have any other hands from the public?

MS. KERNS: I don't have any additional hands.

CONSIDER AMERICAN SHAD HABITAT PLANS AND UPDATES

CHAIR DAVIS: We'll move on to the next item on our agenda, which is a presentation from the Chair of our Technical Committee, Brian Neilan, concerning American Shad Habitat Plans and Updates.

MR. BRIAN NEILAN: Thank you, Mr. Chair, and good morning to the Board. My name is Brian Neilan, the

TC Rep from New Jersey and current TC Chair. Today I have for you three presentations to go over. I'm going to start with a review of recently submitted habitat plan updates from a few states since the last Board meeting.

Just a little background here. Under Amendment 3 all states and jurisdictions are required to submit habitat plans for American shad. They are meant to contain a summary of information on current and historical spawning and nursery habitat, threats to those habitats, and any habitat restoration programs currently are going on in the state or have in the past.

In February, 2020, the Board agreed that these plans should be updated every five years or so, similar to how we do our SFEs and ask the states to update existing plans, originally improved in 2014, and for the states with missing plans to submit their plans ASAP. Since then, the Board has approved 12 plans and updates from these states and river systems listed below.

Today we have another three we're going to review. Today we have three plan updates for Board consideration. Last month the TC reviewed the plans from the following jurisdictions, so Virginia, D.C. and from New York a plan for the Hudson River. After reviewing, the TC recommended that the Board approves all plans and updates.

We'll dive right in and start with the Virginia plan on the next slide. For the Virginia plan update, their plan covers the main tributaries to the Chesapeake Bay. In this case the James, York and Rappahannock Rivers. The 2021 habitat plan update information on existing threats identified in the previous report, and also identified some new additional threats.

Some highlights here from the plan update. The first additional threat was in river construction and blockage to migration. They felt that projects such as bridge and tunnel construction, maintenance, dredging, and other work in-water work have the potential for disruption of American shad migration, both from direct and indirect factors.

Some of these examples are acoustic interference or habitat alteration. They plan on addressing this threat through the enforcement of time of year restrictions on in-water development, and case-by-case consideration of appropriate mitigation measures for individual projects. Another threat they identified in this plan update was agriculture or industrial water intakes and discharges. Systems used by American shad are subject to significant withdrawals within this area that may have effect on spawning and nursery habitats. The recommended action in the plan to address this threat, was to include developing a better understanding of the amount of water intakes for agriculture, particularly in tidal streams and rivers that support American shad spawning and nursery grounds, and survey to better understand the effects of these threats.

Those are the updates for the Virginia plan. Go on to the D.C. plan. As I said, the D.C. plan was also, this is an update. It covers the portions of the Potomac and Anacostia Rivers, which fall within the borders of the District of Colombia. The updates from the previous plan include the completion of a dredging channelization project associated with the runway extension at Reagan National Airport.

There is also an update on an invasive species stomach content study. I believe they're mostly looking at invasive catfish species, so in this area blue and flathead catfish. This study is to better understand the effects of invasive predators, and what they may have on resident anadromous species.

They are still collecting samples. They mentioned they have at around a thousand stomachs at this point. They should have some good data for us on that soon. I think a lot of states are starting to see issues with invasives, especially these species of catfish. That is the D.C. habitat plan update. We can move on to the Hudson plan.

This was a new plan submitted by New York for the Hudson River. I'll go over this one a little more in

depth, since it's brand new. We could start with the habitat assessment. For the habitat assessment it was determined that American shad currently had access to 91 percent of historical mainstem Hudson River habitat.

This is from the mouth of the river up to the Troy Dam. They still have access to a good amount of habitat, but the conversion of habitat during the dredging and channelization of the upper portion of the estuary during the past century, has resulted in the loss of preferred habitat. New York did a pretty thorough threat assessment.

Here are some of the highlights from that threat assessment. They looked at impingement and entrainment as a major source of possible mortality. The water withdrawals may have had a significant impact on year class strength, but some reductions rated from 16 to 52 percent reduction in year class strength, as a result of impingement and entrainment mortality.

They looked at anthropogenic habitat changes, so dredging and channelization of the mainstem Hudson River, and adjacent land use changes have resulted in the change in degradation of preferred habitat used by American shad, especially for spawning and nursery habitat, including a loss of 57 percent of inner tidal shallow water habitat now north of the city of Hudson, so that's important nursery habitat there.

Then they also identified other threats, similar to what we're seeing up and down the coast, of course climate change issues and invasive species. New York has some habitat restoration programs happening, or have been completed in the recent past. Within the Hudson River there is significant and ongoing efforts to understand and reduce the impacts of threats to American shad and spawning nursery habitats. Just a quick rundown on some of the restoration plan highlights. This includes the removal of nine dams within the Hudson River estuary since 2016, opening up some important nursery habitat, including restoring vegetative shallow water and intertidal habitats.

They highlighted a side channel restoration projection completed in 2018 out at Gay's Point near Coxsackie New York, which I think was a bit of a pilot project for them, and I think went pretty well. They should be looking to do similar restoration projects in the near future. That's the rundown of the Hudson plan. We can go to the next slide, which is the next step today, so that would be consider approval of the three plans just presented. I could take any questions, or hand it over to the Chair to go forward with the next steps.

CHAIR DAVIS: Thanks, Brian. I'll ask the Board if anybody has any questions for Brian on the presentation to this point.

MS. KERNS: I see no hands, hold on, I have Pat Geer followed by Allison Colden.

MR. PAT GEER: I'm ready to make a motion if there are no questions.

CHAIR DAVIS: Was that Pat?

MR. GEER: Yes.

CHAIR DAVIS: Okay, Pat, I'll ask Allison really quickly if she has a comment or a question before we move to a motion.

MS. ALLISON COLDEN: I just had one quick question. Maybe it's good that Pat is on his mute button. My quick question for you was, I know Virginia is in the midst of working on a shad habitat restoration plan, so I was just wondering if any of that was reflected in here, or if that would be in the next round of updates. Was there anything that you all reviewed with respect to the restoration program in Virginia's plan?

MR. NEILAN: There were general updates. I don't have that info of the top of my head right now, but I know they updated not just a threat assessment, but their plans for the future. I think they will have more concrete answers in the following plan. I

think they're still in the planning process at this point.

MS. COLDEN: Okay, thank you.

CHAIR DAVIS: Brian, I just want to confirm. Are you done with your presentation on this section of the agenda, or was there another part of this presentation to come?

MR. NEILAN: No, this was it for the habitat plan.

CHAIR DAVIS: Okay, thanks, just wanted to confirm. Given that, Pat, I'll turn back to you if you're interested in making a motion.

MR. GEER: I move to approve the Shad Habitat Plans for Virginia, District of Colombia, and New York as presented today.

CHAIR DAVIS: Okay, thank you, Pat, do we have a second to the motion?

MS. KERNS: We have Malcolm Rhodes.

CHAIR DAVIS: Thank you, Dr. Rhodes. Any discussion on the motion?

MS. KERNS: No other hands.

CHAIR DAVIS: Given that, I'll ask if there is any objection to the motion.

MS. KERNS: I see no hands in objection.

CHAIR DAVIS: We'll consider this motion passed by unanimous consent.

CONSIDER TECHNICAL COMMITTEE REPORT ON METHODS FOR EVALUATING MIXED-STOCK CATCH

CHAIR DAVIS: All right, moving on to our next section of the agenda. Brian, you're back up again to give us a presentation on the Technical Committee report on methods for evaluating mixed-stock catch.

MR. NEILAN: As you said, next we have an update on the TCs task of developing methods to evaluate bycatch in mixed-stock fisheries in state waters. The task group and TC drafted a white paper on the results of this task and the work that was done, and that was included in the meeting material. It's an outline here, I'll be going over a little bit of background on the task.

The data reviewed by the task group, what methods were explored by the task group to evaluate this task, and then the TC recommendations for addressing mixed-stock fisheries, as a result of the methods that were evaluated. A quick rundown, some background here on the tasks. In August, 2020, after being presented with the results of the 2020 stock assessment, the Board tasked the TC with identifying potential paths forward to improve shad stock along the coast, in consideration of the assessment results.

Some system-specific TC recommendations were presented at the February, 2020 meeting, and also at this meeting the TC identified a need to understand and reduce impacts to external stocks of shad that were harvested in directed mixed stock fisheries. The Board then tasked the TC with the task we're about to go over here, so developing methods to evaluate bycatch removals in directed mixed-stock fisheries, in order to better understand and possibly reduce any of the impacts.

This presentation details the results of the work done for this task. To address this task, the working group developed a road map outlined to focus the scope of the task and guide discussion. We defined goals and expectations, we identified known or potential mixed-stock fisheries, we collected available data that might be relevant to understanding or identifying mixed-stock fisheries, determined the feasibility of developing modeling methods to estimate composition of mixed-stock fisheries, and we evaluated novel or existing methods of reducing or eliminating any of the effects of mixed-stock fisheries. Where we finished up and where we are today is, we've developed recommendations for the Board on eliminating mixed-stock fisheries or recommending research priorities going forward, to address this task.

During our data assessment, the task group collected datasets from up and down the coast that could be useful for identifying and quantifying mixed-stock fisheries. From the data we received, using the tagging studies and genetic analysis, this provided useful information for identifying mixed-stock fisheries in the Delaware Bay and the Winyah Bay.

For this task the Delaware Bay was evaluated given the quantity and quality of data available from this system. We had commercial landings from New Jersey and Delaware we looked at back to 1988 to the present. We had some tagging studies from back in the '90s to the present from New Jersey. A few different DNA analysis studies for identifying stock composition and stock assignment.

Then long-term general abundance surveys, including ones from out of basin stocks. Specifically, we looked at New York. The working group took a tiered approach to evaluating the data and methods available. Three tiers were developed based on the following criteria, quantity and quality of data currently available, so Tier 1 was what sort of analysis we could do right now, given the data we currently have available.

Second tier was data that could be reasonably collected without significant changes in our near-term effort, so essentially what could help improve analysis with a minimal to moderate increase in effort. Then our third tier were the ideal collection efforts that would provide information necessary to support more robust modeling efforts, such as for example a statistical catch at age model.

The first tier, which was analysis we could do right now, given the available data. The task group explored developing a relative F with the static genetic proportions based on historical tagging data. Relative F is simply calculated by taking harvest and comparing it to some fishery independent abundance index. This would limit relative F to a level established post hoc, and any management triggers would have a non-biological rationale.

In the case of the Delaware system, a static percent of total catch was assigned to the Hudson stock based on tagging surveys. We looked at total catch in the Hudson. We looked at our tagging studies that showed, depending on the year X amount of Hudson stock made up part of the total harvest. That was compared to an adult abundance index from the Hudson River, and the resulting value represents the Hudson stock-specific relative F.

From here an average relative F for the time series can be generated, and then obviously from there you could consider developing benchmarks and triggers based on this time series when harvest levels were deemed to be appropriate. That was the first tier, as I said, what we could do right now, given the available data. For a second tier, the task group explored the viability of a relative F with a time-varying stock composition. Again, this is relative F, so it's the same general method as the previous tier, but would require regular genetic sampling or tagging studies to better inform the yearly out of basin composition within the mixed stock fisheries. You can get a year-on-year percentage of assignment, versus the previous method, which relies on an average composition over the entire tagging survey time series, or you could use the small single year snapshot genetic analysis data that we have.

This will require more consistent sampling, and would allow for year-on-year specific stock composition assignment of catch would benefit that. Yearly assignment likely fluctuates on a yearly basis, so this would account for that. Finally, our third tier. This represents the ideal methods for evaluating mixed stock harvest and its effects on out of basin stocks.

Some of the methods explored were in bycatch impact analysis for a statistical catch at age model. These methods would require a significant increase in both fishery independent and fishery dependent sampling efforts, as they have a much higher data needs to be able to complete the models.

While the third-tier methods would provide the most robust analysis of mixed stock fishery impacts, the required increase in data collection and sampling efforts cannot practically be completed by the agencies involved, without a significant increase in both staff time and the resources. Here we have the TC recommendations based on the work done by the task group. After reviewing the different tiers, the TC recommends that the second-tier method be used for evaluating bycatch removals in directed mixed stock fisheries.

A reminder, this tier involves developing a relative F index based on increased genetic sampling or tagging efforts, which can provide annual stock composition of mixed stock landings. This method was preferable to the current first tier methods of applying a historical average to the stock assignment, based on tagging and DNA studies we have available as regular DNA analysis can account for yearly fluctuations in stock composition.

The states with mixed stock fisheries would develop management strategies based on these methods to reduce impacts of out of basin harvest in mixed stock fisheries. These strategies should be incorporated to current SFPs when developed. That's the TC recommendations. We're here at next steps, and obviously I can take any questions that the Board may have.

CHAIR DAVIS: Thank you, Brian for that presentation, and I'll thank the Technical Committee for the excellent work. I'll open the floor. Are there any questions for Brian?

MS. KERNS: We have John Clark followed by Lynn Fegley.

CHAIR DAVIS: Go ahead, John. Toni, is it just me or are we not hearing John?

MS. KERNS: I thought it was me. I'm not hearing John. All right, John, go ahead.

MR. JOHN CLARK: Thank you for the presentation, Brian, I was just wondering if you could briefly describe what the increase in cost would be from going from Tier 1 to Tier 2. Obviously, as you mentioned with Tier 3, it's a cost benefit we're looking at with some of these methods, and I'm just wondering what we would be looking at, in terms of increased resources if we go to Tier 2. Thanks.

MR. NEILAN: Sure, no problem. I can give you a general idea of what we looked at, at least in New Jersey, being one of the basin states this would affect us as well. Tier 1 is potentially how we operate right now, so there would be no increase in cost. Tier 2 would require regular genetic sampling of the commercial fishery, either you could have onboard observers or you could do dockside sampling.

Obviously, the onboard observers are going to add to the cost. In terms of dockside sampling, typically a little easier, especially coordinating with the fishermen, days at sea versus just meeting them at the dock. We were looking approximately if you got $100.00 a sample for DNA, and that was with the USGS lab, and they were looking at around that.

I believe we were looking at 500 samples a year, and it was going to be around $100.00 a sample for analysis and report each year, around $50,000.00. It is an increase in sampling. The TC felt that the increase, the juice was worth the squeeze here, in terms of getting that year-on-year stock assignment versus the tagging study, which was being used for the first tier.

MR. CLARK: If I could just follow up for a second, Brian. I understand that, I mean it's not a huge cost, but just judging by the Delaware Bay shad fishery, this is not a huge fishery. It seems like it's getting smaller. I don't know about the Jersey side, but it's getting harder to find even anybody in Delaware that can bone a shad. It doesn't seem like there is a huge need for me to be knowing what the mixed stock composition is on an annual basis. But as I said, just kind of wondering based on the current state of the fishery.

MR. NEILAN: Yes, I think we're seeing a similar on our side of the Bay. It is a fishery that is slowly, basically teetering out through attrition. I think the Bay harvest on our side is 10 to 20,000 pounds a year. Total Bay harvest is probably close to 40,000 pounds a year.

That being said, probably about 10,000 pounds a year assigned to the New York stock for both sides of the Bay. The TC felt that the analysis, it was beneficial to have the year-on-year sampling studies, to assign year specific assignment, just because it likely fluctuates over the years. That is the general consensus of the TC.

CHAIR DAVIS: Okay, Lynn.

MS. LYNN FEGLEY: Yes, thanks for the presentation, Brian. I think you answered by question when you were answering John's question. I was just curious who was doing the genetic analysis, where the samples were going. It's going to USGS.

MR. NEILAN: Yes, the previous studies we just, the Delaware Basin states just finished one from the US Fish and Wildlife Service, the Northeast Fisheries Science Center did a three-year study for us. The one I was looking at going forward, I was applying for some funding. USGS, they're handling the coastwide alosine repositories for DNA, and they are definitely interested in doing this DNA analysis.
MS. FEGLEY: Great, thank you.

MS. KERNS: Justin, you now have John Maniscalco followed by Roy Miller.

CHAIR DAVIS: John, you're up.

MR. JOHN MANISCALCO: First, I would like to thank the TC for doing the work on these evaluation methods. I had a lot of reservations about their first-tier approach, using that constant value. I recognize that there are costs associated with annual or even semiannual genetic sampling. But I'll just remind the Board that whereas New Jersey and Delaware have commercial and recreational fisheries on that system, anglers and commercial fishermen on the Hudson River are prohibited from taking shad, even in that catch and release kind of fishery.

There was the 4,000, 5,000, 10,000 pounds that are removed from the Delaware that are Hudson River fish, flies in the face of the prohibitions we're putting on our own fishermen. I would certainly support the Tier 2 recommendation, and I would be interested in having conversations about how we could find money to support that genetic sampling, and the observer work.

CHAIR DAVIS: Roy.

MR. ROY W. MILLER: Very quickly, Brian, you didn't mention a geographic component to the genetic sampling. Specifically, I'm referring to within the Delaware Bay system. Previous work has shown you're more likely to encounter out of basin shad in the lower portion of Delaware Bay (breaking up) for the upper portion of Delaware Bay with a lower Delaware River. I assume there would be a geographic component to that sampling. Would the emphasis be on the lower Bay fishery, such as it is, even though as already discussed it's much reduced what we'll get in 20 years?

MR. NEILAN: Sure, so I think the best way to go about it would be to target the whole fishery. We have fishermen who land both in the Delaware in the lower Bay and the upper Bay. The previous genetic sampling study we did took samples from potentially the mouth of the Bay all the way up to close to New York.

For the mixed stock fisheries purposes, we would be looking at the entire Bay as a whole. The Bay is where the fishery is being executed. Just to the mouth of the river, where it opens up into the Bay all the way down to Cape May. We would like to cover the entire fishery (faded) and kind of get a general idea of the fishery as a whole, not just the lower Bay.

The genetic sampling showed that we certainly saw out of basin harvest in the upper Bay as well. It kind of tiers as you go up the Bay into the river,

obviously. The further up you go the more Delaware River fish you'll be seeing, but you will also see out of basin fish in the upper Bay as well. There is a fishery that goes on up there, so we would evaluate that as well.

CHAIR DAVIS: Do we have any more hands, Toni?

MS. KERNS: That's all our hands.

CHAIR DAVIS. Okay, so I think at this point the Board has a decision point here. I think the Board could entertain a motion to adopt the TC recommendation and recommend that the Delaware River Basin Coop Sustainable Fishery Management Plan incorporate the recommended methods.

But I thought, you know, perhaps it might be helpful before the Board decides whether or not it wants to move forward with a motion at this time, to get perspective from some of the affected jurisdictions here on whether they sort of feel comfortable at this point with the TCs recommendation.

Moving forward with incorporating that into the Sustainable Fishery Management Plan or perhaps there might be a desire for some more discussion or further digestion of the TCs report. Not to put those jurisdictions on the spot, but I think it might be helpful to get that perspective, before the Board considers what to do here.

MS. KERNS: We have John Clark and then followed by Roy Miller.

CHAIR DAVIS: Okay, John Clark.

MR. CLARK: I certainly understand the request, the making the recommendation to do this. As I said, I'm just, and I was glad to hear from John Maniscalco about the New York perspective on this. I understand that our fisheries, both commercial and recreational in the Delaware are catching Hudson shad also.

It's just one of those things where, as Brian pointed out, just the effort they're doing in New Jersey to do this on an annual basis, getting the genetic work done that's $50,000.00 that obviously there is an opportunity cost for whatever we do with shad. I'm just thinking, for example just within Delaware.

We're in the process of trying to eliminate blockages on Brandywine Creek, which is a tributary of the Delaware that in the past was heavily used by shad and river herring. You know I understand from the TC perspective that this is worth the effort, but I would just like a little more time, I think.

I understand if a motion is made it will be a recommendation that the Delaware River Basin Coop would not be required to incorporate Tier 2 methods. As I said, if we get to that point fine, but I just think at this point it might behoove us to wait a little bit on this, until we can more thoroughly analyze what would be the best things to do with shad on the Delaware.

CHAIR DAVIS: Roy Miller.

MR. MILLER: I would like to chime in with John on this. I just want to make sure that, to coin a phrase, the juice is worth the squeeze, in this particular case. I am very enthused over restoration of shad in the Brandywine System, which is a major lower tributary to the Delaware River, for those not familiar with the Basin. Money spent on that restoration, I think, is already starting to show return and payoffs. I would be hesitant to save a few thousand fish that might otherwise be bound for the Hudson System, and ignore local restoration efforts for the sake of that effort. Thank you for the opportunity of giving my opinion.

CHAIR DAVIS: Toni, do we have any other hands?

MS. KERNS: We have John Maniscalco.

CHAIR DAVIS: Okay, go ahead, John.

MR. MANISCALCO: Again, I understand the costs. In New York state we are doing coastwide genetic work to better evaluate where Hudson River fish are being caught in fisheries coastwide. We are

doing habitat restoration work. We are investigating other potential causes within the river itself, to determine what is inhibiting the recovery of our shad stocks. But certainly, the loss of thousands of adults to Delaware Bay fisheries could certainly be an issue.

If we need to further develop these ideas and how they are going to be implemented, I'm certainly willing to consider that. But I do not want to see evaluation of mixed stock fisheries fall off the table, and I don't want to see the possibility of this being included in future sustainable fishery management plans be removed. Because as I said before, where there are fisheries allowed in the Delaware Bay, those fisheries are not allowed on the Hudson River, even though there is a direct impact of the Delaware Bay fisheries on Hudson River fish.

CHAIR DAVIS: Do we have any other hands, Toni?
MS. KERNS: I don't have any other hands.

CHAIR DAVIS: Okay, thanks, Toni. After hearing those perspectives from Delaware and New York, I think it's fair to say that there is a recognition of the value of this work of continuing to pursue this line, and potentially incorporate it into the sustainable fishery management plan at some point.

Also, some concerns about potential cost of the work. Opportunity costs something, I'm sure all of us who work in the Agency environment are familiar with. Given those perspectives, I guess at this point I'll turn it back to the Board and ask if anybody would like to make a motion at this time, relative to the TC recommendations.

MS. KERNS: I have John Maniscalco.

CHAIR DAVIS: Okay, go ahead, John.

MR. MANISCALCO: I would like to make a motion for the Board to approve the TC recommendation to incorporate a mixed-stock fishery evaluation to the Delaware River Basin Cooperative Sustainable Fishery Management Plan.

CHAIR DAVIS: We have a motion on the board made by John Maniscalco. Do we have a second to the motion?

MS. KERNS: Allison Colden.

CHAIR DAVIS: Allison, just to confirm, you're seconding the motion?

MS. COLDEN: Yes, that's correct.

CHAIR DAVIS: Okay, great, so we have a motion with a second. At this time, I'll ask John, would you like to speak to the motion?

MR. MANISCALCO: I mean I think I've said my piece already. I'm certainly willing to see this concept further developed. But as I said before, I don't want to see it forgotten, thanks.

CHAIR DAVIS: Okay, thanks, John. Any further discussion on the motion? Toni, do we have any hands?

MS. KERNS: John Clark.

CHAIR DAVIS: Okay, John Clark, go ahead.

MR. CLARK: Again, I'm not opposed to doing more sampling and I understand this is a recommendation. I just thought at this point that, you know again, I know the Delaware River Basin Coop is going to meet to discuss the Sustainable Fishery Management Plan, I believe it's next week.

This could very well be part of it. I just didn't think at this point, as I said, I think this is a little premature, and just to analyze more all the factors involved here. I know it's tawdry to have to consider funding in all these times, but there is truly cost as to where we get the most bang for our buck with what we spend on the shad and river herring.

CHAIR DAVIS: Toni, do we have any more hands?

MS. KERNS: No additional hands.

CHAIR DAVIS: Okay, given that I'll all the question. At this time, I'll ask everyone in favor of the motion to raise your hand.

MR. CLARK: Can we have a minute to caucus, Mr. Chair?

CHAIR DAVIS: Yes, I apologize. We'll give two minutes for a caucus, thank you. That was two minutes for a caucus, I'll ask if any states or jurisdictions feel like they need more time to caucus, please raise your hand.

MS. KERNS: I don't see any hands. Sometimes I think it might be easier for them just to call out if they need more time, if they are caucusing via their computers.

CHAIR DAVIS: Okay, thanks, Toni. Not hearing any calls for additional time, we'll go ahead and call the question here. I'll ask all states and jurisdictions in favor to raise their hands.

MS. KERNS: It looks like the hands have settled, all right, I will call out the states and jurisdictions in favor. Georgia, U.S. Fish and Wildlife Service, New Hampshire, Maine, Pennsylvania, Florida, NOAA Fisheries, New York, District of Colombia, North Carolina, Maryland, New Jersey, Massachusetts, South Carolina, and Potomac River Fisheries Commission. Did I miss any? Rhode Island, thank you, and Connecticut. I'm going to put the hands down for everybody.

CHAIR DAVIS: Okay, all those opposed, please raise your hand.

MS. KERNS: We have Delaware and Virginia.

CHAIR DAVIS: Thanks, any abstentions?

MS. KERNS: I have no abstentions.

CHAIR DAVIS: Any null votes?

MS. KERNS: No null votes.

CHAIR DAVIS: Okay, thanks, I believe the motion carries, although I don't have the count, Toni, do you have that?

MS. KERNS: Caitlin should have the count.

MS. CAITLIN STARKS: Sorry, I was just double counting, I believe I have 16 in favor, 2 opposed.

MS. KERNS: Mr. Chair, Roy Miller has his hand up.

CHAIR DAVIS: Okay, Roy Miller.

MR. MILLER: Very quickly. I'm wondering if through the Delaware River Cooperative, perhaps New York might be able to assist the lower basin states in helping fund these studies, after all it is their shad, they are concerned about. If they are able to help financially or materially, in terms of analysis or something like that with that effort. I think that would be a good faith gesture, and would be much appreciated.

MS. KERNS: We now also have John Maniscalco.

CHAIR DAVIS: Okay, go ahead, John.

MR. MANISCALCO: Roy, I certainly can't commit to anything, but you're right it is Hudson River shad that are being taken. I hope we have some fruitful conversations at the next Coop meeting about how we could get this kind of work funded.

CHAIR DAVIS: Thanks, John, do we have any other hands up at this time, Toni?

MS. KERNS: No additional hands.

PROGRESS REPORT ON PRIORITIZING SYSTEMS FOR SHAD RECOVERY AND DEVELOPING INVENTORY OF AVAILABLE DATA TO SUPPORT DEVELOPMENT OF FISH PASSAGE CRITERIA

CHAIR DAVIS: Okay, given that, I'm going to go ahead and move us on to the next item on our agenda. I think Brian will be giving us another presentation, a Progress Report on Prioritizing Systems for Shad Recovery, and Developing the

Inventory of Available Data to Support Development of Fish Passage. Brian, it's all yours.

MR. NEILAN: You guys are going to hear from me one last time here. For our last presentation I'm going to be going over the TCs progress on its shad passage prioritization task. Just a quick outline of what I'm going to go over here, just some background, some progress on the task, what the TC has done so far. Then next steps looking forward.

In August of 2020 the Board tasked the TC with identifying potential paths forward to improve shad stocks along the coast, considering the assessment results. Obviously improving shad passage directly gets to the heart of this task. In May of 2021, the Board followed a TC recommendation that the Commission send letters to agencies with relevant authorities to request prioritization of these actions when considering licensing permitting of projects that may impede access to the spawning grounds and out-migration.

The TC was tasked with prioritizing systems for shad recovery and developing an inventory of available data that would support the development of fish passage criteria. The Commission sent a letter in June of 2021 to the Fish and Wildlife Service supporting the Services efforts to require fish passage during relicensing of hydro powered projects, and ensure that performance standards of fishery related license conditions are met.

The Service responded favorably in August, and just looking forward to seeing what the TC would come up with, in terms of prioritizing different projects, based on need. For our progress on this task, the TC was tasked with prioritizing systems for shad recovery, and developing an inventory of available data to support the development of fish passage criteria.

The fish passage task group required a table of the expected FERC relicensing projects along the Atlantic coast coming up for either relicensing or applying for a first-time license. Expected between FY2020 and 2030, this list represented 150 plus projects. The TC members from each state were asked to decide whether a project in their state was a priority, based on the following criteria.

Does this system have an existing recovery plan? Does this system have existing performance standards? Does this system have upstream passage? Does it have downstream passage? Is alosine passage needed here? Is this system a state priority in general? That was what was considered when we looked at sort of whittling down the number of projects who are priority projects and systems. Continuing with our progress on the task here. From the 150 total projects initial list, we have narrowed down to 36 priority systems along the Atlantic coast. This is based on the TC members from each state reviewing the criteria I mentioned in the previous slide for each project. The TC is continuing to review the list of priority systems, and providing information on available data that could be used to support passage criteria.

That is currently where we're at, and I'm still narrowing down some of the systems. They haven't all been reviewed yet. Where we are right now, the TC will finalize our list of priority projects and the inventory of available data, and provide it to the Board for review at the next meeting, in terms of the final report, hopefully to be used for prioritizing systems with upcoming FERC relicensing to have fish passage requirements as part of their licensing requirements. That is where the TC is at with this task right now. I could take any questions anybody has.

CHAIR DAVIS: Okay, thanks, Brian. I'll thank Commission staff for their efforts in getting those letters out earlier this year, and thank Brian and the TC. We've certainly been keeping them busy lately with a variety of tasks, and we certainly appreciate all their efforts. I'll open it up to the floor. Are there any questions for Brian?

MS. TINA L. BERGER: Max Appelman has raised his hand.

CHAIR DAVIS: Okay, Max, go ahead.

MR. MAX APPELMAN: Thank you, Mr. Chair, and thank you Brian, and another thank you to the TC for working on this. You know NOAA Fisheries, we still think that the TC is in a unique position to look at the coast, you know holistically, and work towards identifying priority systems and projects.

One of the, I guess this is really just a comment. One of the concerns that I've been hearing from some of the folks that work closely with at the Agency is the concern about different states using different approaches to prioritizing systems within their state, and projects within their state. I saw that as a criterion for prioritizing, you know relicensing efforts that are coming down the pike.

I just wanted to sort of flag that that I'm hearing consistency is really important. I think that was part of where we thought the TC could come in and really step back and think of what's a consistent way to approach prioritization on a coastwide scale. Something to keep in mind as you guys continue to work on this task, and we look forward to the final report coming at the next meeting.

CHAIR DAVIS: Okay, thank you, Max. Any additional hands, Toni?

MS. BERGER: Lowell Whitney.

MR. LOWELL WHITNEY: Great, thank you, Mr. Chair. On behalf of Fish and Wildlife Service, I really appreciate the work the TC is doing in this regard. I just want to second the statement Max just made about the need to really understand the criteria that was used for the prioritization. I'm looking forward to seeing that in the final report. Also, in looking at the presentation, I do believe that NOAA received a letter as well. Again, thanks to the TC for the work on this, and we're looking forward to seeing the results.

CHAIR DAVIS: Great, thank you for that, Lowell, and certainly NOAA did receive a letter as well, so that might have been a slight oversight in the presentation. Toni, any additional hands?

MS. BERGER: No.

ELECT OF VICE-CHAIR

CHAIR DAVIS: Okay, given that, we will move on to our last item on the agenda today, which is to elect a Vice-Chair of this Board, and at this time I'm going to turn to my fellow Connecticut Commissioner Bill Hyatt, who I think will be making a motion along those lines. Bill.

MR. BILL HYATT: Sure, Mr. Chair. I move to nominate Lynn Fegley for Vice-Chair of the Shad and River Herring Management Board.

CHAIR DAVIS: Great, thank you, Bill, do we have a second to the motion?

MS. BERGER: Both John Clark and Mike Armstrong have their hands up.

CHAIR DAVIS: All right, out of deference to my Board share predecessor, I'll give the second to Mike Armstrong. I'll ask if there is any discussion on the motion. **Hearing none, any opposition to the motion?**

MS. BERGER: No hands have been raised.

CHAIR DAVIS: Great, thank you. **Thanks, and congratulations, Lynn!**

MS. STARKS: Mr. Chair, I believe we had one more presentation from Tom O'Connell.

CHAIR DAVIS: Ooh, that's right, I think I'm operating off an outdated version of the agenda. Thanks, Caitlin. Okay, so at this point I'll go ahead and ask Tom to give his presentation.

UPDATE FROM USGS EASTER ECOLOGICAL SCIENCE CENTER ON ALOSINE SCIENCE IN SUPPORT OF INTERSTATE MANAGEMENT

MR. TOM O'CONNELL: Well, it's a pleasure to get invited and to see a lot of familiar names on the attendee list, and hear some familiar voices,

because it's been a little while. I really appreciate the opportunity to highlight some of the Alosine research that USGS is involved in at the Eastern Ecological Science Center.

Just for those of you that are not familiar with myself. Again, it's Tom O'Connell, and I'm the Center Director for the USGS Eastern Ecological Science Center. Many of you might be familiar with me with my time for the Maryland Department of Natural Resources Fishery Service, where I spent most of my career, including time as the State's Fisheries Director, and it's a pleasure to come back here today and join all of you.

For those of you that may be less familiar with USGS, you may be asking why is U.S. Geological Survey involved in ASMFC fishery science. It kind of goes back to a reorganization of DOI back in 1993, where there was an interest of the department to separate science from management, and a lot of the scientists across the DOI bureaus were moved over to USGS. As a result of that, you know USGS is the only non-regulatory science agency within the Department of Interior, which uniquely positions USGS to deliver ASMFC actional science, as required by the Atlantic Coastal Fisheries Cooperative Management Act of 1993, which states that the Secretary of Commerce and DOI shall implement a science program to support ASMFC.

In 2020 the Eastern Ecological Science Center was formed out of a result of a merger between two other science centers, so Leetown Science Center, which is mostly a fish and aquatic science center, and the Patuxent Wildlife Research Center, which is more of a terrestrial wildlife science center. I've been asked to serve as a center director for the new Eastern Ecological Science Center, and you can see what our vision and goals are going forward.

But ultimately it comes down to, I'm really trying to establish a culture amongst our scientists, where we have a strong engagement with partners like the Atlantic States Marine Fisheries Commission, and we're aligning our limited, appropriated budgets to the highest priorities of our partner needs, and hopefully be viewed as a go-to organization to support science needs.

We are located in the Eastern U.S. We have three main laboratories in West Virginia, Maryland and Massachusetts, as well as eight field locations where we have scientists co-located at universities or other science centers. EESC is well positioned to be the lead science center amongst USGS to support the science needs of ASMFC.

About three years ago in an effort to try to strengthen USGS partnerships, I initiated communications with USGS leadership, and obtained support for strengthening USGS science support to ASMFC, and the USGS ecosystem mission area that provides funding to our center agreed to provide $100,000.00 in each of the past three years to allow us to increase our science support to ASMFC.

Through a lot of partnerships with agencies like NOAA, National Marine Fisheries Service, U.S. Fish and Wildlife Service, states and other parts of USGS, we've been able to leverage that initial investment to support over 20 research projects that are now totaling about 2 million dollars.

I just want to make a very important point that our involvement is not meant to be competitive with other federal or state agencies, we are really viewing this as a complementary science support role. We work very closely with NOAA and Fish and Wildlife Service and other states. To make these investments as beneficial as possible, we have coordinated closely with Pat Campfield as Science Director.

Where our scientists look at your five-year science priorities document, develop ideas, and we run those through Pat and Technical Committee representatives, and get feedback on which projects would have the greatest impact to ASMFC, and those are the ones that we've been focusing in on. Another way that we're looking to provide support to ASMFC is increasing our participation on the

Science and Technical Committees, here is a number of them that USGS has representatives, not just at Eastern Ecological Science Center, but other cooperative research units that fall under USGS responsibility and other science centers. Through this increased partnership, it's been recognized that it would be valuable to establish a new memorandum of understanding between NOAA, Fish and Wildlife and ASMFC to formalize USGS Science support role.

That is going to help me solidify longer term funding, and hopefully increased funding support over time. That's a little bit about why USGS is involved, and what I wanted to do is just highlight some of the research projects that are underway at the Eastern Ecological Science Center that pertain to Alosines.

These are ten projects that are listed here. Several of them are very relevant to your discussions today. The projects range from population structure and dynamics to fish help to aquatic ecosystem, habitats, and including but not limited to fish passage design and testing, which was talked about in the Technical Committee, just the past agenda item.

I'm not going to highlight all ten of these projects, but I did want to highlight a couple of them in more detail. This first project is the Alosine genetic stock identification and tissue repository, led by Dr. Dave Kazyak, who is our Center's lead geneticist in the Dr. Tim King Genetics Lab. I'm sure many of you may have known Tim King over the years.

Dave and his team are using genetic markers to build baseline information for American shad, blueback herring and alewife. The use of single nucleotide polymorphisms will provide enhanced resolution of stock structure, greater repeatability, and cost savings when compared to previous genetic analysis using microsatellite markers.

I know there were previous conversations in regards to the funding of this work, which was approved in the TC recommendation. This is an area where USGS I think, can really prove beneficial to ASMFC. We're mostly an appropriated funded science center, and I will do my best if this remains a priority of ASMFC, to provide the funds to help support the genetic analysis.

If not fully depending on the scale of effort, we will try to at least minimize the additional cost that would be needed to support this work. Our scientists are seeking collaborators to assist with sample collection, and if any of you have individuals that are able to collect tissue samples, there is contact information here to contact, and we can provide the information needed to receive the samples, and make them part of the genetic tissue repository.

The other area I want to highlight relates to fish passage. Our Center's Conte Anadromous Research Fish Laboratory in Turner Falls, Massachusetts, has a very unique fish passage research facility located along the Connecticut River, where we have biologists, hydraulic and civil engineers working together to design and test fish passageways tailored to specific species and river systems.

These scientists, some of you may know include Alex Haro, Ted Castro-Santos, Kevin Mulligan, and Brett Towler, who has been with Fish and Wildlife Service but now working with Eastern Ecological and others. What is unique is we're able to utilize a multiscale flume testing laboratory, where scientists are able to test initial ideas at a smaller scale, until they obtain the desired performance requirements, tailored to a particular species of fish. Then as they get close to that they can build it down into a larger prototype, and put it into one of our larger flume systems, where we're able to introduce fish of interest, and be able to monitor their performance related to these designs through an advanced telemetry system that we have in the flume system.

These multi-disciplinary team of scientists are improving fishway designs. They are looking to increase the percentage of alosines that are able to find the passage, reduce the amount of time it takes for a fish to pass the ladder, and increase survival of upstream and downstream migration. This information may be pertinent to some of the

performance criteria that is currently being discussed.

One project that our scientists are involved in is focused on reducing the time, and increase the proportion of fish that are passing a fishway once they enter it. This begins with looking at the fish entranceways, and this project we're looking at reducing the amount of time for fish that are approaching a fishway entrance to find it.

Increase the attraction and the proportion of fish entering it, and ultimately help increase the survival of upstream migration. Another part of our science focus on fish passage is looking at what happens when the fish actually gets into the fish ladder. This project is looking at a Novel D-cylinder design to try to improve, reduce the amount of time and increase the proportion of fish that once they enter the ladder can actually get through, and be at a health level that they can continue upstream and spawn successfully.

As many of you probably know, many historic Atlantic Coast fish ladders were designed based upon technologies developed for Pacific salmonids, which have very different swimming capabilities than the fish we're targeting on the Atlantic Coast. By having scientists that can understand the swimming behavior of these species of fish.

Then working together with our hydraulic and civil engineers, we can look at designs that are more tailored to the Atlantic species of interest like shad and herring. Then the last project I wanted to emphasizes. This project focuses on fish habitat assessments, and as many of you know, one of the biggest drivers to our Atlantic Coastal Fisheries is what's happening on the landscape.

Many of the times it's outside of our management regulatory control. This project is a project that we're working closely with NOAA, National Marine Fisheries and no end cost, where USGS is focusing on the headwaters down the tidal rivers, and NOAA is focusing on the tidal rivers down to the ocean.

What we're working to do is to increase our ability to assess the path of habitats, and understand the drivers and stressors of those habitats over the entire Chesapeake Bay Watershed. This project builds upon the National Fish Habitat Partnership, but with the richness of data in the Chesapeake Bay we're able to incorporate a lot more data, and are also looking to examine this data at a much finer spatial scale, which the local and state managers are saying is important for them to be able to utilize this information. Hopefully this project will be transferrable to other parts of the Atlantic Coast if successful. With that, I really appreciate the opportunity to present and highlight some of the work that USGS is involved in. I feel that we're just scratching the surface. We're looking to really grow this program to provide complementary science, and wanted to thank Pat Campfield and Toni Kerns and Lisa Havel and Deke Tompkins for helping us with the coordination, communication.

As well as my colleagues at NOAA, National Marine Fishery Service and U.S. Fish and Wildlife Service. We're really working together to try to complement our science to really hit the high marks of ASMFC science needs, so thank you, and happy to answer any questions you might have.

CHAIR DAVIS: Great, thanks very much for that, Tom. That's a great presentation and it's really great to see all the good science that USGS is doing in support of management of our ASMFC species. At this time, I'll ask if anybody on the Board has any questions for Tom.

MS. BERGER: I don't see any hands raised. I stand corrected, sorry, Lynn Fegley and Bill Hyatt.

CHAIR DAVIS: Okay, go ahead, Lynn.

MS. FEGLEY: I don't so much have a question as I just really want to thank Tom. You know this is pretty visionary and high time, you know that we have this linkage, and really have a means to bring to bear the scientific capacity at USGS. I just really love the fact that you are working through Pat

Campfield and reviewing those, you know those science priority reports from ASMFC. I just want to thank you for thinking this through and making it happen.

MR. O'CONNELL: Thanks a lot, Lynn, I appreciate that. We're excited about it.

CHAIR DAVIS: Okay, Bill Hyatt, you're up next.

MR. HYATT: Tom, I just had a quick question, just was wondering relative to the Chesapeake Project that you spoke about briefly. Just if you could comment on how much you folks for that project are drawing on work that was done by the North Atlantic Landscape Conservation Cooperative, or the Landscape Conservation data that they had collected over a number of years, of which USGS was an active partner.

MR. O'CONNELL: Thanks a lot, Bill. Yes, Steve Faulkner at our Center has worked with those Landscape Cooperatives. My understanding is that we're looking to build upon those efforts. One part of this effort was taking a lead to obtain data from all the different organizations pertaining to fish habitat and fish abundance throughout the Chesapeake Bay watershed.

We've successfully brought all that data together into a single database, and it's available to anybody. It's really trying to build off of the work that has already been done, and advancing that. I will follow up with Steve Faulkner's team, to make sure that my understanding is correct, but that is my assumption at right this point in time.
MR. HYATT: Excellent, thank you.

MS. BERGER: Dr. Chair, James Fletcher, there are no Board members but James Fletcher has his hand raised.

CHAIR DAVIS: Yes, sure, go ahead, Jim.

MR. FLETCHER: The question is, are you aware of the chemicals that are going into the water? You mentioned habitat, you mentioned fish passage, everything else. But I'm on a thing for years I ask about the estrogen in the water and affect in the reproduction of fish. Now it comes out that even the EPA is mentioning PFAS.

But the whole solution to the problem is to stop meniscal waste from being dumped into the water and pass it through some type of vegetative material. All of this is fine to talk about, but it's not a solution. The solution to pollution is pass the water through vegetation. Is it any chance at USGS will take on that issue? Thank you for your time.

MR. O'CONNELL: Great question, Jim, I appreciate you bringing it up. USGS has a very strong water quality monitoring program, and our Chesapeake Bay Fish Habitat specimen is working very closely to understand those drivers and stressors. We have a number of scientists, Vicky Blazer and Steve McCormick that have done a lot of work on endocrine destructors.

That is the big part of this Chesapeake Bay Habitat Assessment, is understand the status of these habitats and fish, and then try and understand what the drivers and stressors are, including contaminants like the ones you mentioned. We also just stood up a new PFAS lab in our West Virginia facility.

That is enabling us to examine PFAS contaminant levels in tissue samples of animals, and we've started some pilot projects this year. Happy to continue this conversation if there is interest of ASMFC, but we do have the expertise, we do have current projects, and be happy to discuss further if that is of any interest.

MS. BERGER: Tom Fote also has his hand raised at this point.

CHAIR DAVIS: Okay, Tom Fote, go ahead.

MR. THOMAS P. FOTE: Yes, Tom, nice to hear from you again. Too bad we can't see each other. Yes, I just wanted to point out that I sat through a presentation from USGS at the Pilots Commission discussing that you had looked at waters up in Pennsylvania that were not coming from sewer

plants but coming off farmland, and the high levels of endocrine disruptive.

I really appreciate it, because that had not really been put in the forefront as it is now, so we can look at what's coming into the Susquehanna and a few other areas in the Delaware River from what's coming up from farmlands.

MR. O'CONNELL: Thanks, Tom, it's great to hear your voice, and I can't believe a meeting has almost ended without Pat Augustine making a motion. I don't know if that has ever happened.

CHAIR DAVIS: Do we have any other hands?

MS. BERGER: No.

CHAIR DAVIS: Well, thanks again, Tom for that presentation and for being here today, much appreciated.

MR. O'CONNELL: You're welcome.

CHAIR DAVIS: All right at this time I'll ask if there is any other business to come before this Board today.

MS. BERGER: No hands raised.

ADJOURNMENT

CHAIR DAVIS: Okay thank you, well then, I will thank the Board today for a productive meeting, thank Brian for the excellent presentations, and for doing most of the heavy lifting today, and thank Caitlin Starks and Commission staff for all their work in support of this Board. With that I'll entertain a motion to adjourn.

MS. FEGLEY: So moved.

CHAIR DAVIS: Okay, was that Lynn?

MS. FEGLEY: Yes, it was.

MS. BERGER: Cheri Patterson has her hand up as a second.

CHAIR DAVIS: Okay, this Board will stand adjourned, thank you everybody.

(Whereupon the meeting convened at 10:22 a.m. on October 19, 2021.)