Maryland DNR

Spring Meeting of the Sport Fisheries Advisory Commission

Tuesday,
April 29, 2014

Held at the
Tawes State Office Building
Annapolis, Maryland

Audio Associates
301/577-5882

***SFAC Members Present*:**

Bill Goldsborough, Chair
David Sikorski, Vice Chair

Kate Chaney
Micah Dammeyer
Rachel Dean
Mark DeHoff
James Gracie
Phil Langley
Raymond P. Morgan, II
Edward O'Brien
Todd Russell ***(proxy for Beverly Fleming)***
Roger Trageser
Frank Tuma ***(proxy for Tim Smith)***
James Wommack

TFAC Members Absent

Beverly Fleming
Valentine Lynch
Vince Ringgold
Tim Smith

***Maryland DNR Fisheries Service*:**

Noreen Eberly
Tom O'Connell

Maryland DNR Spring Meeting of the Sport Fisheries Advisory Commission

April 29, 2014

I N D E X

I N D E X (Continued)

KEYNOTE: "---" indicates inaudible in transcript.
"*" indicates phonetic spelling in transcript.

A F T E R N O O N S E S S I O N

(2:05 p.m.)

Welcome

by Bill Goldsborough, Chairman,

Environmental Advisory, Chesapeake Bay Foundation

MR. GOLDSBOROUGH: Welcome, everybody. Glad you all could make it. Sorry we are starting a little bit late; just pulling a few things together. We have a little bit of mix in attendance today. Val Lynch could not be here. He somehow felt like his 50th wedding anniversary trip to Hawaii was more important.

Vince cannot be here. So Dave Smith, his proxy, will be sitting in for him. But he is going to be a little bit late. And Beverly could not be here. So Todd Russell, her proxy, is here. Thank you, Todd.

And Tim Smith could not be here. So his proxy, Frank Tuma, down on the end there -- thank you, Frank -- is here for him. So our proxy system seems to be working. Thank you all for that.

I also want to note that Rachel Dean is here again, our Tidal Fish Commission liaison. That legislation did pass, making that official. It has an effective date of July 1. So it will be the July meeting before she is a voting member. Appreciate your coming, Rachel.

I had one thing I wanted to follow up on. And then

I am going to toss it to Tom for some announcements. And that was an e-mail, or a couple e-mails [technical difficulty]

MS. : -- Evans Reserve near Deale Island. Some of that is to help protect area from poaching. So that is also out for scoping. And then there was few typo errors and coordinates, trying to make sure all the coordinates read correctly that we have been working.

MR. : -- maybe two, three weeks ago, first from Noreen sending or re-sending -- no, I guess it was sending, I forget. But Ken Hastings had supplied a letter to the Department back in January on striped bass allocation. And the Department responded to him recently. So it was both of those documents Noreen sent out.

And I followed up asking you to consider them both, read them both, told you that Vice Chairman Sikorski and I had been discussing them, had read them. And we wanted to get your feedback. Some of you did get back in touch. Appreciate that.

We did have some sentiment to suggest that we didn't need to spend any time on the issue, but we did have some saying they would like to talk about it. So the suggestion that Dave and I came up with was that we try to save some time at the end of the meeting to discuss it today and go from there. Does that sound okay to everybody?

Okay. That's what we will do then.

Tom? It is yours.

Welcome and Announcements

by Tom O'Connell, Director

MD DNR Fisheries Service

MR. O'CONNELL: Welcome, everybody. Just a few general announcements. On the agenda under the Estuarine and Marine Fisheries agenda item, there is a blue crab update. For any of you who came solely for that, I will let you know that the update is going to be that there is going to be an announcement this week. There was a potential that the announcement on the results of the winter dredge survey would have been available today, so we had a placeholder for that discussion. It is not available today. It is still on schedule for this week. And as the results become available, we will send it out to the Commission. So there is not any -- we don't need any time for that agenda item.

Another update is, I think it was two meetings ago this group initiated the concept of establishing a fisheries habitat workgroup. And what stemmed from this body's interest expanded to an interest across all of Maryland's fishery advisory bodies, Tidal Fisheries, the Aquaculture Coordinating Council, the Coastal Fishery Advisory Committee, the Oyster Advisory Commission, and we have kind of really taken ahold of this interest. And we had our first meeting a

few weeks ago. It was kind of a get-to-know-each-other meeting and trying to discuss the roles of the group.

But we went around the table and asked everybody's interest. And it was incredible the passion on that group. Several of the sport fisheries commissioners were there and probably can echo the interest and the passion to look at this issue.

I also see this as an opportunity to work across management sectors. This is one area that there seems to be common ground. Whether you are a commercial fisherman, charter fisherman, sports fisherman, conservationist, we all recognize that our fisheries are threatened by land use issues. And this is something that we can come together on. We can be helpful in providing the science and the messaging. And constituents can be very influential at the local level telling their story with the science to support them. So we have a lot of hope in this group.

Meetings will likely be monthly for a little while until we really gain the focus and the agenda and the priorities. And then it may lessen a little bit. But it is really exciting. And Margot McGinty will be leading it for our DNR staff person.

And, you know, another e-mail that Noreen sent out a day or two ago relates to the Charles County septic tier map for which a public hearing is going to be happening on

May 8. And this is one of those items that the Fisheries Habitat Workgroup is -- we are kind of being reactive to. And we want to get more proactive. But this may be something that the Sport Fisheries Advisory Commission would want to weigh in on either in writing or in public testimony or leave it amongst your individual organizations to consider weighing in on.

But these are the types of issues that pose serious threats to the sustainability of our fisheries resources, not only for today but for our kids and their kids. So I am really excited to see the level of interest in trying to tackle these issues that we don't have regulatory authority over, but we do have a concern and a voice to speak for the fish on these issues.

Two last things. One is you see that there are several agenda items that relate to inland fisheries issues. Typically this Commissions focuses the majority of its time on estuarine and marine. So for those of you that are more inland interested, this meeting is for you. There are some very exciting topics. Brook trout, which is included in the draft Chesapeake Bay agreement outcome to protect Brook trout. Brook trout face a lot of these habitat issues that I just mentioned. We have a lot of new research and monitoring that is coming available. So that is going to be a really interesting thing. And then we have an invasive species

topic on rusty crayfish that is really interesting and something that we need to put more focus on.

Lastly, you may notice on the agenda we flip-flopped the public comment from the end to the beginning of the meeting. As you may recall in our operating guidelines, public comment is intended for the public to provide input on items that are not on the agenda with the understanding that the chairperson will try to provide opportunities on the agenda topics, as time allows.

Following what the Atlantic States Marine Fisheries Commission does, it seems to make more sense to have that at the beginning of the meeting, so that if someone from the public brings forth an item that is of keen interest to the Commission and feels like they need to discuss today at the meeting, that will provide the Commission an opportunity to try to build that into the agenda. So we are not only doing this for sport fish, but we are also doing it for the Toggle Fish Advisory Commission, too.

And there is a sing-in sheet in the corner. It is helpful for the chairperson and myself to sign in. If you want to make a public comment during this public comment period, it helps us allocate time. We will usually also ask for a show of hands, if somebody didn't sign in but would like to comment.

So with that, we can move right into the public

comment period.

Public Comment

MR. GOLDSBOROUGH: So are there any members of the public that would like to address the Commission at this time for items that are not on the agenda?

Ken?

MR. HASTINGS: Thank you. My name is Ken Hastings. I am with the Mattawoman Watershed Society and the Mason Springs Conservancy. And I can't add much to what Tom just presented about the workgroup and the importance of land use to fisheries habitat, except that I am one of those grassroots soldiers on the ground trying to fight this battle in Charles County.

And I really appreciate seeing the hearings advertised at a couple different venues within DNR. And I am really glad to see after all these years of people complaining about habitat and why we don't have enough fish, because we have too much development, there is too much waterfront pollution, and all these kind of things, that people are starting to become proactive in that. And this workgroup looks like a good place to start that and to capitalize on that at the local level.

I would also like to add one thing to Tom's comments. And it is unfortunate that DNR doesn't have regulatory authority over some of the most important habitat

issues. However, DNR, as an executive branch of government, is part of the smart growth subcabinet. And we have gotten just tons of support from the smart growth subcabinet down in Charles County, trying to counter some of the political will in Charles County. And there is an awful lot of it to pave over the entire county, including Mattawoman Creek.

So it is good to see that, at the executive level, that people really care. And not only do they care, but they are making an effort. And there has been many, many decades when I have been fighting this battle when I couldn't say that, so this is a plus.

Thank you.

MR. GOLDSBOROUGH: Thank you, Ken.

Anybody else at this time?

Mike?

MR. DAMMEYER: Yes. I had an issue I wanted to maybe bring up. I am not sure it is anything we can really effect at this meeting, but it is something to look at down the road. A couple of folks have called me about a trout fishing, fly fishing tournament on the Gunpowder with lots of different thoughts about the philosophies of fly fishing and, you know, catch-and-release fishing, and having a tournament in a stretch of water that has stream-bred fish.

I think what I would like to bring to the attention of maybe sport fish and something maybe the DNR could look

into is permitting and regulations along the lines of these tournaments, whether or not it is going to be where they happen, when they happen. Certainly, you know, we could wave the flag to say, hey, it's a chance to make money. But what it would do in that aspect would make it something that conservation groups could then comment on. So if they have applied for a permit for a tournament or something like that, you know, folks with an interest could have an opportunity to have some input on that application process.

So I just wanted to make sure I brought that up.

MR. O'CONNELL: Appreciate that. That has been a recent development Don Cosden, our inland fisheries manager, has been involved in. And we do have an agenda item on inland fisheries. And if time allows, Don can provide a little background on that. And we can suggest what next steps the Commission may want us to consider.

MR. DAMMEYER: Excellent. Thanks. Thanks for your time.

MR. GOLDSBOROUGH: On the other matter, the matter Ken brought up, is there another place on the agenda where we will come back to that, Tom, or should we --

MR. O'CONNELL: No. We can add a spot.

MR. GOLDSBOROUGH: -- adjust on whether we want to try to?

MR. O'CONNELL: There is no place on the agenda.

So if there is something the Commission would want to spend a little bit of time discussing, we will just have to make some time for that.

MR. GOLDSBOROUGH: I see heads nodding that that is worthwhile. We will try and do that, if we can.

Okay. Let's move on then to -- and this puts us right back on schedule -- to the NRP activity report.

Lieutenant Mauk?

NRP Activity Report

by Lieutenant Beth Mauk, MD DNR NRP

LT. MAUK: Good morning or good afternoon. Did everybody get the handout? It is in the book. So if you have had time to look over the handout, you will see that there is quite a bit of oyster activity, which I think has gotten a fair amount of press. So I am thinking that this is not news to any of the commissioners. But we certainly want to report it for those that maybe didn't know about it.

Other than that, it is kind of a smattering of striped bass cases. I think there is a river herring issue and a couple of smaller fish cases, not one of which is the undersized yellow perch. There was a remarkable amount of fish. And I think that is probably all we can say about that particular case at this time.

Do you have any questions about it, about the handout or any of our cases?

MR. GOLDSBOROUGH: Anybody? Frank?

MR. TUMA: I was going to bring it up earlier, but do we set a value to the fish or oysters that are caught? And I was wondering if there is a potential that if we set a value on any of the post oysters, crabs, whatever the issue might be, that it would fall from a misdemeanor citation type issue to a felony case.

LT. MAUK: There are sections of COMAR that do assess values for all different organisms. For the striped bass in particular there are increased penalties up to $1,500 per fish. And I should probably update everybody, because I mentioned that last quarter. We had four men with 228 small striped bass.

MR. TUMA: Right.

LT. MAUK: And the judge did indeed say that the top penalty could be $340,000. Both of the men that have been to trial so far received a probation before judgment and a fine of $2,000. And they were first offenders. And the state's attorney felt that that was fair. And I think if you were in court, you might feel okay about that, because these gentlemen certainly do not have $2,000. And they had to come up with it by the end of the day.

As far as an oyster, I would have to research that.

MR. TUMA: I am just using that as an example. But if we had -- and I am not sure where it would ever go -- you

know, a value set on any of the illegal fishing, I will call it that, and the potential caught, it would fall more into a felony similar to a traffic violation, you know, versus --

LT. MAUK: I think there would be some other issues with that, because we have fairly current legislation about felons in general. And so I think the legislature has decided -- and you would have to ask an attorney, but my hunch is that they don't want certain crimes to be felonies because of enhanced penalties. For example, littering over 2,500 pounds used to be a felony. It used to carry 10 years in jail and $25,000 in fines. It is now a misdemeanor.

So the penalties are still quite high, but they didn't want them classified as felonies. So that is sort of a different issue. The felony part is a different question than the fines.

MR. TUMA: Yes. There is quite a bit of discussion, you know, general public, general fisheries, about the amount of violations that go through. And they get a $25 fine or you get a suspended fishing license. And they don't even have a fishing license in the first place. And there is a tremendous amount of concern about that type of thing, where some of the discussion has been if there was a value put on the per fish, you know, it would fall into a different category, if that was the situation. And I was wondering if that --

LT. MAUK: And those fines are set by the court. And certainly the sections of COMAR that I talked about earlier, we can talk about later, after I do a little research. But I will tell you that in my 16 years of doing this job it is getting really much, much better. And that has to do with a lot of things, the cooperation that we have with fisheries and such a great job they are doing with the penalty section. And now that we have typically one day in court in each county where the state's attorneys are well versed in our laws and our judges. So we are really encouraged and impressed with some of the fines and penalties that we are getting. But you have to know that, you know, no one is going to always be happy in court.

MR. DAMMEYER: Right.

LT. MAUK: I mean, that is just a fact.

MR. GOLDSBOROUGH: Sarah might be able to offer some insights on this.

MS. WIDMAN: I can talk about it.

MR. GOLDSBOROUGH: When you come up, you mean?

LT. MAUK: She is next anyway on the agenda.

MR. GOLDSBOROUGH: Okay.

LT. MAUK: Anyone else for me?

MR. GOLDSBOROUGH: Any other questions for Lieutenant Mauk? Ed?

MR. O'BRIEN: I know when the federals involved

these things take time, but we have not had an update for quite a while on these major cases that are pending on the Eastern Shore. And I just wondered if you could touch on them or some of them. I know you know what they are.

LT. MAUK: Are you talking about striped bass or oysters?

MR. O'BRIEN: Strictly striped bass.

LT. MAUK: I can step out and see what I am allowed to talk about and come back in.

MR. O'BRIEN: Okay. Just the timing and, you know, just -- I realize you can't get into detail.

LT. MAUK: Sure. So when there is time for me -- I am going to step out. It might take me 15 minutes. If you let me know when it is time for me to talk again, I will see what, if anything, I can say.

MR. O'BRIEN: Okay. Great.

MR. GOLDSBOROUGH: Thank you.

Well, then let's move on. Sarah on regulatory and scoping updates.

Regulatory Updates and Regulatory Scoping Items Legislation Update

by Sarah Widman, MD DNR

MS. WIDMAN: Hello, everybody. Let's see. You guys should have had a couple handouts from us. This time you have the normal reg update, which I will go over in a second, our scoping handout that we normally do. And then I

have started including in there -- it is also web accessible, whenever we have updates to our suspensions list for suspended or revoked recreational users or commercial users. But I will include that in your handouts from here, just in case you guys didn't get to the website to view that.

So on the restitution, I think that is kind of what you were getting at a minute ago, just as a quick heads up. We have had in reg since the seventies a value list of species, if you take a species. And it was more geared towards pollution issues through the Department of Environment and those amounts of how much a fish is worth. They are very outdated. So we sought authority a few years back to put together a restitution system. Because right now, if you pay a fine in court, it goes to general funds. We don't necessarily see that back here. And a lot of the stakeholders have asked us to look into changing our restitution system, so that someone would pay essentially an administrative fine that would come back to help correct the problems in the resource that that person caused.

So we have been working on that. Unfortunately, it has not be a straightforward process. We scoped some ideas. And then in trying to implement that and move forward with the regs two years ago now, we had to peel it back, because we had to do more information gathering on how the process would actually work to make sure that we could actually make

a functional system. And so we have been kind of circling on that and perfecting it. And I have a feeling later this year we will be coming back to you guys, talking about what came out of that further research and probably rescoping that idea. But just so you know, that is in the works.

The reg update. There was a slew of public notices since your last meeting. Most of these are commercial fishing related, a couple oyster harvest reserve openings, the yellow perch modifications for the commercial season, and some shellfish aquaculture leases. And then we did issue the commercial female catch limits for this year.

Regulations that went into effect, let me see if any of these are specific to you guys. Or if you have questions, please ask. There are a number to do with spiny dogfish in the commercial fishery. We did go into effect the shark changes for recreational size changes. Eels, again, just kind of aligning with what ASFMC is doing. The menhaden was commercial reporting related. Oysters had to do with bushel prices.

Snapping turtles, we did do some overall updates, both commercial and recreational on that. Penalties went into effect. So that was our annual penalty stuff that we had done the scoping for last year's annual updates. So all that went into effect. And I will be pulling all the members of the Penalty workgroup shortly to have our annual meeting

sometime the end of May, early June, for the next round.

Bait harvester, again, some of the permits, like bait harvester permit, it is just to start aligning some things based on declaration periods, so that now that the permits are paid through the licensing system, they can be renewed and license renewal time.

Spotted sea trout, there were some limits and size changes there that went into effect. We had a sell recycling tax program that went into effect this spring for tax season. And right now we have -- I am sorry. I think we missed one on your list. And we had two last week. So I will give you a heads up on.

The two that are there, menhaden was a -- after discussion with the industry allowing basically an employee to be out with the permittee's vessel, which aligns them with our existing rules for the commercial industry and their licenses. Crabbing charters was something that the industry came to us, asking for some changes so they could be taking out crabbing charter trips and what the rules were for that would be clarified. So we did that.

Striped bass, we did put in a reg, but it didn't make it on the list here for the Atlantic Ocean ITQ system, which is already operating like an ITQ, but to align it with the Chesapeake Bay ITQ rules. So that is currently out for comment.

And then we just put in last Friday clarification on commercial tagging of striped bass and also a declaration period change for horseshoe crabs for a commercial fishery.

The three bag limit for gear is also currently still in place.

So the questions on regs we have been working on, already in place?

MR. GOLDSBOROUGH: Questions for Sarah?

MS. WIDMAN: I can move on to the scoping. Okay. I will move on to the scoping then.

Scoping, we have a few here for you, first on the blue crab front. So this was just more of a housekeeping issue right now. There are two things. One, crab pot labeling. I brought some attention to our DNR ID work screen on the on the coast. If you have a DNR ID, but they are not required to have a license for crabbing on the Atlantic Ocean side. So we are changing that to allow them to put also their name or address on there, as well, if you don't have a DNR ID number.

And there was some confusion about the distance between trap lines and coastal traps in that range. So we are going to try to clarify that again to make sure all the user groups understand the rule.

Right now, the ideas up on our website are mostly because it is housekeeping. Unless you guys had any concerns

that you want (technical difficulty) website.

MR. TUMA: Is there any discussion about the mixed gear types for crabbing? You know, where recreational can go 1,200 foot trap line and 30 pots? Thirty traps, excuse me.

MS. WIDMAN: At the same --

MR. TUMA: Same time.

MS. WIDMAN: Right. That, I believe, was already corrected.

MR. TUMA: What is it?

MS. WIDMAN: It should be -- you should be able to do both. You should be able to have net rings and trap lines, if you are have recreational harvesting. So -- either that was corrected or would be corrected. I am pretty sure we already correct that, because it came up in the process.

MR. TUMA: Okay.

MS. WIDMAN: Shellfish (technical difficulty) we don't have time for any details. So there are a couple different discussions with the industry during the legislative session, the outcome of that is to go forth with scoping (technical difficulty). Additionally, there is a (technical difficulty) area that would be open. And both of those (technical difficulty) opening and closing a hatchery. There has also been a (technical difficulty).

There has also been -- Somerset County (technical difficulty) Committee asked to (technical difficulty)

So those would be included in those packages. And we should have at some point maps of all this up on our website, as well.

So right now, most of these have been discussed with the industry. There is scoping ongoing on our website. And it is up there. As we get maps, like I said, we will have them up on the website, as well.

The Evans Reserve is going to be scoped and meeting down at Somerset County next month.

I don't know if you guys have any other comments on scoping on those materials. No?

All right. Snapping turtles. We are removing a declaration period for commercial snapping turtle permits, so that you can purchase the permit any time of year. And that was something that came up through our snapping turtle workgroup meeting earlier this month. And then we also have it out for scoping on our website. And that was just because of the ability for people who may have a license for just half a year, if you want to move into that fishery, and they just got a transfer for the rest of the half-year, they would not be able to do it, if we limited the declaration period. So there is not a reason at this point to not allow them to continue harvesting or getting the permit.

Okay. License-free fishing areas. I think Karen has talked to you guys a couple times about this. And you

have gotten some e-mails on it. So, again, we have been doing this ongoing identifying license-free fishing areas and the objectives for having them. There are 24 areas that we currently have designated. And under the kind of change of regime of how we are going about it. Six of them no longer meet the criteria for safety, accessibility, and quality fishing. Four of them sort of do. They are on the margin.

So back in the fall we did some survey work on this and identified some new areas that were higher quality and more safe and so forth. And we have been asking for input on that. You guys, again, have received some e-mails on that front. So we are back again looking for any input on how you might want the newest designated sites scoped. All of it will be on the website again like it always is. But we can certainly -- and we will be reaching out to specific jurisdictions, especially ones if we are going to try to take an area that is no longer functional out of the list. We will be reaching out to the specific jurisdiction. But aside from that, there was no other plan scoping.

Do you guys have any thoughts on that?

MR. GOLDSBOROUGH: I will make a comment on that one. You all got an e-mail maybe four weeks, a month, five weeks ago, something like that about this. And you may recall from that the discussion at the last meeting about this issue and need for the Department to get some feedback

from us on these free-fishing areas. I want to thank two commissioners who did respond to that e-mail, but remind others to try and stay on top of this stuff and seek input from your constituents in the fishing community, because that is what we are really here to do. And the Department really relies on that.

MS. WIDMAN: Okay. Moving on with gear. So we did we have the sport fish gear workgroup that we formed in early March. And we got some good feedback from them. And we had some follow-up discussions with a couple other stakeholders who were not able to make it and continue dialogue with everyone. So currently, based on all the input we got, it sounds like the consensus of advice back was that everyone wanted the three rod limit to stay removed from tidal waters, like the emergency that is still in place.

There are also discussions about jugging. So there were discussions of limiting it to ten jugs in tidal waters and also putting in potentially a season for that. So the season would have -- there would be a closed season March 1 through June 30. And that is taking into consideration concerns about striped bass in the tributaries.

There was some concern about leaving jugs unattended. So looking at some other states, how they have that, the one that seems most enforceable that we are asking for NRP to put on, as well, but was leaving it -- you

couldn't leave it unattended outside of the sunrise to sunset time period. So you could have it out during the day, but then you have to take it in at night or be attending it at night.

Trout lining would be prohibited in both tidal and non-tidal waters. Based on the feedback we got, jugging would also be prohibited in non-tidal waters. I don't think it is clear in that. Sorry.

Provides for traps. There is some confusion about the use of minnow traps that are allowed for recreational purposes. So just to clarify, (technical difficulty) boat, land, as long as they are attended daily and marked with an ID number. They cannot be left unattended out in tidal waters. And I think there was confusion about dip nets in tidal waters and why they couldn't be used. So this would allow them again to be used in tidal waters.

So those were the changes based on feedback. We are certainly looking for more feedback and comment. It is up on the website. But we are looking for your input as far as if you think we should do additional media reach-out during this month to try to get more input or any other reach-out to the public that you think might be useful on that front.

MR. DEHOFF: Sarah, one think I saw here is -- and it has been part of the workgroup, your workgroup, I believe

that when we talked we were all pretty much in kind of agreement that we didn't think jugging in tidal waters was a good idea.

MS. WIDMAN: Right. Some of the limits on them was the Chesapeake Bay tributaries. And it actually says (technical difficulty). So it would be looking at only allowing jugging in the tributaries. And that would be based on trying to go after the catfish, the invasive catfish, that everyone kind of saw as the genesis of why you want jugging to begin with. So looking at sort of limited -- and, you know, based on feedback, we could look at, you know, do you want all the tribs, certain tribs, or do you want to go out with, if you limit it just to the tribs, we limit the amount, we limit it when it can be out seasonally, limit attending it, whatnot. And then what is the comment on what everyone thinks about that.

MR. DEHOFF: I just remember that some of the conversations that we had at that point were talking about trying to chase down these jugs.

MS. WIDMAN: Right. Right.

MR. DEHOFF: You know, you put them out in the morning, and the tide goes out, the wind goes, those ten jugs are three miles down the creek. And being able to track them and recover them and things like that were going to be difficult. So you are just looking for more equipment.

MS. WIDMAN: Yes. So right now it would be in each of the tribs, but between non-tidal line and the mouth. So that's where it would be allowed under those restrictions, under those current restrictions.

MR. O'CONNELL: So we just appreciate that feedback. So as Sarah mentioned, we are going to put this proposal on the website. And it takes us back to a situation we were in a year or so ago. And now is the opportunity for the public to comment on these scoping items before we go forward with the proposals.

So, you know, if people are still concerned that these limitations are not far enough, this is the opportunity to voice that concern so we can consider that before we send in a final proposal.

You know, we also encourage those of you who are members of organizations to forward this regulatory proposal out to your members and encourage them to, either through you or directly to the Department, to provide input. We are really looking for that input and really appreciate the input we got from the workgroup and hope that we can move forward with the regulatory proposal that people are not surprised with and support.

Yes, Frank?

MR. TUMA: I think it is extremely important that when the scoping reports go out or whatever we are calling

them, that it clearly defines tidal and non-tidal. That was probably the biggest confusion around the first round. And it is very important that people understand that some of these proposals are for non-tidal versus tidal.

MS. WIDMAN: Okay. We will come up with a handout pdf we can put up there that breaks it down by that.

MR. O'CONNELL: Phil?

MR. LANGLEY: Yes. I am just curious. Is there anybody, is anybody aware of anybody jugging at this point or is -- I really haven't seen it or noticed it. Or is it something that we feel was attacking the invasive species, that more and more people may be unregulated before we get into it?

MS. WIDMAN: I can tell you we have gotten phone calls the past few years, probably the last five years, asking about specific to jugging for invasive catfish in the Potomac. But that is all I have heard of.

MR. LANGLEY: I mean, it would certainly be the best time to set the regulations before it becomes --

MR. O'CONNELL: I don't think (technical difficulty) people realized it was legal before.

MS. WIDMAN: And it was fairly limited, too, because of the line limits. So --

MR. LANGLEY: Right. Thank you.

MR. MORGAN: I would like to go back to the LFFAs

real quickly. I noticed that you have a great distribution on the Eastern Shore. But then when you go to Carroll County, Montgomery County, Howard, Prince George's, Calvert County, and St. Mary's, you don't have locations there for this fishing. Is there a chance in the future that you can designate some of those areas, also? Because, you know, you start looking in Montgomery --

MS. WIDMAN: I would think we can always consider areas. But I will leave it up to Tom, as far as how many we are looking at.

MR. MORGAN: Looking at Montgomery and Prince George's County, you have a huge population base there. And that would hopefully help get some --

MR. O'CONNELL: Given we have changed the objective to use these areas to try to give people an opportunity to experience fishing in open bay (technical difficulty) is that -- you know, my vision is that we have these license-free fishing areas geographically distributed throughout the state so that within so many miles everybody has access to one. You know, we worked with our staff and the parks and we looked to this Commission to provide further input. This is where we are right now. But we stand ready to look at additional areas to ultimately achieve that vision of having areas throughout the state.

So if anybody has ideas, you know, still reach out

to your constituents that live in these areas. And if they think they have an idea of an area, forward it to us, and we will evaluate it.

MS. WIDMAN: The last one, zero penalties. You may remember before we were meeting with county workers last fall to start working on a zero penalty system. And we did that over the winter. And that went out to the penalty workgroup to review, and they sent feedback. We are ready to go out for scoping on that. The full penalty system draft is up on the website or should be up by this afternoon, if anyone wants to review it or send it out to stakeholders. It mirrors the commercial harvester system, like all the (technical difficulty) there specific to dealers, obviously not the harvesting part of it, but anything that would apply to them. So right now it is up on the website. Again, it has been vetted through a number of dealers who volunteered for the penalty work group and the penalty workgroup, as well.

MR. GOLDSBOROUGH: Questions for Sarah? Ed?

MR. O'BRIEN: We spent a lot of time earlier this year talking about spot pots. And where is that on your agenda?

MS. WIDMAN: So the agenda right now, we were looking for the discrepancy that came down at the last commercial gear work meeting, in general looking to stop

punishing, was to figure out how do we define these fish pot elements and how the biologists felt about different mesh sizes and whether that would cause (technical difficulty). And so they really wanted to do a survey and look at it in the field.

There was somebody who volunteered at that meeting. It didn't work out to be able to do it this fall. But our biologist --- was able to work with another waterman, who he is going to work with next month through July/August. And we should have data then coming out the end of the summer that we can go back and meet with workgroup folks again and start working on what size fish pot meshes would work and move forward with the reg.

MR. GOLDSBOROUGH: Thanks, Sarah.

Other questions?

(No response.)

MR. GOLDSBOROUGH: Is that it?

I do want to mention one thing with respect to under shellfish (technical difficulty) the demonstration project. I would just point out that you all do have a summary of where that stands in your package, pilot study to evaluate the impact, that piece that describes the outcome of protracted hearings and negotiations during the legislative session. A couple of you might have been involved in that. I was. And I have to give the Department a lot of points for

patience and persistence in working that out. And I think it is a real good outcome under those circumstances. So take a look at that.

And note that Ed Liccione -- where is Ed? -- Ed stepped up and provided some recreational fishing input to those discussions and negotiations with respect to establishing a power dredge demonstration area in Eastern Bay. One area that was under consideration that was of concern for local recreation fishermen. So thank Ed for that.

Are you going to cover the regulations being developed?

MS. WIDMAN: We have ones that we previously scoped, so let me just address them. Commercial license target (technical difficulty)

Restitution, again, I mentioned that at the beginning of my spiel to you. And essentially, we are still working on perfecting that. And I will update the penalty workgroup on that. And we will probably be moving forward with that over the summer.

Aquaculture harvester permit restrictions we scoped back in the fall. We had hoped to put something in in December and working on language. We decided to hold it and spend more time making sure the language was correct on that. So we have been doing that. And that is getting ready to go.

Permit declaration standardization. I mentioned some of the packages, like the horseshoe crab one that we are putting in place, so that people can declare for these permits around the same time that they are declaring for their commercial licenses, so they can do kind of the one-stop shopping. So this is for a number of our permits.

Yellow perch also had a line fix that needed to be done for a wrong coordinate in that fyke net prohibition section there.

And then summer flounder. We have been out scoping previously, changing the commercial hook and line size limits on the Atlantic side for the one- to three-mile-out fishing zoning. And we are looking at finally moving forward with that, perhaps with a pilot program. That would be a two-year pilot program, looking at how that would work.

So that is what is upcoming that you have already heard about, but we are working on them now.

MR. O'CONNELL: And just a clarity on that summer flounder. That would change the commercial hook and line size limit, which right now is consistent with whatever the recreational size limit is to avoid user conflicts, particularly in the coastal bays, to allowing a commercial hook and line fisherman to operate under the same size limits, which is 14 inches as trawlers and gillnetters. And to mitigate user conflicts, they would be restricted to two

weeks in the spring, two weeks in the fall, and one to three miles offshore.

And this is something that there has been a lot of legislative push for the Department to resolve this issue that has been out there for before my time as director. So this is going to be a two-year pilot restricted to the offshore waters to assess the level of user conflicts that arise or don't arise.

MR. GOLDSBOROUGH: Any other questions for Sarah?

(No response.)

MR. GOLDSBOROUGH: Thank you, Sarah.

Lieutenant Mauk, did you have some more information for us?

LT. MAUK: I do have very little. The one individual has pled guilty. We are awaiting sentencing. We are talking about the federal striped bass case, if you didn't hear. Three individuals are slated for trial September 8. So that is where we are with those cases that I know are years old. That is how the federal system works, I am understanding. And if we get the sentence for the one individual, we will certainly bring that to you.

MR. GOLDSBOROUGH: Thank you.

Okay. Then let's move on to Gina on the legislative update.

Fisheries Related Legislation of the 2014 General Assembly

by Gina Hunt, MD DNR

MS. HUNT: Hello. Well, you have a big handout that holds all of the bills that affected fishery service. I am just going to touch on a few, in particular, I should say starting with four of the past (technical difficulty) Fisheries Service.

So the first House Bill 154, that adds a member to this Commission from the Tidal Fish Advisory Commission. And I am happy to see Rachel is here from Tidal Fish. So thank you, welcome, Rachel. And that is because of the passage of this legislation.

And Senate Bill 93, this was a departmental bill. This is the recreational incentive pilot program. We spoke to you about it at the beginning of the session. And this was basically a way of trying to market recreational licenses, both hunting and fishing, to people that have been out of recreational hunting and fishing for at least three years. And we are going to be working on, between wildlife and ourselves and IT, who we know would be selling these through our new license system, on some incentive discounts that we can offer for somebody that has been out for three years.

So as of 2015, we will have three years of data in our new compass system that we will be able to track back individuals and see if they have been out for three years.

So we will be reporting back to you guys at the July meeting with some of those ideas. Again, this is not just fishing incentives. It is also hunting. So we are going to try and cross markets across both of those activities, too.

House Bill 1148, this is the recreational striped bass fishery study. So basically this bill requires the Department to conduct a study on obtaining more accurate harvest data for the recreational striped bass fishery. Some of this work we were already undertaking in regards to, you know, improvements to MRIP. But we are going to continue that effort and work at, you know, evaluating opportunities to achieve better and more accurate data. Basically, the bill just requires us to do that work and then report back at the end of the year to the legislature on what we find.

And House Bill 1174, you probably would have heard about it more a couple years ago when the compass system first came out and, again, asking folks for their Social Security numbers when they bought licenses. If you remember, this was a pretty touchy subject a few years ago. And we were required by law at that time to obtain a full Social Security number. It meets some federal requirements.

And so at this time a bill was passed that says we no longer have to collect the entire Social Security number. We can collect just the last four digits. It has not been fully implemented, because we are still waiting for a waiver

from the federal government on not getting all of the Social Security numbers. So while the law has passed, it is not yet implemented. So if you go buy a license tomorrow, expect to provide your full Social Security number. But certainly we hope to have this place in a waiver by the 2015 season, if not sooner.

And then I did want to mention there are certainly plenty of bills that didn't pass. Phil mentioned Senate Bill 466, House Bill 1155, the oyster dredging bill that now, as a result of some work on that, there is a pilot project. So, you know, that was a pretty noteworthy bill that didn't pass, but -- I'm sorry. One side of it. Yes. No. I'm sorry. The other part of it passed. But anyway, it is a pilot project that came out that is more into now in regulation.

And then the other one I wanted to mention was Senate Bill 145, House Bill 145, coincidently the same number. That was the public notice bill that basically clarified, solidified, our authority to do public notices in both recreational fishery and the commercial fishery. So there was a lot of controversy over these bills this session. They were pooled. And the Secretary requested a summer study to work with the industry on language that they would feel more comfortable with. We currently do public notices. In fact, many of the recreational fisheries open by public notice. And commercial fisheries are often closed or

extended by public notice to catch limits or change. In fact, the bushel limits for crabs are established by public notice.

So these are still ongoing. We are continuing to do the public notices, but the clarification is still needed. And so we are looking to form a workgroup to talk this summer. Hopefully just one meeting, maybe two, where we can craft the language that everybody would be comfortable with and clarify that public notice authority.

So I don't know. There wasn't certainly as much controversy on the recreational side about public notice authority, but if there are some members from this Commission that would like to be involved in that workgroup, now would be the time, because we will be meeting in the summer.

MR. GOLDSBOROUGH: I would love to get a few volunteers for that. This is a very important issue. If you followed or participated in the legislative session this year, it was a big controversy. And as Gina said, it is unresolved so far, but it is a very important took to this department. And it has been used quite a number of times since the session, as a matter of fact, I think all in very productive ways.

But the authority does still need to be clarified. And so it is a pretty important workgroup. So I would encourage anybody who might interested in that to volunteer.

Jim Gracie? Thank you.

MR. O'CONNELL: And from our perspective if you guys -- appreciate that, Jim -- I think we would like to have at least one person from tidal, one person from non-tidal interest. You know, we would like to have a coastal person and, you know, a conservationist, conservation organization. I think we want to have a well-rounded group from sport fish, as we will ask tidal fish on Thursday.

MR. GRACIE: And that is going to be a joint workgroup?

MR. GOLDSBOROUGH: Yes.

MR. GRACIE: Okay. Good.

MR. GOLDSBOROUGH: So non-tidal, tidal, coastal, and -- what did you say -- conservation.

MR. O'CONNELL: Conservation.

MR. GOLDSBOROUGH: Dave Sikorski, tidal?

Let's see. Val's proxy is not here.

MR. : I don't hear an objection.

MR. GOLDSBOROUGH: Well, if Beverly is not here, maybe Todd wants to volunteer Beverly.

MR. RUSSELL: Hold off on that one.

MR. O'CONNELL: We can follow up with the two of them.

MR. GOLDSBOROUGH: Okay. We will follow up on the coastal representative, since neither one of them are here.

Good.

MS. HUNT: So you are on it, as well, did you say?

MR. GOLDSBOROUGH: I am on it. Dave is on it. And Jim. Thank you.

MS. HUNT: Okay. That's all I have unless you have any questions about bills.

MR. GOLDSBOROUGH: Did you have one, Roger? Did I see your hand go up? No? Okay.

All right. Moving right along, we are into invasive crayfish. And I must say, being somewhat oriented, when I saw that, I thought it was a misprint and it was supposed to be about blue catfish. But -- sorry about that, freshwater folks.

So just to -- Jay Killian is with the Department. He works for a different unit, The Resource Assessment Service. He works very close with our Inland Fisheries Division. This is an issue that our invasive species matrix team within DNR has been talking about. It is also an issue that the Pennsylvania Fish and Game Commission is looking serious at and considering a proposed rule at this point in time for which the Fisheries Service has offered support for.

This is a big issue. And we appreciate Jay coming in today. He knows his stuff. And I think it is going to be a very fascinating presentation and hopefully get this Commission interested in this subject matter.

So welcome, Jay.

Invasive Crayfish and Potential Possession Rule Change

by Jay Killian, MD DNR Resource Assessment Service

MR. KILLIAN: Thank you. How should I advance the slides from here.

MS. : You can just get Tom to stand up there and move it forward.

(Laughter)

MR. KILLIAN: Okay. So I know most of you. When this group talks crustaceans, they typically talk about blue crab. But I am going to shift your attention upstream for about 15 minutes or so to a problem we are having up in our freshwater streams and lakes with another group of crustaceans, the crayfish.

(Slide)

So I am going to give you some background on the problem, tell you what we have here, how it got here, what the consequences of those introductions are and then, most importantly, what we are hoping and planning to do to prevent the further spread of these invasive species.

So I know most of your interaction with crayfish in the past probably has been as a kid, kicking over rocks and picking them up in streams, maybe eating them. Most people, when they think about crayfish, they think about bait. They think about that they are good prey items for bass and other

game fishes. And that is true, but they really serve a huge role and are extremely important in our stream and in our lake eco systems. They are often considered keystone species, because not only are they important prey items for fish and birds and mammals, snakes, turtles, but they also have great influence over a lot of the other components in the lower part of the food web, from breaking down organic matter, leaves. They form the basis of the aquatic food web in streams. They consume algae and can control algae levels. They are fierce predators on stream insects, snails.

And so again, to take away from the point I want to make on this slide is that they are keystone species. And so that if you tinker with those keystone species, if you take a native species out and replace it with a non-native, if you add a lot more crayfish to a stream, as you do, many times when you introduce an invasive crayfish, you have the potential to cause a profound effect on the ecosystem.

(Slide)

Now this will surprise most people. Most people think a crayfish is a crayfish and that there is one species everywhere. But in Maryland we are pretty diverse. We have nine native species. And for a state that size, our size, that is pretty good, considering that all of Europe has only five native. So we are pretty diverse.

So nine natives. And as of 2014, we have five

introduced species, non-native. That means that 35 percent of our species out there are non-native, meaning they are not from Maryland. And they originated elsewhere and have been introduced. Of the five, three, the red swamp crawfish, the virile crayfish, and the rusty crayfish, are particularly invasive, considered invasive because of the problems, the ecological problems, they have caused elsewhere.

These three species are very well studied. There has been a lot of work done on them. They have become pretty widespread in the U.S. and have caused a lot of problems throughout the U.S. and, in the case of the red swamp crawfish, have been introduced throughout the world and have caused a lot of problems elsewhere.

Of the three, rusty crayfish is one you may have heard about and tends to be -- it is the most notorious of the bunch.

Speaking of the other two that are not considered invasive, they are relative benign. We don't know exactly what problems they have caused, but they are not particularly problematic at this time.

(Slide)

So how did they get here? Well, when we talk about invasive biology, you will hear the word vector. And that is a word describing the pathway to which species are moved around this planet. The most important vectors of non-native

crayfish in the world are what you see, their aquaculture, the live bay industry, aquarium pet trade, biological supply industry. Invasive crayfish is not just a problem in Maryland or the Mid-Atlantic. It is a problem throughout the world. So it has been, again, relatively well studied.

(Slide)

In Maryland, all four vectors have the potential to introduce non-native crayfish. But as you can see there, with the exception of one, four of the five, the suspected (technical difficulty) introduction, how they got here in the state is through their use as live bait. And it is not only how they got here, but now live bait is the vector through which these species can be moved from marsh to marsh within the state.

(Slide)

Virile crayfish is a crayfish that has been here, of the five introduced species, has been here the longest, as we understand it. It is a species that is native to the upper West, Midwest, and Great Lakes region. And it was first reported in a published report here in Maryland from five locations in the Patabsco River Basin in the late fifties. A fellow named Frank Schwartz* did a --- and found that the virile crayfish, as of 1963, was not just in five locations. It had become the most widespread and common crayfish in the river basin.

Move forward 13 years, and the next published report we have mentions --- mentions in 1976 that the virile crayfish had not just -- was no longer just in the Patabsco, it was also introduced into portions of the Gunpowder the Upper Patuxent and the Youghiogheny Rivers.

Now jump forward 40-plus years and you see the distribution of this species as of 2014. It is the most widespread invasive crayfish in the state right now. So how does that happen? Well, certainly once a species is introduced into a stream --- upstream and downstream. And so some of that distribution can be explained by just the movement of this species throughout a watershed. But invasive crayfish do not crawl over land and cross ridge tops from watershed to watershed to watershed. And they are not carried by birds. The spread that we see there, especially from watershed to watershed, is through their use as bait, anglers purchasing or catching these crayfish, transporting them to another watershed, another location, using them, and then those in the bottom of the bucket that they don't use (technical difficulty)

We have a picture of that from a survey that we did of freshwater anglers back in late 2008/2009 in the --- bait shops. And we conducted a mail survey looking for just information on bait use in general from our freshwater angler group. And in brief, what we found was that 20 percent of

Maryland anglers at the time used crayfish as bait, that the majority of those anglers using crayfish as bait, 72 percent caught their own. So the source was mainly self caught.

(Technical difficulty) our bait shop survey that only five at the time bait shops throughout Maryland carried live crayfish. And they did it on a pre-order basis. They were not like constantly stocked. You had to call in ahead of time. So it wasn't (technical difficulty)

The most important statistic we got from that survey was that 69 percent of anglers using crayfish far too any released live crayfish at the end of their fishing trip, unused crayfish. Now, of course, most of that release presumably is where they caught it. So you can catch a crayfish, you fill a bucket, you fish with them, you dump them, no harm done. The problem is the moving of those crayfish to another watershed and releasing them.

(Slide)

So what is the consequence? Crayfish are very good at invading new areas and have. And these are some of the characteristics they have that make them such prolific invasive species. They are big. They are aggressive. They have rapid growth rates. They produce a lot of young. And they are very environmentally tolerant. So they can get into new areas, establish themselves, and (technical difficulty).

And one of the first consequences that you see

following an invasive crayfish introduction is the loss of native biodiversity, native crayfish species. They typically (technical difficulty) and there is many mechanisms they call it for how one species out-competes or eliminates the native species. But (technical difficulty)

It is just competition for limited resources. and so you see, following a non-native crayfish introduction, typically native crayfish species decline in abundance and in a lot of cases are eliminated from entire watersheds. And this has happened a lot everywhere throughout the world. And it has been studied a lot. This is just a brief list of a lot of the studies out there documenting this phenomenon. And it is so widespread and so common that it has been called, the introduction of non-native crayfish has been called the single greatest threat to crayfish diversity worldwide.

So has it happened in Maryland? It has with a number of our native species, but especially with this native species, spiny cheek crayfish -- and this is a crayfish that is distributed essentially from Frederick down through Southern Maryland and onto the coastal plain all through Delmarva. That is what the historical distribution was. But as the Bureau of Crayfish has spread through Central Maryland over the past 50 years, we have documented declines range contractions of that species of spiny cheek crayfish in

response, it is presumed, extirpated from 15 watersheds where now Bureau of Crayfish is very, very abundant.

And this story, this pattern of Bureau of Crayfish replacing spiny cheek crayfish has repeated itself up in Pennsylvania and Southeastern Pennsylvania where the spiny cheek crayfish is native. Its range has contracted considerably. And they are concerned that over the years it may become extirpated from Pennsylvania. In West Virginia, spiky cheek crayfish no longer occurs. It has been extirpated completely due to the spread of virile crayfish.

So what is the big deal? Well, I am of the opinion that if you lose native biodiversity, it is kind of -- you know, that is a big deal and you have to take a step towards prevent. But I know a lot of folks wonder, well, if you take one crayfish and you put another one -- you take one out, put one in, what's the big deal? Does replacing one species really make a difference? And the answer, of course, is yes.

And the reason being is crayfishes are different species. A crayfish is not just a crayfish. And so a native and a non-native, they are not ecological equivalents. They interact differently with the other members of the community. You know, it is like saying a fish is just a fish, and we know that is not the case.

Secondly, invasive crayfishes, what makes them invasive is that they can get incredibly abundant, higher

densities than you will ever find native species. And I have been in a lot of streams in Maryland. If you have ever walked in a stream in Maryland or anywhere in the Mid-Atlantic and looked around, as you walk you see crayfish scattering about, and you have noted to yourself, hey, man, there's a lot of crayfish here. Well, you are standing in a stream that has been invaded. You will never see the native species at that density.

And based on data we have generated from our Maryland biological stream survey throughout the state from 2007 to 2009, we collected, quantitatively collected, crayfish as part of our survey. And we found that invasive crayfishes can occur at densities seven times greater than what we find most of our native species. In other states, that density can be ten times higher than natives. And it is this propensity for these crayfishes to reach these high densities in all this number, you know, packing all this energy into one species that can have a big effect on the ecosystem.

And so going back to that keystone species idea, you put all that energy into one animal, a lot of that animal. And of course, it affects that energy. There is a finite amount of energy in these systems. And so there is less energy by default for other organisms. And so you introduce an invasive crayfish, and you can disrupt the flow

of energy up and down the food chain.

And that has happened. And it has been well studied elsewhere, where studies have looked at the effects of invasive crayfishes, not just on native crayfishes, but on other aspects of the ecosystem. And you see this general pattern, the potential decline in leaf matter and detritus, which again forms the base of the food web in streams and lakes, reduced water clarity, plants, insects, and other invertebrates, freshwater muscles, snails, amphibians, and even recreational fisheries. And it seems kind of counterintuitive. You think, well, you have more crayfish, crayfish make good fish food. Wouldn't more crayfish make for better recreational fisheries? And that is not the case.

I have yet to read a report that says, well, these crayfish came in and were introduced, and now the sport fishery is doing great. I have yet to read that. There are published reports of declines in recreational fisheries, especially where the studies have been done up in Wisconsin where Lipoma sunfish recreational facilities have declined. I have read about declines in rainbow trout growth and abundance and brook trout.

Now, of course, you have declines in recreational fisheries. You also have decline or an economic impact, as well. And that has been documented in Wisconsin, as well. Now, has this happened in Maryland? I don't know. The

studies have not been done. But it is possible. Certainly we have seen the loss of the native crayfish, other impacts. You know, the potential is there.

(Slide)

So what has MD DNR done to reduce the spread? Well, we have increased our efforts really since 2006. We have paid a lot of attention to this issue. And we have taken every opportunity we can over recent years to spread the word to our anglers, to inform them of the consequence, potential consequence, of dumping not just live crayfish but life anything. Any of your live bait has the potential to introduce and move around non-native species.

And so we have taken every opportunity. This is the latest fishing guide that gets handed out with every angler license. And in here you have a story on basic crayfish. We have posted signs where we have regulations to alert anglers to the problem.

(Slide)

So we have taken a lot of effort, you know, we have put a lot of effort forward on angler education, but we have also taken steps in regulation in trying to prevent the spread of these species. We have prohibited the import, sale, possession, and transport of a few species. And the most protective measure we have taken to date was back in 2008 when we, in response to the discovery of rusty crayfish

in this state, we prohibited the catch, possession, and use of crayfish of all species in the upper Potomac, middle Potomac, and lower Susquehanna River. So the possession of any live species was prohibited. Upon catching, anglers were instructed they had to remove the head. And this headless regulation, again, was aimed to contain the rusty crayfish in the basins where we knew it to be. And those were the three basins, portions of those three basins, where we knew it be, but the idea of preventing anglers from catching them and moving them to other river basins in Maryland.

The regulation was pretty strong. It allowed for the continued use of crayfishes, albeit dead crayfish, but anglers could still use crayfish. It allowed for the harvest for consumption. And the best thing was it was enforceable. If an NRP officers walked up on an angler in the middle Potomac with a bucketful of live crayfish, it was easy to note that that was against, you know, breaking the law.

(Slide)

But there were some weaknesses to this headless crayfish regulation. It was, it is difficult because it is by basin. It is difficult for anglers to interpret to some extent, because most people don't know where basin boundaries are. Most people don't know where the middle Potomac ends and the Potomac Washington Metro Basin begins. So interpretation was difficult. And it was also limited in

scope. Again, it was focused on the rusty crayfish invasion, but it left a lot of river basins throughout Maryland unprotected. And there are a lot of watersheds remaining in Maryland, even though we have five non-natives, there are a lot of watersheds that do not have any and are worthy of protection and are also vulnerable at this point in time.

(Slide)

So how can we improve protection in Maryland? We are proposing to extend the current headless crayfish regulation to include all Maryland river basins, extending the ban statewide. And this would be the strongest step we could take. It would allow for -- it would prevent further spread of the crayfishes in all river basins that are already here. It would proactively prevent new introductions of species we don't have quite yet here in Maryland that can be brought in from out of state. And the best part is that it is easy for anglers to interpret and easily enforceable.

(Slide)

And it is also timely. You know, we are aiming to have this, to move forward on this during the rest of this year. Pennsylvania is also aiming to have a regulation in place, a statewide ban on the use of live crayfish as bait, as of January 2015, as I understand it. Now, they are in the -- I think they just finished the public review process. SO this is still in the works. But what they are doing is

essentially they are taking the headless -- they are modeling their regulation off of our headless crayfish regulation.

So this would improve, of course, improve protection of our boundary waters, the waters we share. And it would make for a very consistent regulation between the two states for anglers that, you know, fish in both areas.

(Slide)

And so here is the timeline for the proposed crayfish regulation. We are asking you today to provide us feedback on this regulation and take this information back to your constituents and ask them to provide us feedback. We are looking to get feedback by May 31. And then, as you can see there, with your advice on scoping, looking to scope the regulation in August, propose the regulation in September with the plan to have it effective in January 2015.

And there you see my e-mail address, if you want to provide feedback.

Is Sarah here still?

Do you have anything to add on the whole schedule there?

MS. WIDMAN: No. That is pretty much it.

MR. GOLDSBOROUGH: All right. Thank you, Jay.

MR. KILLIAN: Thank you.

MR. GOLDSBOROUGH: So this is clearly a good opportunity for the Commission to provide a service to

contribute to the development of important guidelines rules in this case to head off a real potential environmental problem. So there are a number of us who represent organizations. They have information available that we should be readily able to distribute to increase awareness of this. So make note that that opportunity is there. So I encourage you all to do that.

Does anybody have any questions for Jay or comments? Ray?

MR. MORGAN: Jay, you have Pennsylvania covered. You have Maryland covered. You have other states in the Chesapeake Bay Watershed. How are you going to reach out to like Virginia and New York and kind of get the on board, too. And part of West Virginia, obviously. I mean, it is not just states. It is the whole Chesapeake bay Watershed.

MR. KILLIAN: Yes. Well, hopefully two states lining up a regulation that is really consistent and that is as strong as these would hopefully trigger other states to pursue the same lines. Virginia -- different states -- and you find this throughout the U.S. -- they have attacked this problem differently. Some have not attacked it at all. New Jersey hasn't, to my knowledge, done much. I am not sure exactly what steps New York has taken. Delaware hasn't moved. But Virginia has banned, years ago now, over ten years ago, banned the sale of live crayfish as pets and as

bait. The loophole that they left open was that anglers are still allowed to use crayfish and move them. So the species that had already become established, they can still move. So that is not being regulated. And it is causing a problem down there for sure. But hopefully it will initiate additional regulations in these other states.

MR. GOLDSBOROUGH: Mack?

MR. WOMMACK: Yes. I was just kind of curious. These crayfish up in these streams and all, what is the percentage of food chain that they supply to like blue herons, otters, raccoons, catfish? I mean, are they part of their food chain, as well? I am wondering why they don't have any natural enemies. Because when I am in the streams fishing, I always see these type of creatures come down and grabbing stuff out the water and eating it. So I am just wondering what's going on. They don't taste good or what's going on?

MR. KILLIAN: No. That is not say that the invasive crayfish aren't being consumed. There are some studies that suggest they are not as -- they don't, for fish, at least, they don't provide as good for it, because they are bigger and more aggressive than the native species. And so fish risk being damaged. Big bass will sometimes tend to leave them alone and opt for the native crayfish, if one is there. But they are being consumed.

Why they can attain such high density is --

MR. WOMMACK: A mystery.

MR. KILLIAN: It is right now. It is not well understood. I mean, there are ideas that they are tolerant and don't have as many natural enemies. You know, it is a mystery why they can maintain such high densities. And in areas of the northern Monocacy, where we have rusty crayfish, I mean, the densities up there, the abundance, is unbelievable. If you ever walk around in the northern upper main stem of the Monocacy River, you would be amazed at how many crayfish are in that stream. And you wonder how they can sustain themselves. Well, they were sustaining themselves at the expense of something, because they are (technical difficulty). They are locking up a lot of that stream energy.

MR. TUMA: Is there a commercial industry for catching them, you know, for eating?

MR. KILLIAN: In Maryland?

MR. TUMA: Yes.

MR. KILLIAN: No, there is no commercial harvest in fresh waters allowed. Correct?

MR. TUMA: I mean, I hunted on a pond over on the shore that had crayfish, you know. I'm sure it wasn't these type, but I was just curious whether -- I mean, he raised them for --

MR. KILLIAN: Yes. There has been some aquaculture in the past. And to my knowledge, most of those farmers over there that had them don't do it on -- you know, they are not pursuing that as much anymore. But in the late eighties for a spell, there were farmers that were raising them for local restaurants, trying to create a market. And largely, you know, they were competing blue crab, you know. So --

MR. TUMA: Well, let's create a market.

Thanks, Bill.

MR. DEHOFF: Jay, when you were going over this, I noticed that you had about 26 percent of these people say they purchase the crayfish from the bait shops. Everything that I have heard us talk about so far to this point is on the angler level. Is there anything going to be approached at the bait shop level to restrict what they can sell, if they can sell, of crayfish? Because that seems to be where a lot of these are coming from.

MR. KILLIAN: Well, there are regulations on the books. At least it is illegal to import rusty crayfish and a number of other species that aren't here that could be problematic if they got here. It is illegal currently for anyone to import those, including bait shops. How well, you know, how much that is enforced is a question.

But at the bait shop level, you know, I think the problem, if you ban the use of live crayfishes in general,

the problem with the bait shops would not be a problem, because the sale of them wouldn't be -- you know, not many anglers would be buying them.

So I think the problem, the fact that the largest source is self-caught, is the biggest issue that we have.

MR. DEHOFF: So you feel that the biggest problem is people taking them from one stream, putting them in a bucket, taking them over to the other lake and fishing, rather than actually purchasing them from someplace and then introducing them into the --

MR. KILLIAN: Yes. Even though 26 percent of anglers said they reported getting them from bait shops, you know, they weren't that many -- it wasn't at the level where they kept them in stock all the time.

MR. DEHOFF: Right.

MR. KILLIAN: I mean, it wasn't a very popular bait, crayfish bait. But yes, absolutely. And, you know, anglers are going to go to places where they can -- they are going to want to spend more time catching bait, or less time catching bait, more time fishing. And they are going to go to places where there is a lot of crayfish. And like I said, if you have ever been in an area where you are like, wow, there's a lot of crayfish here, you are walking around in basin crayfish. And so that is where the problem is.

MR. GOLDSBOROUGH: Jim?

MR. GRACIE: What do you know about their life history and habits? Is there any inter-basin transfer on the road or is it all movement, just being carried by vectors?

MR. KILLIAN: There is movement within watersheds on their own.

MR. GRACIE: But not inter-basin.

MR. KILLIAN: No. No.

MR. GRACIE: How did they get dispersed in the first place?

MR. KILLIAN: Through millennia of --

MR. GRACIE: They showed up everywhere, right?

MR. KILLIAN: Yes.

MR. O'CONNELL: Do you think that part of the scoping should include prohibition of sale, getting back to the previous comment?

MR. KILLIAN: Well, that's the route that Virginia took. I don't know. I don't think it would be a major, based on our survey, a major economic impact to the bait shops. It could include that certainly. And that would be, you know, just getting at that smaller, but still an important, source. You know, it could -- it would be beneficial certainly.

MR. O'CONNELL: We should give that some consideration.

Any comments from folks about that, that particular

point?

MR. COSDEN: They may be sold commercially for food. And we would have to consider that, as well.

MR. O'CONNELL: Are you aware of any commercial sale of these invasives of Maryland that --

MR. KILLIAN: You can get -- I am sure you can contact any seafood in Louisiana and have live crayfish shipped. It is going to probably cost you a lot, but certainly that can happen.

MR. TUMA: They are selling her for food right now.

MR. KILLIAN: Do you see them live? I see them frozen.

MR. TUMA: Yes. Weiss had them the other week when I was over there.

MR. KILLIAN: And there are the four -- bait is not the only vector. So we have seafood. We have pet shops. And the biological supply industry, as well, which is largely Carolina Biological Supply, those that supply schoolteachers that want to raise crayfish in the classroom. And you can get them over the internet.

MR. TUMA: Grow and release them. Right?

MR. KILLIAN: Yes, yes. And we have heard reports. And we have actually -- our invasive species team here has sent, because we have heard reports of that, not just for crayfish but many things, we have sent letters from the

agency to the science directors of each county, and we have done that on a yearly basis over the past two years, reminding them of the problem with that and to have science directors inform their teachers that, hey, you can raise them, bring them in, that's fine, just don't have part of the lesson -- make part of the lesson why you don't release them, rather than no lesson to release them.

MR. GOLDSBOROUGH: Any other questions from the Commission for Jay?

(No response.)

MR. GOLDSBOROUGH: Seeing none, any from the audience? Larry?

MR. JENNINGS: I am just questioning why we make it -- why we allow them to be sold in the first place. And pet shops are a prime place for not only crayfish but other fishes that don't belong in our streams. And people think they are doing something good by putting it in their stream out back. And we need a law that, you know, this is wrong. And for us to allow it from some retail shop to make a nickel off of it, get out of here. I mean, we need to ban these invasive species and put it right up front.

Because a tackle shop sells you crayfish, and they are alive, are they going to tell you it is law to kill it before you fish it?

MR. KILLIAN: Well, I mean, I largely agree. I

know that the trouble with banning invasive species is that you don't always know what is going to be invasive. I mean, some are -- it is clear, you know, that rusty crayfish is a problem that we shouldn't -- and we have bans on the import and sale of that species. But there is a lot that is sold at pet shops, certainly, that we don't know much about it. And it could not be one that we flag as invasive. And then it could be introduced and become a problem.

MR. GOLDSBOROUGH: Okay. So they have a May 31 deadline when they would like to get some feedback. So they have materials. Are those materials available on the DNR website?

MR. KILLIAN: What materials?

MR. GOLDSBOROUGH: Didn't you have a brochure or --

MR. KILLIAN: Oh. I was just -- in the fishing guide, if you all buy an angler license this year, there is a spot of invasive, a page, full page of invasive species in general. And crayfish are highlighted in it.

MR. GOLDSBOROUGH: Okay. Well, that is great. That is readily available to everybody. So in the fishing guide, the 2014 fishing guide, you can point your constituents to that. And, Jay, you do want them just to use your e-mail address? Is that what we want to do, for getting information back?

MR. KILLIAN: That's fine.

MR. GOLDSBOROUGH: Okay. So that is on the screen now, jkillian@dnr. Everybody make note of that. If you think you can get the word out and potentially get some feedback to Jay by May 31.

MR. KILLIAN: Thank you, y'all.

MR. GOLDSBOROUGH: Let's move on to Fisheries Management Planning. We have, it looks like, a tag team. Are we going to start with Kelly? Is Kelly Collins here?

Kelly. All right. There you are.

MR. O'CONNELL: Kelly is from Chesapeake and Coastal Services within DNR. And there is a project that I became aware of. It is really early in the planning phases, but we want to bring it before the Sport and Tidal Fisheries Commission. So welcome, Kelly.

And you do have a handout in your package. It is under tab six.

Fisheries Management Planning

Consideration of Mallows Bay Being Proposed

as a National Marine Sanctuary

by Kelly Collins, Coastal Planner, MD DNR

MS. COLLINS: So I am with our Chesapeake and Coastal Service. I am a coastal planner. And I just started working with a number of folks on this project.

(Slide)

Basically, we are looking at the potential for the

Mallows Bay area to be designated a national marine sanctuary. This would be the first in the Chesapeake Bay region. So if you are not familiar with Mallows Bay, it is on the lower Potomac just south of Quantico on the Virginia side. And here is a larger area map. We have Smallwood State Park and Sweden Point Marina just north and Purse State Park to the south.

This area, sorry, this diagram shows some of the water trails in the area, the John Smith Water Trail, the Star Spangled Water Trail. A number of historic national trails go through this area, as well.

(Slide)

So Mallows Bay Park right now is managed by Charles County. It is owned by DNR. And our waterway improvement fund has put a lot of money into the boat ramp and kayak soft launch in this area. The park itself is about 185 acres. It is a high use for recreational kayaking, fishing. It is a premier bass fishing site.

(Slide)

And it is also the home to a number of shipwrecks, actually the largest assemblage in the Western Hemisphere. It has a real interesting history dating back to the Revolutionary War. But the majority of these shipwrecks actually come from World War I. There was a need to build an emergency fleet for a transport, and there was a need to do

it quickly. So they built the ships out of wood. And it was a major shipbuilding effort throughout the U.S. And they used wood to save time and save money. Unfortunately or, I guess, fortunately, the war ended before the ships were deployed. So they ended up having to sell the ships off for salvage. They were moved around quite a bit and ended up down in the Mallows Bay area.

The company that bought them wanted to burn them. And this was done over the protests of the local community and the local fishermen, who were worried about the ecology of the area and what the burning of all these ships would do, over 88 of them. But it happened anyways. Since then, the area has bounced back. And the wood ships and the decay actually contribute to the sediments of the area. And it is a great fish spawning nursery area. Really interesting ecosystems on a lot of these ships.

(Slide)

So the major driver for this area as the National Marine Sanctuary are these shipwrecks. Just a little bit about the NMS program. It has been dormant for about 20 years. So this is the first time that NOAA will be opening up to community-led nominations. It is expected this summer. There are about 14 sites, all of them coastal. This would be the first in the river system.

And one of the first questions you always get is,

well, it is a sanctuary, does that mean this is completely a hands-off area? And I have been through all of the regulations and management plans for the 14 sanctuaries up there. And the fish that are next to all those names are ones where they do allow recreational fishing. Some of them do have special management zones, especially those that are established to preserve key trails and other sensitive habitats. But for the most part, there really is an effort to ensure compatible uses. And recreational uses are a major priority.

The process is such that the nomination will potentially take a couple of months. And if this site is nominated, then there will be a public scoping process. And this will be led by NOAA and the state. And it might take up to two to three years. So as with most federal processes, it will not be quick. But we are pretty excited about it. And we would really like to get any feedback and input that you might have for this effort.

MR. O'CONNELL: While this is a recreational commission, you know, I just want to point out that. And Kelly and I have spoken at a previously meeting that while she clearly stated that recreational fishing is allowed in a majority of them, commercial fishing is also allowed in some of these. Typically, commercial gear that would not be impactful to like a shipwreck or coral reefs or other

important habitat, those gears may be prohibited. By other gears that don't have that negative interaction are allowed in some of these national marine sanctuaries.

MS. COLLINS: Yes. And again, any regulations would actually be established during this public scoping process when the management plan is developed. And so we would come back to you and get additional input down the road. But I wanted to make sure you are aware of this effort.

MR. GOLDSBOROUGH: Any questions or comments for Kelly?

MR. DEHOFF: Obviously we are all, you know, in favor of protecting the area. What are the -- are there any potential negatives or cons to having this protected? Because I know that recently our neighborhood went through trying to go into the national historic site. And everybody was all for it until they found out what you couldn't do by doing that.

So what does this bind us as users? What does it maybe keep us keep from happening or what --

MS. COLLINS: Again, that would all be determined during this public scoping process. And the public and the community would have a lot of input as to whether any regulations were actually established. In most sanctuaries, as I said, really the only regulations include things like

discharge. And as this would be, you know, an important archaeological and historical site -- in fact, it is actually going through right now. The Maryland Historic Trust has put it forward for the National Register of Historic Places. That is happening concurrently. Really, many of the regulations would just be with no salvaging or taking from the shipwrecks themselves of the archaeological resources.

MR. TUMA: Are these funded by the state or is this national funded?

MS. COLLINS: This is national funding. So the actual management can be either through state or federal. In this case it would be all in state waters, Maryland state waters. So --

MR. TUMA: So there is no impact on DNR or the state.

MS. COLLINS: No. These generally come with funding for implementation of the site, sometimes even funding for a facility to be built for interpretation and education, as well.

MR. GOLDSBOROUGH: Any other questions for Kelly?

(No response)

MR. GOLDSBOROUGH: So note that we do have a handout in your packet there that you can share with others and spread the word and make sure there is awareness of this proposed or potential nomination at this point, I guess.

Thank you, Kelly.

MS. COLLINS: Thank you.

MR. GOLDSBOROUGH: All right. Into brook trout now. Is Alan here? Yes. So we are going to have a couple of -- we have a presentation by Alan Heft and I think Matt Sell, who are our brook trout biologists. Matt Sell's position came about from the license fee increase back in 2007. And this is an opportunity to highlight some of the work that they have been doing. And then we will have a review of the Brook Trout Fisheries Management Plan.

Brook Trout Research and Management

by Alan Heft, MD DNR

MR. HEFT: Well, why she is getting this presentation up, I have a quick presentation. I will give you a little bit of background and history on brook trout in Maryland. For those of you who have not seen a brook trout, who knows what a brook trout is? Everybody in here for the most part know brook trout, seen brook trout?

(A show of hands.)

MR. HEFT: I don't see a lot of hands, a few hands.

Brook trout are our native trout species. The things that you hear about a lot of times through your local papers and your magazines, people talk about rainbow or brown trout, the stock trout fisheries, some of our larger fisheries. Brook trout are our native fish. They are the

ones that were here since, let's see, Ray, 12,000 years ago, since the last glaciation.

MR. : About two million.

MR. HEFT: Two mil. The most recent iteration of where they are at has not be that far, well, geologically not that far, long ago, 10, 12 thousand? They haven't moved here in the last ice age. Well, they were here way back. They got forced here by the last ice age. They were pushed here. So in other words, they are our natives. They have been here a long time, almost as long as Ray has been at the lab. So they have been here a long time.

They are not a giant fish species. You know, you are not going to get a 40-pound brook trout anywhere in Maryland. They typically inhabit our smaller stream systems. Although at times, before we had too many people in Maryland, they were in a lot of our larger river systems. The North Branch Potomac River, the Casselman River, the Gunpowder River would have been all but native brook fish, where these fish would have been out in the bigger systems. Instead, for the most part, other than in one spot, they are confined to small first order, second order, headwater tributary streams.

(Slide)

So why do we care about brook trout? Well, one, they are our native species. You know, we want to try and preserve our native species as much as we can. There is

recreational value to them. While not as probably popular as our put-and-take fisheries or some of our larger trout fisheries for rainbows and brown trout, there are a group of anglers and fishermen out there who like to fish for these guys. They are available.

They are an indicator species. If you have brook trout, you know that the conditions in that stream or that system are very good, kind of the canary in the coal mine. If the brook trout are there, good conditions. If you lose your brook trout, things are changing and not for the better.

Where you find brook trout, usually a very aesthetically pleasing area, you know, typically in your more remote areas and your mountainous areas, where there is less people. And you will see a theme, as I talk a little bit, brook trout and people don't go very well together, unfortunately, because we have a lot of people in Maryland.

And there is some economic value to them. There is no commercial fishery. There was way back when, about 200 years ago, there was some commercial fishing for them. They were netted and sold in local markets. That has been done away with for a long time. So no commercial value to them.

(Slide)

Like I was saying, they need cold water. You get over 70 degrees or so, you are not going to have brook trout anymore. They can't take warm water. Typically flowing

water. We don't have brook trout in any reservoirs or lakes or ponds that are of a natural system. There may be a few that sneak out into the lakes, out of the tributaries, and then head back in. Need clean water, need clean gravel. They cannot take sediment, which, again, you know, you get a lot of sediment, lot of people, lot of sediment; a lot of development, a lot of sediment; bad for them. SO they need good conditions and very clean conditions.

(Slide)

Nancy is going to talk a little bit about something called a Brook Trout Fisheries Management Plan. There have been fisheries management plans done for quite a few of the tidal species. This was the first freshwater species that we developed a management plan for. And it kind of came about because for a long time our brook trout have been the stepsister of trout management in Maryland. They were a small species. They were confined to certain areas. They were not as big as the fish that got stocked a lot of times that we could grow in some of our streams and reservoirs. So they kind of got forgotten.

But back in the early 2000s, about 10, 12 years ago, we started getting a little bit more aware of the value of these fisheries and starting to understand that we needed to protect them. And part of that was the national recognition for brook trout in their native range about how

much trouble these fish were in.

And we just kind of, you know, for years and years within Maryland we would go out and monitor them. And yes, they are still there. And we didn't pay a whole lot of attention to them. They were not real exciting at the time. But if you look at this map here, back in the mid 2000s, a group called the Eastern Brook Trout Joint Venture got formed. A bunch of biologists from all these states throughout the native range of brook trout, all the way from Maine down the Appalachian Mountains to Georgia, started realizing our brook trout are in trouble. They started thinking and noticing that there were not nearly as many brook trout. They were disappearing from habitats. And it was one of those things that just kind of happened. You know, people were not paying enough attention, I think, at times to see the scope of what was going on.

So you look at this map, and anything that is green is good. And any other color -- well, blue is -- blue and green are the two colors that you like to see. Any other color, gray, red, yellow, not very good. So that right there got everybody to realize we have a pretty dire thing going on with our brook trout.

So you look at Maryland, what was happening to Maryland over all this time. And here is our fall line. All this area here was where brook trout should be. That is our

historic range of brook trout.

(Slide)

And when we look close to see where our brook trout were left -- this was done back in 2006 -- you can see we don't have very much brook trout left. We have lost the vast majority of our brook trout. Gray areas, extirpated. Brook trout used to be there; no brook trout left there at all. Red areas, still brook trout in there, but at very reduced levels, no longer connected systems, isolated streams. Instead of being able to swim from one tributary to another, get out in the main river, they can't do that anymore. They are isolated. They are trapped.

You come out to Western Maryland, which historically people think of Western Maryland, the mountains, that's where the brook trout are. We only have one system out here left that is still what we consider intact, where the tributary streams still can be connected. The brook trout can swim from one stream, down through the main stem, and come up in another stream.

So that is all we have left from the perspective of an intact, high-quality, you know, good system. So brook trout in Maryland are in trouble. It is not a great picture.

(Slide)

Once we started looking at the situation in Maryland, we realized we need to do something. We got

involved in the Eastern Brook Trout Joint Venture. We developed this fisheries management plan. Because as we looked even further into it, we realized there are a lot of things we don't know about brook trout. They were not nearly as well studied in general, because they were just kind of the little stepsister that was out on its own, and nobody really paid any attention to them.

(Slide)

And so there was a lot of information needs that we didn't have for brook trout. So one of the things that was so nice about this fishery management plan development, it helped direct us to the areas where we needed to find information and led to a lot of research, which we got a lot of research done. We have just completed a five-year life history study. Ray and a bunch of the guys at the lab have helped with that research. We found all kinds of things we didn't know about brook trout.

People used to think, ah, brook trout, they live one to two years, maybe three years, if you are lucky. We found out they are living five years, six years, and maybe even longer than that at this point. It wasn't known. Well, that changed your management strategy. This is not a short-lived species that spawns once and it is gone. This species can spawn four or five times, some of these fish that contribute.

So that is one of the things that we got a lot of information from. We have a model that is being developed that will help us determine, you know, what the mortality rates are. And we can use that to try and predict effective mortality through angling or look at different regulation scenarios based on what the potential mortality might be. So that is some of the research that we are doing. That expanded into what Matt is going to talk about. He is going to talk about some telemetry work.

These fish are not necessarily just little headwater tributary fish, like people used to think. They move all over the place. And we are finding that they get bigger than people realize. So lots of different information coming out. The fishery management plan has been a big help in getting that directed.

So we started looking at all this stuff. We realized (technical difficulty) Savage River Watershed. If you are familiar with Western Maryland, it is out in Garrett County. It is a watershed above the Savage River, within the Savage River Watershed. And it still has the main stem Savage River that goes all the way up through the mountains up through there. And all these tributaries feed down into it. So here is the reservoir. Here are all the tributaries. Here is the main stem Savage.

This is a big system. There is about 120 miles,

give or take a few miles, depending on which map you are looking at and which GIS layer I guess you are looking at. but 120-some miles that are still connected, which means fish can go from mile one all the way down to mile 190, all (technical difficulty) an incredibly rare thing. Within the Mid-Atlantic it is probably the best example of a still connected brook trout fishery, so very unique. You know, we are looking at that and we are going, well, what's going on in here? How is it doing? (technical difficulty)

Ray, working with Dr. Bachman*, had done a study, paid some students and some research to go out and look at the status of the populations in a lot of these streams. We repeated some of that work in 2003, 2004. And what we found was not very encouraging. A lot of the numbers of fish that we had found initially had really declined dramatically. So we had had a big decline in the populations within that Savage Watershed.

And what that led us to (technical difficulty) and so you can see here, here is the general trend of all these different streams just heading down. These are a little bit small. It is hard to see, but the dark colors are (technical difficulty) are post. Some of these streams had lost 80 to 90 percent of their brook trout. They were way down.

Brook trout are notoriously an up and down fishery density. We will (technical difficulty) things like that,

but not to this extent. So we looked at this and realized we had a problem. So back in 2005 (technical difficulty) six week, we came up with a regulation proposal. We came and presented it to the Sport Fish Advisory Commission meeting (technical difficulty). And what we had come up with was that we knew there were (technical difficulty) we will get to that in a second, that there was problems with the habitat. Brook trout, again, brook trout and people (technical difficulty) together. You get too many people, you get too much disturbance, you start changing the conditions in the environment. The water warms up. We knew that was a problem. But we also suspected that there were some issues with (technical difficulty) from harvesting.

And the first thing we could do, especially in the Savage, which was one of the more popular (technical difficulty) at controlling some of the mortality that was associated with fishing. So we looked at (technical difficulty) we went to the Sport Fish Commission and we said we would like to put a regulation (technical difficulty) fishing to lowers only, no (technical difficulty) and do like a catch and release regulation in Upper Savage to try to protect (technical difficulty).

There was some controversy. It was not, you know, received well by everyone. There was some support for it. There was some opposition to it. So some of the things that

we heard (technical difficulty). And a lot of this was localized. A lot of the opposition came from locals. They had grown up there. This was in their backyard. You know, it is something they lived with. They felt (technical difficulty)

Again, a lot of people just said, well, they are just brook trout. There is no point in not harvesting them, because they are going to die after two or three years anyway. Well, that's not true, also. These fish can live five, six, seven years. And they can get a whole lot bigger than what we were seeing (technical difficulty)

A lot of people -- so the Upper Savage is so remote, there is nobody out there fishing. Well, that was the case probably 50, 60, 70, 80 years ago, but not anymore. There are -- there is nowhere in the Upper Savage (technical difficulty) we were hiking a mile and a half up into the middle of nowhere, where I wouldn't have thought anybody would have been fishing. There were fish with hooking injuries. People get there. There is ATV use up there. There is just nowhere left in Maryland that I can find that doesn't have access for people. We seem to get everywhere.

Some of the people were say we don't need larger fish in the population. They don't have any value. Well, yes, they do. They have a lot of value. They have recreational value. They are a desirable fish. They have

biological value. They can contribute possibly -- they produce more eggs for a larger fish. Their eggs on average are larger size. So they may have some more viability.

And one of the big arguments we got was what works in the Smoky Mountain National Park, you know, that should work here in Maryland. Well, it is not the same. There was some misunderstanding there. For one thing, there is no bait allowed in the Smoky Mountains either. And we didn't -- you know, they didn't seem to understand that position. But it is just a different system. And that is what is unique about the Upper Savage. The connectedness that we have in that system is just so unique from most other situations.

So again, why were the populations declining? The majority, a large portion, of the decline definitely related to habitat and how much things have changed within the watershed. But without a doubt, we saw some things, looking at the data from our own data and from our MBSS sentinel site data. When you look here at this graph here, on the left is -- let's see if I can read this from this far away. Difficult access is on the left. So the harder it is to get to a site to go fishing or to go sampling, that's on this side. This is where it is real easy to get to.

So the gist of this is, the take home from this is, if it is harder to get to a site, there are more fish. If it is easier to get to a site, there is less fish. So right

there, that tells us that angling and effort was having an impact on these fisheries. All throughout the Savage, when we broke this into these different categories, the same trend held true. The easy access sites had less fish. The harder to get to sites had more fish.

So right there we knew that angling and pressure, you know, it may be not just angling, it might just be, in addition to that, people being in the streams and disturbance. We are not sure of that. That is future research.

So we knew that there was something going on. There was something that we could at least try to impact and control, as we worked on these other issues, trying to develop watershed groups, trying to find ways to restore the habitat and protect the habitat. And, you know, while we are doing that, we could at least look at trying to control the angling aspect and see if we can get some improvements in the fishery.

We have other issues in the Upper Savage. We have water flow issues. You look at a long-term trend of here is our average water flow over a long-term data set. And here is the most recent water flow average. We have less water for some reason. It may just be, you know, a climate blip or there may be something else going on. Maybe we are losing groundwater. We don't have an answer to that, but we are

seeing a problem. So there are some issues with that, also.

So what we did was we went ahead. We proposed this regulation. We went through the public process, came to the Sport Fish Commission, presented our idea. And we ended up implementing this regulation. So there is no harvest of brook trout in the Upper Savage watershed. And it was artificial lure only, no bait. No restrictions on the type of artificial lures. It is not fly fishing only, just artificial lure. And we did that, of course, because the literature is outstandingly clear that bait fishing has a much higher potential for mortality than lure fishing. So we wanted to maximize the potential success of this regulation.

So we ended up with four objectives. And I will go through each one of those one at a time to let you know where we stand now, to give you an update on that.

(Slide) Our first objective, we wanted to try and restore the number of larger fish in the system for both biological and angling value. Now, we have been doing this since 2006. The regulation was implemented January 1, 2007. And so at this point, looking at the -- we have done sampling each year for I guess it is seven years straight now. Right now our adult population is greater than eight inches, which seems small, but for brook trout it isn't, are the highest since the 2009 monitoring year and trending upwards, though they are still below historic values.

This regulation has helped. We have had some increases, but we are still not anywhere near where we were, you know, 20, 30, 40 years ago. The good sign is we are trending upwards. We have had a nice steady trend. We have had a couple good year classes, which should help carry and may trigger hopefully a whole big boom in this population. That still remains to be seen. We will keep on tracking that. But it is positive at this point.

All the levels of angler access -- that is easy access, medium access, high access -- everywhere we went and looked at those were still all higher than at the -- the maximum length of brook trout collected in those areas was still all higher than what we were finding at the MBSS sentinel sites. Those are areas that are open to angling year around under two-fish-per-day harvest, no minimum size. So what that is telling us is that by protecting these fish, we are getting larger fish. We are increasing our maximum size.

A trend that we are still seeing -- and again, this is a future research project that we need to look further into. We still have more trout in our hard and medium access sites, even though the high or the easy access sites now are protected, also. Even though you can park right by the stream and go and fish right away, you are not allowed to harvest fish there, but it is still not recovering at the

level we would think. They are not showing the densities of fish that we see at our hard-to-get-to sites and our medium sites.

So something is going on still. And that makes us -- you know, we need to investigate further. Is it just the presence of anglers walking in the stream? You know, how sensitive are these fish at times?

MR. GRACIE: Or is it an illegal harvest --

MR. HEFT: And it could very --

MR. GRACIE: -- where it is easy to throw fish in a car?

MR. HEFT: It could be very well partly that. We do have coverage. NRP has done a good job. We have had some great coverage in the Upper Savage. They have been out there a lot. But it could very well be partly poaching, too. You know, we don't know that. But we do need to look at it.

We have talked with Ray. We have some ideas to get in there and do some studies on the effect of stepping on potentially reds and nests and see if that is having some issues.

Before the regulation, we were averaging about 4.9 adult trout per 75-meter section. I use 75 meter. That is our sampling lengths. That is our sampling lengths. We have these scattered throughout the Upper Savage system, where we go back and sample year after year.

Since the regulation, we are averaging six adult trout per 75-meter section. Now, that doesn't sound like a lot of trout, a little over one trout we have increased in a 75-meter section. Well, take that 75-meter section and extrapolate it over 100-plus miles of water. It is actually quite a few fish. We estimate upwards of 4,000 or more adult trout throughout that system. If you are an angler, that's a lot of fish. If you are a biologist, that is a lot more adult fish out there that can be spawning and growing.

So we are very pleased to see this. We have increased our numbers of adults. That's potential spawners. That's fish that can be caught, released, and caught again, too.

Looking at our maximum size for brook trout that were collected prior to the regulation, I have been doing this for pushing 20 years now. I rarely ever saw a brook trout pushing 12 inches in the Savage. We have collected them up to 14 inches now. And we have seen brook trout to 16 inches in the Savage River. So these are tremendously large brook trout for a small river system like this in the Mid-Atlantic. It is special, very, very special.

So there is an example of what makes the makes Upper Savage so special. I mean, that is a -- that's a 50-pound striper. That is the equivalent in brook trout. That's a 50-pound striper right there. That is a tremendous

fish. That is a wild, streambed fish that has been here -- you know, his ancestors have been here forever. That's -- people go into Maine to catch a fish like that. Well, they can come into Maryland and catch a fish like that now.

Again, just a little bit of a more explanation of how we think this regulation has done a very good job of helping with our objective. You know, here is our maximum brook trout length. You can see overall -- and again, there is lots of fluctuation in brook trout populations naturally. But overall, we are all tending upwards on our brook trout length.

Down here, this lower maximum length, sites open to fishing. So the comparison holds steady through here between closed fishery where you cannot harvest them and an open fishery where a harvest occurs.

MR. GRACIE: Where is the open fishery that that is based on?

MR. HEFT: Those are all MBSS sentinel sites, data from those, which has been collected year after year after year. So we have a nice data set through those MBSS sentinel sites. And they have two fish per day, no closed season, no regulations on the method you can use to collect them.

(Slide)

So our second objective, trying to restore overall trout population densities, not just getting more and bigger,

more and larger fish in the system, but trying to bring those population densities back up to where they were. Right now, we think that our populations have stabilized and are slowly trending upward, but not in every stream. There are still some problem streams out there that even with the regulation we have not had the recovery that we had hoped for. Overall, we are moving up, but not -- it is not a systemwide thing.

Again, we still remain high, higher than all the open fisheries. MBSS sentinel sites, some of the other fisheries that are open, open angling, our numbers are still higher than that. And so that is more evidence that the regulation is having some effect.

We suspect -- we had a great hatch in 2013. Brook trout populations throughout the range are very sensitive to environmental events. We had anchor ice all this winter, tremendous winter in Western Maryland. We were hopeful that we survived that and had a good hatch. As we were driving down here today through the rain and the predictions of three to five inches of rain, that is bad news for brook trout. Our fish have just hatched a few weeks ago. They are at a delicate state. One highwater event and you can lose your whole year class. So that is normal for brook trout. That is something they have to deal with.

But we had a good year class in 2013. If we can get a good class off this year, we are slowly starting to see

those numbers come through. And those fish will come through for three or four, hopefully five years, some of them. So we are optimistic that that is going to be a good thing.

Again, the high access sections are not recovering like the medium and low access sites. Don't know the reason for that. Typically, the high access are lower down on the watershed. That's your bigger water, more diverse habitat, more area for brook area to be found, and yet they are not recovering. Something is going on. We don't know what it is. But like I said, we do have some ideas for some future research to try and figure out what might be going on there.

(Slide)

And there is just a typical stream bucket. You can't see the fish in there, but it is full of fish, full of brook trout of varying sizes. I will have to get a picture of that for the future.

(Slide)

All right. Objective three. We wanted to reduce angler-related mortality, particularly of larger fish. One of the ways you can see that is you will see similar population characteristics between --- fish, easy access sites, and less remote areas. In other words, things will start to trend similar. And that is what we are hoping for, trying to get our high access and our low access to start showing that they are trending.

Density-wise, we are not really see that. But from a population structure, we are starting to see some of that. So that is a good sign, that the angler-related mortality is being reduced. We are getting larger fish all over the system. So, again, that is trending positive. We are hoping that continues.

Another thing that has been interesting is that over in West Virginia on a system called the Shavers Fork, which is only probably 60 miles away, maybe 70 miles away, very similar to the Savage, big main stem, lots of tributaries that feed into the main stem, historically, a famous fishery in West Virginia for large brook trout and lots of brook trout. They have been doing work there for about 15 years now. Todd Petty at West Virginia University, Todd is an ecologist. He comes at it from a different perspective than we do as fisheries managers and biologists. He is looking at the ecology of the system, trying to figure out, you know, what happens in this type of brook trout system. They have had some of the same problems. They have had environmental impacts. The main stem gets a little warmer than it used to. The fish cannot stay out there all the year, but they can use part of it.

But what his research has shown has been what he calls a push me-pull me type of effect. If you can increase the number of large fish that are going up in your tributary

streams and spawning, that then increases the number of small fish that end back out in the main stem. They grow fast. They get big and up they come again and spawn. If you can get that cycle going, you can get your densities back up.

I am hopeful that that is what we are trying to build up right now in the Upper Savage. If we build up these numbers of larger fish, hopefully we will be getting more fish returning to spawn. And we will get that push me-pull me type system going. And we will start to get our densities back up.

But it has been interesting that they are looking at it from a different effort than we did. They looked at it from a different perspective. But they found kind of the similar thing. And one thing Todd has been pushing in West Virginia is to adopt a similar regulation as we have, a catch and release regulation, to try and protect those fish.

(Slide)

And one of the things that the Eastern Brook Trout Joint Venture identified, and we looked at from a Maryland perspective, is trying to protect the best of the best. When you've got something really good, you want to make sure that you protect that one. Of all the systems in Maryland and all the areas in Maryland, this is the one that is our best and is the one most likely to be here for a lot longer time than some of the other ones that are facing a lot more nasty

stresses than the Savage is.

So we wanted to make sure that we were protecting the system the maximum amount we could. But we also wanted to make sure we were optimizing angling use. So we feel that at this point there is no doubt that our current regulation, the one we implemented in January 2007, has improved and better protected the populations in the Upper Savage than what we were doing prior, which was two fish per day and no limit on gear.

We also think that we have accomplished the goal of reducing angling mortality. And we have moderated some of the declines caused by natural environmental conditions. You know, as brook trout populations go up naturally, by keeping these larger brook trout out, by stopping (technical difficulty) they could be caught more and more. And even when your numbers of fish are down and your populations, the densities are low because of natural conditions, you have this nice number of adult trout out there that keep getting caught over and over. So your fishery, you are getting more out of your fishery by keeping these fish here than letting them be harvested. And again, that flies -- that goes hand in hand with the fact that these fish live a lot longer than people thought.

(Slide)

And again, since we have done this, we have had

lots and lots of letters and e-mails saying, you know, we love this fishery. People are very pleased with it. Not everybody. There are still people in the watershed who are not pleased with it. And they voice that to us. But overall, the amount of positives are really very substantial. So that is good stuff.

(Slide)

And there is just a picture of a very nice brook trout, just a beautiful fish. The colors are amazing. The life history is neat. And it is something very special we need to continue to protect.

So I think probably let Matt do his talk, and then we can take questions of both of us. That might be a little bit easier. Tom, is that --

MR. O'CONNELL: That's okay. That's all right, if you think it makes sense. Hold your questions then for now, you guys.

Brook Trout Research and Management

by Matthew Sell, MD DNR

MR. SELL: Okay. I am going to talk to you about just some fun old science. Sit back and enjoy.

(Slide)

Part of what Alan talked about with the Upper Savage River system, we started to do some more research into these fish, especially those larger fish that we alluded to

earlier. And the way we went about that was we did a telemetry study a couple years ago, looking at some short-term seasonal movement patterns of these guys. Because we had this fully interconnected system, these fish can move and out. We wanted to see what was going on there.

So just real quick, I will zip through these. We have gone over most of it. And for the sake of time -- I hope somebody has a shepherd's hook ready, because I do like to talk a lot. I apologize. I get excited.

(Slide)

That is the range of brook trout in the Eastern U.S. The arrow points to the Savage River watershed, give you an idea. We are kind of in the southern half of the watershed. So that makes that fully connected situation even more so unique, because the further south you go, the more isolated your populations get.

(Slide) There is the Savage watershed. You can see where we are at in Western Maryland. Taking a closer look, I talked about the special regulations. Everything you see in blue is catch and release, no kill, artificial lures only, with one notable exception. And that is the put and take management area on the Upper Savage River. It is about four-and-a-half miles. It gets stocked annually with 8,000 to 9,000 rainbows. It is open to five fish daily creel, which includes the harvest of brook trout. So we have all

this area that is protected, and this little area that isn't.

(Slide)

Now, what makes that kind of interesting is we knew a couple things, that there was this population of big fluvial fish that lived in the river. And the reason we knew this is because we started getting some angler reports from folks like you all saying not only are we catching brook trout in this put and take management area, but we are catching brook trout that are bigger than the stocked rainbows that you all are putting in for. So, guess what, we are taking these fish home instead of the rainbows, which was very contradictory to the protective regs throughout the rest of the watershed.

(Slide)

Additionally, when we did our summer surveys in the same sections of this river, the fish were not really showing up in the numbers that we were hearing about from anglers. So we assumed that they moved. And we hypothesized that that was probably linked to temperature, but we didn't know -- what we didn't know was where did they go and how far did they go and why did they go there. Like I say, we hypothesized it was probably a temperature-driven thing, but we weren't sure. So let's find out. Finally, we wanted to know if they came back.

(Slide)

So what we did, we caught and tagged 16 large adult brookies, 240 millimeters. You are looking at 9-and-a-half inches plus. The fish ranged from 9-and-three-quarter inches up to a little bit over 11. They were all caught hook and line, which is why our job is awesome. We actually -- we were very effective. I had a couple of really good trout anglers on staff, and we were able to catch the fish over the course of about three days in the field. So to get that size of fish not only speaks to their skill, not mine, but also to the number of these large fish that are around.

I went back out then and wore out a couple of pairs of hiking books, tracking these things. Thank god, we got an intern, a volunteer, to help out towards the latter half of the project, because my legs were about to fall off. And finally, whenever we found a fish, we just took general habitat, GPS coordinates, et cetera. We also collected -- I am zipping through this -- temperature data using hobo loggers. And there is a USGS gauging station on the main stem Savage to get at the temperature and flow questions.

(Slide)

So what we find, results, the fun stuff. Take a look. Temperatures got warm in the summer. These are maximum daily temperatures from the gauging station. And what we saw was that basically from early summer through early September, temperatures, maximum daily temperatures,

were consistently above 20C, which is above that upper temperature tolerance level for brookies.

(Slide)

Additionally, you can see, during this year anyhow, flows went to virtually nothing. And I think they recorded actually a zero once or twice on the gauge that year. So whenever I tracked all these fish, I found that yes, indeed, they were moving. They were leaving. They were getting out of the main stem. And what was kind of interesting is that they all went to one or two tributaries. If they moved out of the main stem, they went to one of these two places. And with a little bit farther investigation, looking at flows, these are two of only three tributaries that actually do remain connected in the Upper Savage during the summer months. Because of historical logging practices and all, the lower portions, you know, sometimes it is 50 meters, sometimes it is 500 meters. But the very bottoms of these tributary streams are completely subterranean flow for the very, very dry months of the summer, so effectively disconnected. Those two aren't.

(Slide)

Whenever we looked a little closer at the more detailed movement data, this line zero is basically where they were tagged. And these are kilometers upstream. All movements were upstream, by the way. And what we found was

that these fish were moving. They were moving long distances. Average upstream movement was right around six kilometers upstream. So you think of these little tiny brook trout, that doesn't sound like a lot to a striped bass moving from the Atlantic Ocean up the bay and into the Susquehanna. But for a brook trout in a small mountain watershed, moving six kilometers is -- that is a pretty big deal. We even had one fish that moved a little over 11 kilometers. So there are some movers and some shakers. Pretty cool stuff.

(Slide)

What we also saw, if we throw temperature data up there with it, is that right in here -- now, granted, I was doing all this tracking on my own. So it was hard to get a lot of day-by-day movement, because I just can't walk 120 miles of stream in a day, even though I tried. What we saw was, as temperatures started to warm up here early summer, fish started to disappear. So that supported the hypothesis that temperature is a driving factor.

A couple fish didn't move very far, just a couple of them. And those fish all maintained their position in a deep bedrock pool in the mainstem Savage, which I am hypothesizing is due to the fact that there was a groundwater influence there. And we had some thermal stratification in those deep pools. And that's why the brookies were able to hang on.

(Slide)

Okay. They stayed there all summer. I would backup, take that away, but I won't. They stayed there all summer. But what we weren't sure about was when were they coming back, were they coming back. And what we found out was these fish were actually staying and spawning in the tributaries. Temperatures got very nice for them here in mid September. None of the fish came back mid September. They all waited until after the spawn. I actually watched fish actively spawning, tagged fish actively spawning on reds in the tributaries. But once they finished, they were out of there. They were back.

And the cool thing is, and that is what that circle represents, site fidelity. These fish not only came back, but when they came back, they came back to the exact place that we caught them to tag them in the springtime. Oftentimes, of all these fish, eight of the ten of them that came back, 8 of the 10 were within 50 meters of where they were originally caught. And 7 of those 8 were literally in the exact same habitat, whether it was under a log, in a root wad, behind a boulder in a deep run, exactly where they came from. So they have their favorite La-Z-Boys, and they want to be there.

(Slide)

This is just an example fish that is kind of unique

in that tags are only supposed to last a year. But we got a little extra data on fish 51. This was a neat fish. We tagged him right at the mouth of Poplar in a nice pool. He spent the entire spring there. When things got warm in the early summer, he took off. He went upstream and moved into the mouth of the Little Savage River, which right at the mouth there, there is a blockage about -- I never measured it -- about four or five feet tall.

MR. : It is a five-foot waterfall.

MR. SELL: It is a pretty substantial effort to get up over it. And I kind of thought it may act as a blockage. And we had multiple tag fish actually go into there. So it wasn't. But he moved in about 50 meters, found a nice pool, and spent the summer there. I was tracking one day, a beautiful October day in the fall, found that fish actively working a red at the tail end of that pool. And I went back about a week later. I was in the same area, checked for him, gone. I should say her. This was probably a female. And lo and behold, until I got back to the main stem part of the river a couple weeks later, it had moved back. It was laying literally where I caught it. I remember catching that fish in the springtime. it was laying in the exact same feeding lane, which I thought was pretty neat.

But what was even more unique about this fish is, the following summer, last year, Alan, our summer intern, and

I were out doing our regular monitoring work. And it just so happens that summer habitat that he spent in the Little Savage, that's also in one of our monitoring stations. And we electrofished a fish that had no adipose fin. I clipped all the fins to get genetics information from these guys. And no adipose fin. Upon closer investigation, I saw faint remnants of a scar. And I sent the intern back in the next day. And lo and behold, he was able to get a signal from it. He had to be right on top of the fish. But it was 051. So that fish moved from the main stem to the Little Savage, spawned in the Little Savage, back to the exact same feeding lane in the main stem, and the next summer made the exact same movement to the exact same pool in the Little Savage. So they are doing this year after year. It seems to be a very directed movement. And like I say, they have their favorite La-Z-Boy, and that is where they want to be. So there is something about that spot that that fish likes. But this kind of gives me the impression that these fish are going to do this year after year, which makes maintaining and protecting that interconnected watershed concept all the more important.

(Slide)

So in summary, fish move very easily and freely into and out of protected areas. We do all this work to protect fish in the Upper Savage River watershed being our

stronghold for brookies. And the biggest, most highly fecund, most valuable to recreational anglers, because, let's be honest, we all like big fish, these fish are moving into and out of areas where they are protected and not. So that is a pretty important find.

It definitely seemed to be linked to increase in temperatures. Using tribs is thermal refuge during the summer months. Not only thermal refuge, but they also use these areas for spawning. So the tribs are important for spawning, as well.

And finally, the site fidelity with these guys is incredible. I mean, just seeing the movements that they are making, the distance that they are moving, and going to the exact same place is just -- it is awesome. That is why I love doing this stuff.

(Slide)

So finally, some future directions. Genetics, we have genetic samples from those tribs that remain connected plus the main stem. And right now Tim King is working with us at USGS. They are Lee Town. And he is doing the genotyping with these guys. So we are going to see are they discrete population? Do these fluvial fish only spawn with themselves or are they part of an overall metapopulation? And if they are, you know, these fish are going to contribute disproportionately more eggs, larger eggs. They could be the

drivers for the whole system that keeps the gene flow moving into and out of, so you don't get these very monotypic kind of populations genetically.

The understanding is we have to do a population census. We have to know how many of these big fish are in that main stem put and take. We don't really know. We tried it before. But thanks to spring rains like we are having now, it is hard to sample.

And finally, habitat protection enhancement. You know, anything we can do in the future to maintain or improve this connectivity is good.

(Slide)

So I am buzzing through this. That's that. That is the telemetry stuff. That is really cool stuff. This is cool, too, for the nerds in the room like myself. I say that because I am one. I was tasked with putting together a brook trout GIS-based database with a spatial component that we could basically act as a clearinghouse for all the brook trout data that I could find.

And it is fully functional at this point. Just a couple quick slides, some examples.

(Slide)

That's the coverage we have right now. And it is pretty good, as you can see. And basically right now it incorporates all of our fisheries data that I could get back

into the eighties. MBSS data from their inception to present, University of Maryland data, whatever projects they may have worked on, the trout crew, et cetera, et cetera. And I have a couple of small individual project data incorporated, as well.

And what I have done is I put this together, taken it out to regional offices. They all have it. And what they can do is they can now search brook trout data. They can see where they are, what densities they exist in. For sites that have been done year after year, they can look at population trends, number trends, things like that, easily exportable into Excel.

(Slide)

And just -- I threw up an example there. You can't see it on the screen. I apologize. But all those metrics are all the metrics that were measured in the field in that little white box. And all that information is now available with literally the click of a mouse to our regional offices. It has proven actually very valuable to environmental review.

(Slide)

A couple of examples. I show you the distribution map. This is a distribution map that I put together based on our most current brook trout presence/absence data. And you can see the fragmented nature of it all. But I was able to put that together using the GIS database.

(Slide)

Also, here is an example. I sent this out as part of our five-year sampling schedule that we are in. We are getting ready to start the next five-year sampling period this summer. And because I had this data from different organizations, I am able to look for places to consolidate and collaborate information with other groups, so that we, with our limited staff, can still accomplish a huge goal in sampling all these streams by looking at where MBSS is going to be, or if we can ask them to maybe add a site or two, if it is going to be brook trout staff with Alan and myself and our technician, or if it is going to be regional staff. So a great way to collaborate.

(Slide)

And finally, the future of this, it is a cool tool. That is Alan's first impression of it. So it is pretty neat, whenever you take it out. And guys that have never used GIS before, I mean, they are absolutely clueless with GIS. It is not their fault. They just were never trained on it. And I show them with a few clicks of a mouse how much utility this has, especially for things like environmental review. With a couple clicks of the mouse, they can get the information they need. It's like, wow, this is cool. But I need feedback. I need to know how to improve it. So it just needs to be implemented a little more regionally.

The data comes from a host of different places. And everybody out there does their own thing. Everybody collects their own metrics. Everybody does what they need to do for their project. So at this point I have to take all of those data points that you see, find some lowest common denominators, get something that is a little bit more user friendly. We need something that doesn't, whenever you click on information for a point, come up with literally a table with 100 metrics. That is not what it is meant for. And it is very difficult to use.

So that is probably the next biggest step, and then incorporate some more information. There is a collection permit database, I understand now, that is digital, where I could peruse all the stuff ---, if they were done for brook trout or not, and get a data point, maybe find some (technical difficulty)

It is a living document, so to speak. It is something that is going to continue to morph and evolve. And as I learn things, it is going to get better.

So with that, questions?

MR. GOLDSBOROUGH: Thank you (technical difficulty)

We will start with Jim.

MR. GRACIE: You guys caught up nicely.

On your database, is all of that data five years or less on the current listing? Because one of the problems we

had is you couldn't get back to all thee streams in a five-year period. So some of the data you had was eight, ten, eleven years old in terms of --

MR. SELL: Some of it is historical.

MR. GRACIE: Is it still? Okay.

MR. SELL: And what I have done, Jim, is I have based our next five-year sampling rotation on all of the historical data I could find. And it goes back as far into the eighties. And what is going to happen is we are going to do our best to sample every one of these streams in the next five-year rotation. And then in five years, I am going to update that range map. And I am going to know where they still are, where they are not. And then we can modify our next five-year period to reflect --

MR. GRACIE: I was looking at your Gunpowder watershed, which I happen to know very well. And some of that looks like it is more than 20-year-old data.

MR. SELL: Yes. Well, actually a lot of Gunpowder --

MR. GRACIE: And a lot of those places just don't have brookies anymore.

MR. SELL: A lot of the Gunpowder data came from the regional office there. And that was based on his most recent stuff. And a lot of it is newer than eighties.

MR. GRACIE: Okay.

MR. SELL: Some of it is a few years old, but it is not more than a decade old. But there is -- there has been a lot of change. And that is the area that I really expect --

MR. GRACIE: Yes. That's getting a lot of changes.

MR. SELL: I expect a lot of those watersheds, sub-watersheds, catchments, to maybe disappear, sadly.

MR. HEFT: We are optimistic that within the end of this five-year period we will know where brook trout are and are not.

MR. GRACIE: At the end of the next five years, you will be up to date on your --

MR. HEFT: I think we will be 100-percent sampled. We will know within a five-year range whether we have them or not.

MR. GRACIE: Well, we hope you are wrong in some instances, because we have some restoration efforts in mind for the Gunpowder watershed.

MR. HEFT: Well, I hope we can add some, yes.

MR. GRACIE: I will add as many catchments on there as what you all can help us with.

MR. GOLDSBOROUGH: Mack?

MR. WOMMACK: Yes. I noticed you kind of said your bigger trout were caught up in the northern parts, like Maine and areas like that. So I am kind of wondering like with global warming and the logging and the forests and things

like that, has a lot of research been done on the temperature stressing out the female trout laying eggs due to water temperature?

MR. HEFT: Well, they typically spawn in fall, October. So water temperatures even range wider are well below a maximum, you know, lethal limit. We know the limits. And there are predictions. Some of the modeling done right now being done at Penn State for Maryland suggest that from the Catoctins east it is going to be too warm for these things to even survive. And some of the models suggest the Catoctins are in bigger trouble in 100 years or so.

So yes, there is serious concern from the global warming climate perspective. There has also been work done in Virginia that just be reforesting and providing shade, you can mitigate maybe almost all of the climate warming that we are anticipating coming.

So there is hope. I mean, we may be losing these streams or they may be getting further stressed with climate warming, but there are things we can do to further shade them and protect the water that might completely mitigate that. So there's hope.

MR. GOLDSBOROUGH: Any other questions for Alan and Matt? Tom?

MR. O'CONNELL: Just a quick comment. Alan and Matt are a great example of the passion of our biologists

across the state. And there is a great opportunity every other week to listen firsthand to them on the Alan Ellis --- Radio Show. And all those shows are podcast, if we don't like waking up at 5:00, 6:00 in the morning.

But just to show how passionate Matt is -- what is the name of your daughter, Matt?

MR. SELL: Brooke.

(Laughter)

MR. O'CONNELL: Excellent.

MR. SELL: Yes. We were debating about names for the boys.

MR. O'CONNELL: Trout?

MR. SELL: Yes. Trout, River, something along those lines.

MR. GOLDSBOROUGH: So are you looking for feedback on some of those information sources? You had NGOs up there. Should some of our members be looking to --

MR. SELL: If any of you all have information regarding brook trout, whether a survey was done or if it is presence to absence, I am looking for anything. Because I want to have a solid feel for where they have been. So that in the next five-year period we can nail down for certain, based on all the available information, where they are, where they aren't. And then by the end of that five years, we are going to have a solid range map for Maryland. And it is

going to be current as of 2015.

MR. : I think it was FY86, the one that Steinfeld* finished up, had all the data of where they were at that time.

MR. SELL: Yes.

MR. HEFT: We may incorporate -- Nancy might touch on this. We are in the beginning stages of creating a web page for people so that they can go to a web page of Maryland DNR and talk about brook trout and read about brook trout and see the results of our surveys much easier. And that may be an opportunity where we can get anecdotal information from anglers who have finished somewhere and can provide us that information. We may not be able to include it in the range-wide data layer, but we can certainly create a new layer, if we need be. Anything we can get that provides information, we will be happy to see.

MR. GOLDSBOROUGH: Well, I would say this Commission stands willing to help as you develop that any way we can.

MR. HEFT: Great.

MR. GOLDSBOROUGH: Nancy?

Brook Trout FMP Review

by Nancy Butowski, MD DNR

MS. BUTOWSKI: So I am going to just take you through a brief overview of the draft Brook Trout Fishery

Management Plan review. And just before we start, if we can just -- I just want to go over the review schedule for 2014. You should have this as a handout in your packet. This is just telling you and giving you the opportunity to know what we are going to be reviewing this year.

We have already done striped bass, which was in January. We are doing brook trout right now. Blue crab has been rescheduled to October. But I wanted to point your attention to summer flounder and mackerel, because those reviews will be presented at the July meeting.

And if there are any requests for allocation changes, we would ask that you would give us that information by May 30. So just pay attention to those dates, if you want to provide any requests for allocation changes.

(Slide)

Most of you are familiar with this flowchart. You have seen it before when we have given a review, but just to remind you. Fishery management plans provide a framework for managing the resource, any resource. And there can be changes over time. So the whole purpose of doing a review is to make a recommendation as to whether or not that fishery management plan is still in an appropriate framework or whether there have been significant changes and that a complete revision or amendment is necessary.

(Slide)

So we put together a brook trout plan review team. And we went through and evaluated and looked at the goal, the objectives, management strategies and actions. And we put together the strat plan, and that is what you should have in your packet, as well.

And as part of the process, this is red run. Like right here, here is the draft status report. And we are giving you now the opportunity to provide input on what we have recommended and how the review has gone. So based on your input and review, it may result in any changes to the draft plan itself. And then we would have the opportunity to do an iterative approach, if significant changes have taken place. If not, then the review would go on to Tom as the director to okay it and go through the rest of the process.

(Slide)

So just as a reminder, the Maryland Brook Trout Management Plan was developed in 2006. And it was reviewed in (technical difficulty) strategies and actions, which are a lot to keep track of and try to implement. So during that time the review team said, well, I think to be better, you know, success at moving forward, that we should at least identify some priority actions. And just because they were identified does not mean that there wasn't significant work going on on the other actions, as well. But we wanted to have like a focus area.

(Slide)

And as a reminder, the goal of the Brook Trout Plan was to provide and restore and protect (technical difficulty) and to provide for recreational opportunities.

(Slide)

There were nine objectives that were developed to support this goal. And I just paraphrased them here. The first three or four have to do with collecting life history and biological information, going on to make some management measures to support a fishery and determine stakeholder preferences.

And then the last few were directed at habitat requirements and going out and making that information available to people, just governmental, non-governmental agencies (technical difficulty) for habitat within DNR.

So as a result of the review, the plan review team concluded that this goal and objectives are still appropriate for managing the brook trout resource.

(Slide)

You have heard a lot about the status of the stock. And I am just going to briefly go through some things that Alan and Matt have already talked about. But brook trout have declined over their entire native range mainly due to habitat issues and water quality issues. In the latest report from the Eastern Brook Trout Joint Venture, which was

reported in 2011, they estimate that in Maryland brook trout have been extirpated from about 62 percent of watersheds. And that in other areas, most of those populations have been greatly reduced. They use a metric of like occurrences less than 50 percent of the places were greatly reduced.

As you have heard about the Upper Savage River, that is our only intact area for brook trout in Maryland. And there are limited opportunities to really reestablish populations. I have only put two, actually four projects that went on that we have done since the plan was reviewed. I would recommend that you look at the table two. Within the report itself, there is over like 30 projects that have to do with research, reintroductions, and restoration projects that have happened since the plan was put into effect.

(Slide)

And here is not as nice a pictorial figure as the guys had, but again showing you the green is the Savage River area where we have the intact populations of brook trout. The yellow is somewhat reduced. The red areas are greatly reduced. And then the gray is extirpated.

(Slide)

So the status of the recreational fishery is largely uncertain because of the many different areas where they occur and different fragmented populations. As you have heard, the Savage River is the most important recreational

fishing area. And (technical difficulty) like numbers of fish and availability of larger fish.

There are other localized populations with varying degrees of fishing pressure. And it would take a long time to go through each single one of them. But based on our monitoring data, it looks like the fishing pressure that is happening in those area are okay from what we gather from the monitoring data.

We have a lack of directed recreational surveys. But as part of the brook trout management plan, we are pointed to increasing and expanding, getting some recreational data.

(Slide)

As I mentioned, during the 2010 review, there were five actions that were kind of set up as priority actions. These were the five. And you have heard mostly of the top three, information that both Alan and Matt presented. As you can see, significant progress has happened on those first three. A priority (technical difficulty) they are all interconnected, really, when you come down to what the actions are. And that information from the research that has been going on for life history is going to provide the information that is going to continue work through like modifying guidelines for restoration and developing outreach materials, so that we can protect habitat.

(Slide)

So as I mentioned, significant progress has been made on three of the five priority actions. There has been significant research and monitoring that has occurred since the plan was reviewed. And the team concluded that these actions and strategies are still appropriate and are a good way to continue to move forward with managing brook trout resource.

(Slide)

All right. So the team has come up with some draft recommendations. We want to continue to make progress on those priority actions that were set up in 2010 and to -- I added three additional strategies and actions just to focus on. Again, if you look at the actions in the management plan and on the implementation table, progress is being made on all of, or most all of, the actions. But these three will be the focused areas from 2014 to 2016.

When we were looking at assessing population, we realized that it would really be valuable to develop a population index and maybe do it on a regional basis. So that's two recommendations that the team has come up with to develop a population index over the next couple of years and to look at a regional approach. So Eastern and Central Maryland have different threats and different population status than, say, Western Maryland. And maybe you want to

make different monitoring recommendations and so forth.

As I mentioned already, we need to expand some creel surveys to get some of the recreational data that is lacking. And now that the major part of the life history research project has been completed, I think there will be more time and energy being able to focus and expand on some recreational surveys.

(Slide)

Certainly protecting and restoring brook trout habitat is a big issue. And we are hoping that the newly established habitat workgroup will be able to take on some of the issues that are going to come up for brook trout. One thing that we would also like to recommend is to actually take the FMP and incorporate it by reference into the regulation. Fisheries Service does have authority to regulate brook trout. And the plan was never incorporated by reference into (technical difficulty) on the list of fishery management plan development.

In 2010 there was new legislation that allows us not to have to go back to the legislature and ask them for additional species to be added to the list. So with the review and the recommendation that this plan still is an appropriate way to manage a resource, we feel that it is still appropriate to recommend incorporation by reference into the regs. And then the team actually asked to review

the plan again in 2016.

So that is just a brief overview of what happened with the plan review team and the recommendations that Fisheries Service plan review team came up with.

MR. GRACIE: I have a quick question, Bill.

MR. GOLDSBOROUGH: Yes.

MR. GRACIE: Established pathways to inform about brook trout conservation and protection, what all does that mean?

MS. BUTOWSKI: Well, there are many --

MR. GRACIE: Is it an outreach program or public education campaign or just what is it?

MS. BUTOWSKI: Not only for like outreach and public campaign, but also to make sure that the information that we have gets out to governmental agencies to --

MR. GRACIE: Environmental review?

MS. BUTOWSKI: Environmental review to make sure we are coordinated within DNR.

MR. GRACIE: Oh, okay. All right. So in a broad sense.

MS. BUTOWSKI: Yes. And we are looking to establish a brook trout website or a website that is --

MR. GRACIE: I can assure you that the habitat workgroup will have voices in favor of some of this.

MS. BUTOWSKI: Good. Any other questions?

MR. GOLDSBOROUGH: Any other questions for Nancy?

MS. BUTOWSKI: I think a two-week review period would be appropriate, so we can get comments back to -- I think if we have them sent through Tom by May 15, that would probably be good. And then we will go from there.

MR. GOLDSBOROUGH: Everybody got that?

All right. Thanks, Nancy.

MS. BUTOWSKI: You're welcome.

MR. GOLDSBOROUGH: Tom, I guess you are up.

ASMFC Spring Meeting Agenda Review

by Tom O'Connell, MD DNR

MR. O'CONNELL: So we are a little behind, but I think we have some opportunity to catch up here. So Atlantic States Marine Fisheries commission is meeting during the week of May 12. You guys received a link to the agenda that is on the ASMFC website. Just a few highlights.

American eel, this is largely a commercial issue. But the board will be considering a draft addendum to go out for public review that could propose reductions to the yellow and glass eel fisheries for Maryland. Yellow eel is a big thing. We have the largest harvest along the Atlantic coast.

There are going to be two workshops that, if you have the time, you may be interested in attending. The first workshop is related to the Magnuson Stevens Act for reauthorization. It is a great opportunity to learn about

the act. There is input being collected amongst AFSMC to weigh in that reauthorization process.

And secondly, there is going to be a workshop on the Marine Recreational Information Program, MRIP, the survey that estimates recreational effort and harvest. If you are not aware, you know, National Marine Fisheries Service has been conducting this survey since its initiation. And the survey consists of a phone survey. Some of you may have gotten a phone call to try to get at your actual how many days you are fishing.

And then there is a field component where they contract creel clerks to go to the docks. NMFS is transitioning to no longer be the lead in contracting the creel clerks and transferring that responsibility to the states along with funding. And they believe that the states are better equipped, given their relationships with the fishermen, to be at the docks to interview. So it is a workshop to learn how this is going to work. Some states have already gone down this road. Other states have not. And the states are in a position to begin putting together their scopes of work and budget proposals to implement this program by 2016.

Striped bass, that is going to be a big one for us. The stock assessment came out last fall. The board has agreed to proceed with an addendum to go out for public

review to, one, adopt the (technical difficulty) fishing mortality. And the board also tasked the technical committee to develop bay-specific reference points so that there would be a reference point specific to the Chesapeake Bay and a reference point specific to the coastal migratory population.

The technical committee has been having some challenges in developing that reference point within the time period. But there is another call this Thursday. And I am optimistic that they will provide some options for the management board.

So there are still a lot of moving pieces. The board is going to be looking at a draft addendum to adopt the reference points, whether they are one coast-wide reference point or two, a coastal and a bay, and then look at management options to bring the fishery to the target level. And that will include management strategies. So the board is going to be having a very important meeting. It is about a four-and-a-half-hour scheduled meeting that day. So it is a great opportunity to attend. It is local, in Alexandria. And we will go from there.

And at that point then there will be public meetings, if the board does advance an addendum to have discussions over the reference points and management strategies that the jurisdictions will have to consider implementing.

So expect a lot of focus on striped bass this summer.

One other issue, the Advisory Panel and Law Enforcement Committee was tasked with -- and I am going to ask Ed O'Brien, who serves on the advisory panel -- Dave Sikorski does as well. I don't think Dave was available for the conference call that day. But the board tasked the advisory panel to provide input on a request to consider allowing catch and release striped bass fishing in the exclusion economic zone, the federal waters --- miles.

And so, Ed, if you want to maybe just provide an overview of the advisory panel's thoughts on that?

MR. O'BRIEN: Okay, Tom. First of all, there were 18 different commissioners represented, 18 different advisors, excuse me. And as Dave knows, that's a lot. So there was a lot of interest in it. And the discussion got pretty lively. But nobody came out as proponent for this. Virginia and North Carolina joined everybody else in voting against opening up the EEZ for catch and release striped bass fishing.

Now, the gentleman who handles striped, he was very reluctant to take a vote. He was very reluctant to even express an opinion, which was unanimous. So we didn't really understand that. And we ended up getting an e-mail out that said that the group unanimously opposed catch and release in

the EEZ.

The discussion expanded away from the subject. And I th ought we should get back to the subject or pretty much we had covered the subject. But the technical committee guy and the striped bass guy from ASMFC wanted to give the advisors their feelings about how concerned they were about the stock. I thought it was a little bit -- I didn't think it was that necessary at that time, but they did that. And they were alluding to information that had come out very recently, since the last meeting, whatever it would be. I am sure you are going to be on top of that.

So that's about the way it went.

MR. O'CONNELL: All right. Well, thanks, Ed. I appreciate the time taken.

I do want to let you know that when I went down and met with the coastal recreational fishermen, they were actually interested, obviously, in opening the catch and release fishery just so those of you that represent those constituents. But I think in the end that, you know, recognizing that the Commission is looking at potential reductions, it is not the time to consider expanding upward in the EEZ. There is mortality associated with catch and release.

Lastly, menhaden. We are going to be hearing how the state's performance with implementing last year's

management program was and whether or not adaptive management is warranted at this time or not. And Lynn and Bill and Russell --- right on top of that. So it will be an important meeting for us, as well.

With that, if there are any questions or input or if you want to follow up with me afterwards --

MR. GOLDSBOROUGH: We still have one other quick item.

Any other questions for Tom?

(No response.)

MR. GOLDSBOROUGH: Okay. Let's move along then real quick and get the Estuarine and Marine Division update.

Is Brenda here? Oh, Lynn.

Estuarine & Marine Division Updates

by Lynn Fegley, MD DNR

MS. FEGLEY: Okay. I think there were just two items on there. The first one was a blue crab fishery update. And that was really a placeholder in the event that we had released our annual dredge survey results. And we are still finalizing that. We suspect -- we expect that that release will happen this week. So it is not quite there yet. So we will just move by that. But like I said, we expect to have that release coming out this week. That is our hope.

The next one I am almost giddy to report to you that after being mired for two years in the state procurement

process we have an RFP on the street to get a vendor to build a new state-of-the-art electronic reporting system for our commercial fisheries that will include for selected fisheries the capability for hails. And this is basically what the blue crab fleet has been working on as a pilot. We are hoping that it will be very similar, if not right in line, with what the blue crab system looks like. It is a competitive bid.

I have a link. And I actually got -- if anyone is interested, the RFP is available on eMaryland Marketplace. So if you go to emaryland.buyspeed.com, that brings you to the open bids. And if you -- there is a drop-down. And if you go to computers, software, supplies and services and hit the search, you will see our number is M, as in Mary, D as in dog, U1031013748. And I realized today that --

MR. O'CONNELL: Lynn, we can include it in the meeting notes.

MS. FEGLEY: Sorry. Too much information.

MR. O'CONNELL: Everyone memorize it?

MS. FEGLEY: It has been that kind of day. It has been that kind of month, actually.

But the bids closed May 5. And I realize today -- and, Rachel, I don't know, I know I sent you the link. Could you succeed in seeing the actual proposal?

MS. DEAN: The current bid at the time. I guess

that was a week, maybe two weeks ago. You say it is still open?

MS. FEGLEY: It is still open. We extended it to May 5. So the bid closes May 5. We will get our proposals in. And that is really the -- that's it. It is very exciting.

MR. GOLDSBOROUGH: Any questions for Lynn?

(No response.)

MR. GOLDSBOROUGH: Cool. And very efficient. Thank you, Lynn.

And finally, we have Don, who is going to compress 15 minutes into 2 minutes.

Inland Division Update:

Potomac River Tidal Bass Fishery

by Don Cosden, MD DNR

MR. COSDEN: Okay. I just have two items. These don't require any action, but I wanted to update the commissioners. And I figure that we will probably be discussing these again in July when there might be time to ask for advice at that point.

The first one has to do with the large mouth bass fishery on the Tidal Potomac. We have had some discussions about this already this year, as Roger knows. Over the last two seasons in particular, DNR's fall electrofishing surveys have shown to the lowest density CPUE, catch per hour, of the

time series. And in fact, those CPUEs are below the reference points in our tidal bass FMP.

Those reference points are actually the 25th percentile of the whole time series for CPUEs. And our FMP states that we will consider a suite of options, if we, in this case, go below those reference points, which might include reg changes, greater habitat protection, manipulation, or stocking, or a number of other things.

Not only have our surveys indicated perhaps some downward trend in the fishery, but last year in particular we had numerous complaints about the fishing, 2013. With the exception of the spring, which appeared to be pretty decent fishing, once we got into June, things started going downhill. Some anglers -- we had numerous calls, e-mails. Some anglers said that they would fish elsewhere until the fishery improved. And that lasted right through the end of the fishing season last year.

Yet we have an average annual catch per angler hour that we get from tournament fishing, because that is the easiest place and the most complete place we can gather data, which shows that the fishing was not so bad last year. It is kind of interesting. It appears that there was a wide range of results. There some really good days and then there were some really lousy days. But overall, I think everyone agreed that the fishing was down through the largest part of the

2013 season.

So this whole situation has led us to take a closer look at this fishery and our data. In fact, we presented some analysis at our bass roundtable meeting. The bass roundtable meeting is an annual meeting we hold. And we invite most of the really avid bass fishermen to participate. It is really open to the public. We invite guides, a lot of tournament fishermen. And typically it is focused on these tidal bass fisheries, which are our largest large mouth fisheries.

What we presented there indicated that perhaps we had seen some elevated fishing mortality back for the years 2006, 2009, that probably stem from just a lot of participation in the fishery. That was a period of really high tournament activity and we believe also just general fishing activity for large mouth on the Tidal Potomac..

But probably our leading hypothesis from all the analysis we did indicates that perhaps the loss of SAV on the Potomac may be what is driving this. The grasses were doing pretty good until 2011, when Tropical Storm Lee hit. And since then, the abundance of grasses in that tidal fresh zone has gone way down. And what grasses have remained have been really heavy hydrilla beds, which tend to be perhaps not as productive for larger fish, certainly not as productive for anglers trying to catch fish, and even can affect our own

sampling, as well.

So where we stand right now, we are looking really closely at this upcoming 2014 season. We agreed that we were going to enhance, we were going to do some extra survey work, as well. And in fact, our southern region team and tidal bass specialists were recently out on the Potomac. And they did some spring survey work that repeated methods that were used by our biologists back in the eighties. Typically, we don't survey in the spring. And we have changed our protocols for sampling. So we have a difficult time comparing to those older results. But we actually repeated the sampling procedures at six different sites. And just two weeks ago, we had very encouraging results.

Actually, the indices that we got were slightly higher than historical average between 1987 and 1990, which was a period of relative abundance for bass. Statistically, there was no difference there.

However, there is still public concern about what is going on and why the fishing was so bad. And certainly one influential guide in particular has been pretty critical of our management and has stated that the population, he believes, has collapsed and that we should take some immediate action. So what our plan is, is to continue to watch what is going on with the fishery, monitor tournament catches. Of course, we will be doing our regular fall

sampling.

We are going to -- we are putting together some outreach that sort of addresses a number of the points that Captain Penrod made and what the data say about that and just in order to allay people's fears of where we are right now. But I figure we will have that out possibly in a couple of weeks. We will distribute that to the commissioners before it goes public, so you have an idea of what it is we are saying. You can ask some questions about it, in case you get questions.

But we also have to start, because of the timing of regulatory and scoping process, we have to, if we are going to consider regulation for next year, we have to start preparing that for scoping now. So come July, we will be bringing some potential regulation changes and some reasoning why we think these particular regs might be appropriate. But we would prefer to really wait until the fall survey and we have seen how this whole season progresses to determine whether we think we need to go forward with those.

And I will leave that right there. We will talk about it in July.

MR. O'CONNELL: Thank you, Don.

Just one quick comment. Don mentioned that Mr. Ken Penrod has been very critical of our program and very critical of our lead staff person. I just want to let all

you know that we continue to extend an invitation and encourage him to participate in our annual bass roundtable. And I have extended a personal invitation to meet with him to talk about his concerns, and he has denied to date. So I just want to let you know, if you see these e-mails, we are continuing to reach out to him, to offer an opportunity to discuss it. But he has denied to date.

MR. COSDEN: Yes. And our outreach is not to just poke at a hornet's nest here, but to actually perhaps provide some information for Ken, who hasn't really been willing to listen to us. Maybe that will get the conversation started.

MR. GOLDSBOROUGH: Any questions for Don? Roger?

MR. COSDEN: Any questions on that? Yes?

MR. TRAGESER: I just wanted to add a couple things because we have certainly had an opportunity to get a lot of additional information one on one with you and Dr. Love. Snakeheads, we have talked about the impact of, and definitely there has been an impact with the snakeheads in that particular fishery.

When you talk about how the Potomac has sort of realized a downturn in the number of fish being caught, whereas the upper bay area in the flats has certainly remained very productive. And one of the biggest differences between the two is the Potomac has a lot of snakeheads, and there aren't really any snakeheads in the upper bay. That is

not to say -- we have had some feedback from some of our members who have said that, well, it doesn't mean that the snakeheads are necessarily going in and devastating the bass population. But what has been historic means or places where we have gone and caught bass before, maybe they have positioned and changed their positions a little bit, staying away from areas that are inhabited by snakeheads, one out into a little deeper water, places that our guys just haven't, as of right now, been accustomed to catching these fish at certain times.

So it might not be that anglers have to adjust their means and methods by which they are catching fish, if the bass have actually repositioned themselves. If you are just gaining a lot of your information off of tournaments, and the catch rates are down, I don't think that necessarily mean that all those fish have gone. They may have just become a little more difficult to catch.

But we are keeping our eyes on it. I mean, we have talked about creel limits and size limits. Now, it has been brought to our attention, so we are going to work with you every step of the way on that.

MR. COSDEN: Sure. That's good observation. And it is not, in the Potomac, it is not just snakeheads, but it is blue catfish --

MR. TRAGESER: Blue catfish, yes.

MR. COSDEN: -- which are even more abundant than snakeheads. And when you remove grass from the system, you potentially put the small fish, small bass, more at risk of predation. Certainly the literature says they do better when they have grass.

So there are a lot of -- we have a number of different hypotheses. And as we collect more data, perhaps we can narrow it down a little bit more. Of course, there is not -- we are taking all the actions we can take right now to deal with snakeheads and blue cats, which are telling people: Go catch them. Eat them. Pull them out of the river. So you cannot always deal with your problems directly.

MR. GOLDSBOROUGH: All right. Then Don, are you going to just touch on the trout tournament issue that Micah brought up earlier just briefly?

MR. COSDEN: Yes. I think John Page has a question.

MR. WILLIAMS: If I may, Don, how much of a field do you have in different parts of the Potomac's tidal bass fishery? Do you see any trends moving around? What I am particularly thinking about, given the threats of Mattawoman Creek right now, do you see any trends? Can you do microtrends and focus on smaller areas like Mattawoman? Do you have a sense of what is going on in there?

MR. COSDEN: We don't have a sense of what is going

on specifically from creek to creek. The study randomly chooses up and down the river and in the tributaries. And it would be difficult for us to say. And particularly in Mattawoman, where you do have a high amount of fish being released every year for tournaments. It might mask some changes that might occur in the river, because bass would appear to be abundant during our survey work.

MR. WILLIAMS: That is going to be an area that I think the habitat workgroup is going to focus on.

MR. COSDEN: Well, that is obviously an important area for bass and bass fishing.

MR. WILLIAMS: Thanks.

MS. McGINTY: Can I just add to that?

MR. GOLDSBOROUGH: Sure, Margot.

Mr. McGINTY: (Away from microphone.) We have done some work in the SAV beds in Mattawoman Creek and shown that they are not as suitable habitat as we would expect for fish. And in our annual report that we are just finishing up, we are actually showing that there is a potential to have ammonia toxicity in those beds, as well. So, you know, we saw low DO, and now we are seeing ammonia toxicity, which is not good for any fish.

And there is EPA criteria. And our calculations show that in some of these cases the ammonia is above that criteria level, which would cause fish ---. So, you know, it

is a Mattawoman -- there is a Mattawoman habitat issue. And I will stop there. We can talk a little bit about Charles County, if you want to, but --

MR. GOLDSBOROUGH: All right. Thank you.

Any other questions for Don?

(No response.)

MR. GOLDSBOROUGH: Thank you, Don.

MR. COSDEN: All right. Well, moving along, there is a question about a potential trout tournament on the Gunpowder River. And in fact, the organizers of this event, we got word after the fact, actually, that they had attempted to hold a tournament earlier this year on the Gunpowder, but did not have any participation other than, I think, two members that were organizing the event.

We met with those fellows and Maryland Park Service just about a week ago up on the site. They are requesting that they be able to hold another tournament. This is on May 24. And it would be n the vicinity of York Road on the Gunpowder. It is a relatively small event. They would have 14 contestants. And at any one time 7 of those people would be fishing. The other -- they basically buddy up. One person handles the measuring board and whatnot while the other guy is fishing, and then they switch.

But one of the organizers offered to provide me with this information. And I just got this the other day. I

apologize for not getting it out to the Commission sooner.

If we can move forward, can you --

MR. GOLDSBOROUGH: Hey, Don.

MR. COSDEN: Yes?

MR. GOLDSBOROUGH: Just to do a time check, because we are already 15 minutes over, and whether or not we have the time to go through this wholly or are we going to summarize and follow up with --

MR. COSDEN: We can go through it pretty quick. It is really just a couple of slides. And since it is coming up --

MR. GOLDSBOROUGH: With the pleasure of the Commission.

MR. COSDEN: It is up to you guys. I can talk outside of the --

MR. GOLDSBOROUGH: Folks, so we are over time now. We had two items we wanted to come back to. And I think Jim might have had another item. On those two items, I definitely want to touch on them at least quickly for now, and see where we go with them. And Jim, how about yours?

MR. GRACIE: Mine relates to this. I was going to ask you to set up a workgroup with the Commission to start looking at tournaments and how to get the Fisheries Service involved in regulating it.

MR. GOLDSBOROUGH: So what is the sense of the

Commission at this point? It could be that such a workgroup would start with this presentation, working with Don. Does that make sense or do you want to go through it quickly right now?

MR. O'CONNELL: I think it makes sense.

MR. GRACIE: Either way, I am happy to be part of the workgroup whether I see this or not. I have talked to Don about this. Micah has some things to say about it, too. We are all concerned. I mean, this is in type one wild lands where commercial activity is restricted, first of all. It is a catch and release fishery.

You guys don't have any regulatory -- we went through this discussion in the past over bass. And we kind of passed on it. And I think it is time we are going to have to bite the bullet. But I do think we need some thoughtful discussion of that before we come back to the Commission to make a recommendation. That is why I said I think a workgroup would be a good idea.

MR. GOLDSBOROUGH: Micah, how are you with doing that?

MR. DAMMEYER: Yes, I would love to be a part of that. A workgroup, yes.

MR. GOLDSBOROUGH: Okay. Since you brought it up, do you mind if we defer on the presentation for now and go that route?

MR. DAMMEYER: Sure. Yes. I am sure Don would --

MR. COSDEN: What I could do, I will just check with Jason, the fellow that sent me this. I am sure he would be fine with me sending it to you. I will e-mail you. This has some information about how they set it up and everything, which --

MR. GRACIE: If he is not, we have plans for May 14 --

MR. COSDEN: They have plans for May 14.

MR. GRACIE: I mean the 24th.

MR. COSDEN: I mean 24th. Yes.

MR. GRACIE: We were going to get about 100 people fishing in that reach before they show up.

MR. : Go tubing. We will go tubing down the creek.

MR. O'CONNELL: Hey, Jim and Micah, so apparently Don said there is a tournament planned, requested for May 24?

MR. GRACIE: No. They are scheduling. They need a permit from the park. That's all they need.

MR. O'CONNELL: Okay. You guys want to meet before that, in case you want us to advise the park?

MR. GRACIE: No, I don't think we are going to stop this year's tournament. I don't think we need to move that fast. I think we need to be thoughtful about this.

MR. GOLDSBOROUGH: All right. Sounds good.

Okay. So if we establish a workgroup, we know we have two members. Anybody else care to step up and be part of this?

MR. GRACIE: I would sure hope somebody interesting in bass fishing would, Roger. I mean, we have to deal with it.

MR. GOLDSBOROUGH: This is an inland issue only. Right? From a regulatory standpoint?

MR. GRACIE: No, absolutely not.

MR. GOLDSBOROUGH: Oh, not? Okay.

MR. COSDEN: Well, I don't know. It depends on how you want to handle it. I mean, this is a larger issue.

MR. GRACIE: Well, I think the workgroup ought to look at the whole picture.

MR. GOLDSBOROUGH: Including tidal water. Okay. Dave? All right. We have Dave.

MR. : Don get seasick. He wants to stay in the trout water.

MR. COSDEN: Yes. I live in Shadyside. I know a little bit.

MR. GOLDSBOROUGH: Okay. We have Jim and Micah and Roger and Dave. Anybody else interested?

MR. : I feel good about that group. I like that.

MR. GOLDSBOROUGH: All right. Good.

MR. LANGLEY: Do we have any idea when they meet, Bill?

MR. GRACIE: Soon.

MR. LANGLEY: We do them later.

MR. GOLDSBOROUGH: Okay. We will have to explore dates through e-mail, I think, at this point, if you all are good with that. Okay?

MR. : Do you want to head that group?

MR. DAMMEYER: Sure.

MR. GOLDSBOROUGH: Let the record reflect Micah is going to chair that workgroup.

Thank you, Micah.

MR. DAMMEYER: All right.

MR. GOLDSBOROUGH: Okay. So we had two other items. Jim, did -- I mean, Ed -- I'm sorry -- did you have something? You had your hand --

MR. O'BRIEN: Yes. Of all the entities involved in Maryland, the striped bass, I think it would be most appropriate if maybe you and Jim got together and come up with some kind of a resolution honoring Dr. Torrey Brown and all that he did for the striped fishery.

MR. GOLDSBOROUGH: So I suppose everybody saw the news about Dr. Torrey Brown's passing on Easter Sunday. And for those of you who may not know, he was Secretary of the Department until, what, late nineties, I guess, or mid

nineties.

MR. GRACIE: For 12 years.

MR. GOLDSBOROUGH: For 12 years, including when the striped bass moratorium was put in place. He made the very difficult decision and took a lot of heat for that and shepherded through the whole recovery period. There was a lot that went on then. And then bringing the fishery back in starting in 1990. And we had a lot of interaction, some of us did, during that period. And Torrey was the head of all that.

So I hear your point, Ed. That's a really good one. Does anybody want to add to that?

(No response.)

MR. GOLDSBOROUGH: Okay. Then Jim and I will -- and I would like to ask Dave to join as vice chairman, if that is okay. The three of us will get together and try and put together a resolution for the Commission for Dr. Brown. He was a giant.

DR. MORGAN: Can that resolution then be passed on up to the General Assembly for next year for recognition? You know, they do resolutions all the time.

MR. GRACIE: Yes. In case you don't know it, the Governor put the flags at half mast for two days, too, for Torrey's passing, Friday and Saturday.

MR. GOLDSBOROUGH: He really is the end of an era.

And we can suggest other things in addition, perhaps. We will talk. Thank you, Ed, for that. That is very good.

Okay. So we had talked earlier about -- and I am sorry to hold everybody over just a couple minutes -- the Charles County septic tier public hearing that is coming up, you got information about that. We had said maybe we wanted to discuss a little bit more action. There is not much time right now. Does anybody have anything they want to throw out on that? That is coming up before the next meeting, obviously.

(No response.)

MR. GOLDSBOROUGH: I guess the question is would the Commission as a whole want to take some specific action beyond just getting the information out to members and constituencies and urging them, as the Department did already in an e-mail, to let their voices be known on this issue, which, as we have heard most recently, Margot's comment about ammonia, is very important to fish habitat in that neck of the woods. And I think it is a potential example for lots of other places on precedent.

MR. GRACIE: It would be uncharted ground for the Commission. You know that.

MR. GOLDSBOROUGH: It what?

MR. GRACIE: It would be uncharted ground for the Commission. The Commission has never weighed in on a local

land use issue before.

MR. GOLDSBOROUGH: Well, that is one possibility of what I am alluding to. But it could take a lot of forms. I don't know. I just want to throw it out. Okay. Maybe we need more time to discuss it before doing anything like that.

MR. GRACIE: I don't know that we have time. That is the issue.

MR. GOLDSBOROUGH: Yes. Okay. So keep in mind to try and spread the word on that, perhaps urge some of your constituents, especially any in Southern Maryland, to be aware of that.

Jim?

MR. GRACIE: Well, let me just try. I make a motion that the Commission draft and send a statement over your signature, talking about the importance of fish habitat and how it relates to the tier two designation.

MR. GOLDSBOROUGH: Thank you for that.

Is there a second? Phil?

MR. LANGLEY: I would second that.

MR. GOLDSBOROUGH: Appreciate that.

Any discussion on that?

(No response.)

MR. GOLDSBOROUGH: Do I see any disagreement?

(No response.)

MR. GOLDSBOROUGH: Motion passes without objection.

Thank you, Jim. We will do that. Hopefully we have time.

And the other item before I let you go is Ken Hastings had written the Department back in January, like I said, and you all have gotten a copy of that a few weeks back, about striped bass allocation. It was originally in the context of the FMP review that we covered in the last meeting. Or was it two meetings ago? There was to be two meetings ago. That was the last meeting. And the Department recently sent a response. That was sent around you, too, as well. I asked you in a subsequent e-mail what your thoughts were. I heard from five, I think, of you, four of which were saying didn't think we needed any further discussion right; basically agree with the Department's response. But there was at least one person who wanted to discuss it. That person ended up not being able to make it. That was Dave Smith. He told us he was going to be late. I guess something came up.

So obviously Dave is not here, and we don't have time anyway. But what is the sense of the Commission about how we should deal with this from here on? Any comments?

(No response.)

MR. GOLDSBOROUGH: Well, it is hard without Dave here to hear his thoughts on it. But I am sure he is interested in being able to comment on it at least.

MR. GRACIE: Well, I think the Department has asked

for input on allocation of striped bass in the development of a position now anyway. So I am not sure that there is a reason we shouldn't be prepared to discuss this at the next meeting.

MR. GOLDSBOROUGH: Well, striped bass in one form or another will certainly be on the agenda at the next meeting. Okay. Well, then --

MR. GRACIE: Was it Dave or Vince, too, or just Dave.

MR. GOLDSBOROUGH: Well, it was Dave. He was coming as Vince's proxy to this meeting. Dave had e-mailed me that he wanted to discuss it. And he thought it was important in the context of the ASMFC action that is pending.

So anybody object to putting it on the agenda for the next meeting, which will be in July?

(No response.)

MR. GOLDSBOROUGH: Okay. We will.

MR. TUMA: Is that scheduled for a nice rainy day when I don't have a charter?

MR. GOLDSBOROUGH: We will try and schedule the weather for you, Frank.

All right. Thank you, everybody.

(Whereupon, the meeting adjourned at 5:35 p.m.)