

U.S. DEPARTMENT OF COMMERCE

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NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

MARINE FISHERIES ADVISORY COMMITTEE

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PUBLIC MEETING

+ + + + +

WEDNESDAY  
NOVEMBER 29, 2017

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The Advisory Committee met in the Sheraton Silver Spring Hotel, Magnolia Room, 8777 Georgia Avenue, Silver Spring, Maryland, at 8:30 a.m., Terri Lei Beideman, Chair, presiding.

MEMBERS PRESENT

TERRI LEI BEIDEMAN, Chair; CEO, Vast Array Corporation

ERIKA FELLER, MAFAC Vice Chair; Director, Marine and Coastal Conservation, National Fish and Wildlife Foundation

BOB BEAL, Executive Director, Atlantic States Fisheries Commission (ex officio)

SEBASTIAN BELLE, Executive Director, Maine Aquaculture Association

ROGER BERKOWITZ, President and CEO, Legal Sea Foods, LLC

JULIE BONNEY, Executive Director, Alaska Groundfish Data Bank, Inc.

RICHEN (DICK) M. BRAME, Atlantic States Fisheries Director, Coastal Conservation

Association

COLUMBUS HALL BROWN, SR., U.S. Fish and Wildlife  
Service (ret.)  
DAVID DONALDSON, Executive Director, Gulf States  
Fisheries Commission (ex officio)  
RAIMUNDO ESPINOZA, Environmental Consultant  
RANDY FISHER, Executive Director, Pacific States  
Fisheries Commission (ex officio)  
ROBERT GILL, Co-owner, Shrimp Landing  
ELIZABETH (LIZ) HAMILTON, Executive Director,  
Northwest Sportfishing Industry  
Association  
PETER MOORE, Fisheries and Community Development  
Consultant  
MIKE OKONIEWSKI, Pacific Seafood Group  
HARLON PEARCE, Owner/Operator, Harlon's LA Fish  
LLC  
ROBERT RHEAULT, Executive Director, East Coast  
Shellfish Growers Association  
PAMELA YOCHER, Senior Research Scientist and  
Executive Vice President, Hubbs Sea World  
Research Institute

NOAA STAFF PRESENT

JENNIFER LUKENS, Designated Federal Official;  
Director, Office of Policy  
CHRIS OLIVER, Assistant Administrator for  
Fisheries  
LAUREL BRYANT, Chief of External Affairs  
KATHERINE CHENEY, Public Affairs Specialist,  
West Coast Region  
PAUL DOREMUS, Deputy Assistant Administrator for  
Operations  
HEIDI LOVETT, Assistant Designated Federal  
Official; Policy Analyst, Office of Policy  
MICHAEL RUBINO, PhD, Director, Office of  
Aquaculture  
FRANCISCO (CISCO) WERNER, PhD, Director,  
Scientific Programs and Chief Scientific  
Advisor

**ALSO PRESENT****DAVID BARD, Office of Science and Technology****JOSHUA BLOCKSTEIN****RICH CODY, ECS Federal LLC; MRIP Program  
Management Team Member, Office of Science  
and Technology****RUSS DUNN, Senior Advisor on Recreational  
Fisheries****ROGER GRIFFIS, Climate Coordinator****TOPHER HOLMES, Office of Legislative Affairs****STEPHANIE HUNT, Office of Sustainable Fisheries****LAURA KEELING****BECKY LIZAMA, Office of Legislative Affairs****JUSTIN LOCKE****JENNIE LYONS, Office of Public Affairs****STUART MERRILL, Acting Chief Financial Officer  
and Director of Fisheries' Office of  
Management and Budget****KATE NAUGHTEN, Director, Office of Public  
Affairs****ALAN RISENHOOVER, Director, Office of  
Sustainable Fisheries****TIM SARTWELL**

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1 P-R-O-C-E-E-D-I-N-G-S

2 (8:37 a.m.)

3 CHAIR BEIDEMAN: I'm going to turn it  
4 over to Jennifer in a moment, but I wanted to  
5 bring up that the subcommittee is going to be  
6 working on the reports for resilience during  
7 lunch.

8 We thought we could take those 90  
9 minutes instead of -- you know, if we need more  
10 time later, then we can still do that. But if  
11 people have an interest in things that belong in  
12 that Task 6 document or in the summary and you  
13 have an interest, we're going to start with Task  
14 6 document and go through it, get it done.

15 But there's lunch places you can grab  
16 lunch, and we can come back here. Heidi's  
17 volunteered to sacrifice her lunchtime to help us  
18 with the editing and maybe can get some progress  
19 done so we won't keep having that dangle over our  
20 heads. So that's the plan for during our lunch  
21 break. And now I'll hand it over to Julie.

22 MS. LUKENS: Jennifer.

1 CHAIR BEIDEMAN: Jennifer.

2 MS. LUKENS: Good morning, everyone.

3 I just wanted to run through, we've had a little  
4 -- the Beltway is our major transportation  
5 thoroughfare around DC here, and one of the major  
6 bridges was shut down this morning, and Brian  
7 Pawlak is on the other side of that bridge, as is  
8 Bob Beal.

9 So we have had to do a little  
10 rejiggering of our schedule so I'll just run  
11 through what we're going to do this morning just  
12 for you all for situational awareness and then I  
13 will introduce Cisco.

14 We'll be starting with Dr. Cisco  
15 Werner, who will be giving our Science Enterprise  
16 update from now until about 9:30. Then we will  
17 be having our Fisheries budget outlook and  
18 administrative update. That will not be Brian  
19 Pawlak. It will be his normal deputy.

20 As you know, Brian is acting in Paul's  
21 position. And Brian's deputy, who is the acting  
22 CFO right now, Stu Merrill, will be arriving here

1       shortly to give his presentation for him.

2                       Then we will have a break and then we  
3 will hear from Alan Risenhoover and then the  
4 state directors will be presenting and hopefully  
5 Bob will be here by that time. So that is the  
6 sequence of events for this morning before we  
7 break for lunch.

8                       Does anyone have questions before we  
9 get into -- all right. Then we will jump right  
10 into -- we're happy to have Dr. Cisco Werner here  
11 this morning to give you an update on the Science  
12 Enterprise.

13                      Many of you have met him before. He  
14 was the chief science advisor for fisheries. He  
15 came and spoke to MAFAC and was at our March  
16 meeting. And we're really pleased that he was  
17 able to come today and speak to you about several  
18 topics that I know members of MAFAC have  
19 expressed an interest in.

20                      So with that, I will turn this over to  
21 Cisco. Cisco, are you -- we're going to mic you  
22 up so you're ready to go.

1 DR. WERNER: Okay, good morning.  
2 Heidi, is this working right? Okay. All right.  
3 Good morning, good to see everybody and to have a  
4 chance to meet new people as well.

5 As Jennifer said, I'm Cisco Werner.  
6 I've been here now for almost a year, and it's a  
7 pleasure to talk to you guys again. I think last  
8 time was in Boston in March or so.

9 And what I'll do is I'll give you an  
10 update on some aspects of our Science Enterprise  
11 and in particular, we received a request, I  
12 guess, to talk about three things, and I'll focus  
13 on those, but then we can open up to talk more  
14 generally about other things.

15 And the presentation, I'll be giving  
16 it, but really I received a lot of help from  
17 Brett Alger, who is our ET FTE or electronic  
18 technology person in the Office of Science and  
19 Technology; Doug Lipton, who is our senior  
20 scientist for ecosystems -- I'm sorry, for  
21 economics; Jason Link, who is the senior  
22 scientist for ecosystems; and Mark Strom, who is



1 the deputy director at the Northwest Center.

2 So the three topics are there, and  
3 they each helped me on that. I'll talk a little  
4 bit about what the new FTE for Electronic  
5 Technologies and Monitoring is doing and just an  
6 update on where we are on that.

7 I'll talk a little bit about  
8 priorities on EBFM, so ecosystem-based fishery  
9 management and resilience, and I'll talk about  
10 sort of socioecological looks at that. And also  
11 an update on the Northwest buoy for monitoring  
12 harmful algal blooms.

13 But I'll talk a little bit more than  
14 just that, you know, in terms of where those  
15 technologies are and perhaps also a look into new  
16 promising approaches that involve genomic and  
17 molecular approaches that I think we can build on  
18 and we are building on, and we'll see how far we  
19 can go with that in the next five years or so.

20 So on the electronic technologies  
21 update, again, Brett provided this description  
22 and I hope I don't butcher it. Anyway, it's

1 starting from the Electronic Technology Policy  
2 Directive in 2013.

3 That policy provides guidance for  
4 fishery-dependent data collection, you know; that  
5 includes the VMS, the vessel monitoring systems;  
6 electronic monitoring; electronic reporting.

7 And the objectives are, of course you  
8 know, from the policy are to encourage the  
9 adoption of these electronic technologies,  
10 complement and coordinate among existing programs  
11 looking for cost-effective and sustainable ways  
12 forward, align across the various sectors and  
13 data needs funding, regulations, and of course,  
14 coordinate across agencies and industry costs.

15 And in 2014, Greg Lapointe was  
16 contracted, and since then George moved on. Now  
17 we have Brett Alger, and I'll talk a little bit  
18 more about him in a second.

19 So things that are involved in the  
20 electronic technologies coordination are matters  
21 associated with budget, so develop NMFS  
22 priorities for internal funding.

1 I think what Brett told me is it's  
2 roughly about a \$7 million budget and  
3 coordinating with NFWF it's a part of that.  
4 Somewhere around, I think last year it was around  
5 \$3 million. I'm not sure what's it's going to be  
6 this year in terms of coordination with NFWF on  
7 external grants.

8 There's support for regional  
9 electronic technologies efforts. This is of  
10 course working with all the FINs and such in  
11 terms of developing implementation plans and  
12 promoting data integration across the regions, so  
13 the Fishery Independent Network, or the Fishery  
14 Information Network, sorry.

15 You know, the coordination also  
16 involves the Electronic Technologies working  
17 group where of course, you know, there's -- let  
18 me just make sure I get right what he wanted me  
19 to highlight. Just sent this to me last night,  
20 and I'm spacing out here.

21 So yes, it's taking the emerging  
22 technologies and working with the various groups,

1 such as councils and such, to understand how that  
2 coordination happens. And also, you know, as  
3 part of his job is to inform NMFS leadership on  
4 these ET programs.

5 We have monthly meetings where Brett  
6 provides us updates in terms of where the ET  
7 programs are. And then there is the external  
8 communication or the external engagement that  
9 involves speaking to councils, NGOs, fishing  
10 groups and so on, as well as develop, you know,  
11 broader meetings and workshops.

12 So far it's been a very active effort  
13 by Brett. I think he's really good. And just a  
14 little bit about him. You know, he was hired in  
15 July of 2017. He has his degrees from Central  
16 Michigan and Michigan State.

17 He worked prior to NOAA with U.S. Fish  
18 and Wildlife and also with the Michigan  
19 Department of Natural Resources and then also  
20 with GARFO. And so his background really comes  
21 in, you know, in terms of understanding  
22 management issues and how to, you know, fold

1 those into the questions that we have in terms of  
2 the technologies and how to do that.

3 So he's got both working now with the  
4 Office of Science and Technology and also having  
5 worked with GARFO, he brings in a really nice  
6 bridge between the two.

7 In terms of the priorities that he  
8 has, of course you know, it's developing the  
9 monitoring policies, which you know, have to do  
10 with the industry and NMFS program cost  
11 allocations, the video review and storage, this  
12 is a big issue, and data confidentiality.

13 The video issue is big because, first,  
14 it's just the size and the magnitude of the data  
15 that's being collected, the cost it would take to  
16 analyze it all and how to be systematic about how  
17 one approaches this massive amount of  
18 information. As well as respecting the  
19 confidentiality of the data that's being  
20 collected.

21 And so this is something that he's  
22 spending a fair bit of time on to try to move

1 forward in this area of the video and the video  
2 storage and the confidentiality.

3 We're working on data modernization  
4 strategies. And of course, I think many of you  
5 are familiar with the Net Gains document that  
6 talks about, you know, how do we modernize the  
7 data collection, including coordinations with  
8 federal and state partners and working towards  
9 integration of data.

10 And again going back to my earlier  
11 point about how to deal with those massive  
12 amounts of data and how do you analyze it. It's  
13 looking at both hardware and software solutions  
14 and to keep with the latest technical standards.

15 He's looking at renewing the  
16 implementation plans for 2018, so we're updating  
17 from 2015. Again, there's a lot that's happened  
18 since then, including updates on program costs  
19 and budgets and also the idea of prioritizing the  
20 data integration efforts across regions.

21 And so it's a fair bit of work. This  
22 is just sort of a summary of where Brett is. As

1       you saw, he just joined last year, but he's hit  
2       the ground running on a whole host of things.  
3       And I know he's getting around out in the field  
4       and such. You might have had a chance to meet  
5       him. Otherwise, he's probably going to be  
6       knocking on your door at some point.

7                 Should I just go through the  
8       presentation or should I take questions now  
9       before I move to the next -- yes?

10                MEMBER BONNEY: No, I was just  
11       wondering if you were going to switch topics.

12                DR. WERNER: I was so I'll stop here?  
13       Okay. All right.

14                MEMBER BONNEY: If it's okay. I do  
15       have a question about your electronic monitoring  
16       policies, and I know that there's been some  
17       issues in the North Pacific. I was looking at  
18       our agenda, and they talk about the draft EM  
19       policy directive. Has that been completed,  
20       because it says tentative on the group, or on our  
21       agenda?

22                I noticed your first block here, which

1 is typically we do things on a regional level  
2 versus the top-down directive, and so I'm just  
3 wondering how, you know, every region is  
4 developing their own electronic monitoring for --  
5 it is for us anyway, and it's somewhat unique.

6 And so how you balance each region's  
7 kind of set of priorities and goals versus an  
8 overarching policy from the top down? I didn't  
9 know if that has been completed, or if you're  
10 taking comments on those or what.

11 DR. WERNER: Okay. I'm looking to see  
12 if I see somebody who might be able to -- is Alan  
13 here? He ran out. He was. Jennifer, would you  
14 happen to know where the policy stands at this  
15 point?

16 MS. LUKENS: Well, I was just sitting  
17 here looking at our policy directive system  
18 trying to look up and see where it is, but I'm  
19 pretty confident that we do have a policy in  
20 place at the national level on this, but let me  
21 go ahead and look and see -- we do have one.  
22 Heidi's nodding her head. Yes.



1 DR. WERNER: So Alan, the question had  
2 to do with the electronic monitoring policy and  
3 national versus regional, you know, levels or  
4 states of the policies. And so there is a policy  
5 that has been reviewed or is being reviewed and I  
6 just don't know if you have an update on where  
7 that might be.

8 MR. RISENHOOVER: Yes, real quick.  
9 The policy is still not finalized, but what we're  
10 trying to do is have a framework for national  
11 levels. So it should be the same in each region.  
12 So who pays for what part of what should be  
13 generally the same in each region. Do I need to  
14 --

15 MS. LUKENS: It would be better if you  
16 come up to a mic.

17 MR. RISENHOOVER: So, yes, we have a  
18 national policy we're working on trying to have  
19 some similarities across all regions typically  
20 with things like who pays for what part of an  
21 electronic technology.

22 But then also, as Cisco has here, the

1 regional technology implementation plans have  
2 much more of a regional basis. So we're trying  
3 to do both, not mandate everything has to be the  
4 same from a national level but certain things  
5 hopefully, and then at the regional level allow  
6 for that variability like we do with a number of  
7 other things.

8 CHAIR BEIDEMAN: Yes.

9 MEMBER ESPINOZA: Thank you, Madam  
10 Chair. Thank you, Cisco. I have a question  
11 specifically for the U.S. Caribbean and how the  
12 prioritization of data integration efforts and  
13 how that affects each region.

14 Pretty much in the U.S. Caribbean  
15 besides the three or four Longliners that come  
16 down, it's all artisanal fishing. The size of  
17 the boats are pretty small. So we would really  
18 like to see how that would fit into the type of  
19 fishing that occurs in the U.S. Caribbean.

20 We're just getting started off with  
21 electronic logbooks. So electronic monitoring is  
22 something that hasn't even been on the radar for

1 us. And when it's ever been brought up, it's  
2 something that is so beyond what we think is  
3 possible.

4 We know it's possible because we've  
5 seen this done in other places with the same size  
6 boats elsewhere in Latin America, but we want to  
7 see how what you're saying that certain things  
8 are going to be at a national level and how that  
9 would impact the U.S. Caribbean given that the  
10 fishing that occurs there is very different than  
11 the majority of the industrialized fishing that  
12 occurs in the U.S.

13 MR. RISENHOOVER: Yes. And I think  
14 Cisco on his slide here shows some of the  
15 individual ways that it works in the Caribbean or  
16 elsewhere is how it works.

17 But when it comes to, say, on video  
18 review and storage, we need to have a policy on  
19 who does that video review, whether it's the  
20 industry, whether it's the agency, who pays for  
21 it, how long do you store that video, in what  
22 format, and what uses can it have.

1                   But, yes, we would really like the  
2 technologies to develop to be applicable in the  
3 regions so they work.

4                   DR. WERNER: Yes, please?

5                   MEMBER ESPINOZA: So I mean is that  
6 something that for the U.S. Caribbean it is going  
7 to be applied, something that video monitoring is  
8 going to be required in the Caribbean?

9                   So I mean, because that's my --

10                  MR. RISENHOOVER: Right. That would  
11 be up to the Caribbean Council and the industry.

12                  MEMBER ESPINOZA: Okay.

13                  MR. RISENHOOVER: You know, the  
14 stakeholders there. Is there an application that  
15 works? Is it cost-effective? Is it something  
16 the fishermen would use? And does it provide the  
17 data we need?

18                  But we're not going to mandate, okay,  
19 we're going to put a video camera on every boat  
20 across the country.

21                  MEMBER BONNEY: And just to follow up  
22 on this, I know that I've seen some bill language

1 that was promoted at one of the Magnuson  
2 hearings, Congress dictating how long the video  
3 storage would be.

4 I think it was advanced out of the  
5 Alaska Longline for one and a half years. And I  
6 think the Pacific Council had some kind of  
7 language, it's three years' storage.

8 So it just seems that if you're going  
9 to set a national policy, you need to kind of  
10 think about what all the different regions are,  
11 because it may be too late.

12 Another issue from our perspective is,  
13 they're doing a sampling of the video. So they  
14 decide what trips are going to be reviewed before  
15 the fisherman goes.

16 And it's kind of trying to balance the  
17 human side versus the EM side so they're similar,  
18 because they don't want everybody to opt into  
19 humans. They want them to use both technologies.

20 So one of the proposed national level  
21 was that basically you would record all the trips  
22 and then you'd post a sample versus pre. So I

1 think from a regional level council-wise, there's  
2 going to be a lot of interest in whatever's going  
3 to come out of headquarters.

4 So I would hope that there's a lot of  
5 ability to have an interaction and try to take in  
6 each region's differences versus having something  
7 come in late and then having everybody having to  
8 adjust underneath whatever that policy is.

9 So I don't know when that's going to  
10 be available. I think Randy probably has some  
11 comments too.

12 DR. WERNER: Yes, I was going to have  
13 a comment, but Randy --

14 MEMBER FISHER: Yes, we were back  
15 about two weeks ago and met with Chris and Sam  
16 and everybody, because we've been doing this for  
17 four years now in terms of reviewing stuff.

18 And if you look at the cost of  
19 storage, it's a big deal. It's about \$370,000 a  
20 year for us if we were to store everything. So  
21 Brett was going to meet with the archive people  
22 to try and determine how long they wanted to keep

1 it.

2 According to Sam, it was three years.  
3 We haven't seen anything. The cops wanted it for  
4 five years. So there's not a real, I don't think  
5 there's been a final decision made until maybe  
6 Brett found out from the archive people.

7 The issue is who has the data.

8 According to Sam, if we get it and we are  
9 contracted by National Marine Fisheries Service,  
10 then it becomes a federal document, and you have  
11 to follow all the rules that the archive people  
12 and everybody else wants. So that's the issue.

13 So if there's a way around that, what  
14 we've been talking about is having a third party  
15 do the review or audit, that kind of thing.

16 The way the Canadians do it is -- the  
17 legal document, in terms of us, is the captain's  
18 logbook, and same in Canada. So what they do is  
19 they will randomly pick ten percent of the tows,  
20 compare it to the logbook.

21 If they're the same, then everything's  
22 fine. If there's any difference, then the

1 fisherman pays for a hundred percent review of  
2 everything, and then they give that to the  
3 enforcement people. So that's a fairly good  
4 model.

5 Each of the councils will have to  
6 decide what they want to do. We're reviewing a  
7 hundred percent of all the video currently, and  
8 the daily charge to the fisherman if we were to  
9 charge the fisherman, if it's like a whiting  
10 fisherman, it's about \$12 a day, which is  
11 nothing. If it's a troll boat, it's about \$150,  
12 because they have to separate everything, and we  
13 have to look in much more detail. So that's kind  
14 of the range that we're in right now.

15 So those things have still got to be  
16 decided. And the issue is who gets the data and  
17 if you guys touch it, then they have to follow a  
18 whole bunch of different regulations. So that's  
19 the box we're in.

20 MR. RISENHOOVER: Yes. Just to put a  
21 little bit more of a point on what Randy said  
22 there, a lot of is, you know, there's federal



1 requirements.

2           So if the industry collects the raw  
3 data, and the agency only requests from the  
4 industry summary-level data, then only that  
5 summary-level data would be subject to these  
6 various veins -- depending on the authority, it's  
7 three years, five years, or forever.

8           And we'd like to avoid that, because  
9 having video of water going by for forever just  
10 doesn't make sense.

11           DR. WERNER: And I think the  
12 difference in one, three, five might have to do  
13 whether it's for fishery purposes versus  
14 enforcement purposes and so on. And the  
15 ownership of that then opens up all these storage  
16 and requirement issues.

17           So it's something that we are working  
18 on and try to sort out so that there is a  
19 national-level statement recognizing, like Alan  
20 said, that it will vary by region and sector.  
21 Yes, Erika and then Mike. Oh, sorry, I shouldn't  
22 be doing this. Apologies, yes, sorry.

1                   VICE CHAIR FELLER: Thanks, Cisco.  
2           First of all, I wanted to say that Brett's been a  
3           pleasure to work with so I think he was a great  
4           choice. He's doing a really good job.

5                   Just a question, I think this might  
6           come up on one of these that you have up there,  
7           but one of the things that I've been seeing and  
8           I've been hearing a lot about is the choice  
9           between or the agency's preference for  
10          proprietary versus open-source.

11                  The existing policy, I think,  
12          expresses a preference for open-source software  
13          for implementing electronic technology,  
14          electronic reporting. But just from my  
15          perspective, I understand the preference for  
16          open-source, but I'm also seeing a lot of stuff  
17          that we get in and also in the regions the choice  
18          to use proprietary software systems, and I think  
19          that there are really good reasons why people are  
20          making those choices.

21                  And I'm kind of curious like how --  
22          are you guys going to be revisiting that part of

1 the existing policy? Because I think to actually  
2 implement that is probably going to take a little  
3 bit more than just expressing a preference.

4 DR. WERNER: So you're talking about  
5 the software, not the data itself? So you're  
6 talking about open-source software --

7 VICE CHAIR FELLER: Right. For like  
8 video review and for data management and all that  
9 kind of stuff.

10 DR. WERNER: I don't know if there's  
11 a preference yet on one versus the other. I  
12 think you said you had a preference for the  
13 proprietary one?

14 VICE CHAIR FELLER: No, I don't.

15 DR. WERNER: Oh, you don't? Okay.

16 VICE CHAIR FELLER: I mean, I have a  
17 preference, but I don't think that's really  
18 material. I think the existing NMFS policy, the  
19 one that Jen referred to, prefers open-source,  
20 and that has kind of been what the agency has  
21 said is a preference for open-source.

22 But I'm sort of seeing in

1 implementation, it's kind of going down the  
2 middle, and people are making choices of open-  
3 source or proprietary software systems for really  
4 good reasons.

5 But I just kind of think that that's  
6 an aspect of the existing policy that's really  
7 important going forward, and it's probably not --

8 DR. WERNER: I'm going to guess and  
9 say that we haven't decided yet in terms of which  
10 way we're going. The good thing is that Brett  
11 sits in the Office of Science and Technology,  
12 which also hosts a lot of the data management  
13 efforts that are going on.

14 And so I think that that conversation  
15 is happening by virtue of them being sort of in  
16 the same room. But I think it's also part of  
17 what we're trying to do. And I'm not sure if,  
18 Jennifer, you have anything on the policy of open  
19 versus proprietary software?

20 MS. LUKENS: Yes, you're actually  
21 correct, Erika, that one of the -- in the  
22 objectives is asking, we encourage the use of

1 open-source code or standards that facilitate  
2 data integration and offer long-term cost savings  
3 rather than becoming dependent on proprietary  
4 software.

5 Now this policy was issued back in  
6 2013 and renewed in August of 2014. So that's  
7 some time since that period. I know that we're  
8 working with the regional, looking at the  
9 regional plans.

10 We also are undergoing a process of  
11 reviewing all of our policies in the policy  
12 directive system. So that's one of the things  
13 that could be considered in this ongoing dialogue  
14 here.

15 All of our policies are up for  
16 reevaluation and looking at them as things change  
17 in dynamics. So it could be that was done for IT  
18 considerations or for fiscal considerations, I'm  
19 not the expert on that area, but certainly  
20 policies are up for being reevaluated with a need  
21 or a change.

22 DR. WERNER: Mike?

1                   MEMBER OKONIEWSKI: I have attempted  
2 to stay as far away from EM as I can in our  
3 region without total success. But, I guess the  
4 one thing that's come up in several conversations  
5 not just from our regional folks but also from  
6 outside is the Freedom of Information Act and  
7 what exactly goes to the open domain as far as  
8 public display.

9                   Because once you do get the stuff out  
10 there, it can be edited for certain effects and  
11 what-not. So it has been a concern. I haven't  
12 heard that much concern voiced about it, but I  
13 have heard some, and I'm just curious what  
14 protections, if any, we have.

15                   If the stuff is stored, is it open for  
16 public review later at some point or how does  
17 that work?

18                   MR. RISENHOOVER: Yes, I'll start and  
19 maybe Cisco can add some more. But, all the  
20 confidentiality protections of the Magnuson Act  
21 would apply. So, you know, you do a paper  
22 logbook, that's protected. It can only be

1 aggregated at certain levels or groups. So this  
2 same protection would be provided.

3 You've got the extra kind of  
4 cybersecurity that we'd need to make sure that,  
5 you know, the servers and everything are secure,  
6 but generally I don't think it would be open to  
7 FOIA except at an aggregated level.

8 MEMBER BONNEY: Just to be clear then,  
9 so there's already a policy in place based on  
10 what Jennifer just read, and we've reviewed it.  
11 But then you're basically suggesting that we're  
12 developing a new policy then or we're reviewing  
13 the old policy based on your first section on the  
14 slide?

15 So I'm just trying to figure out if  
16 we're doing something new or we're just revising  
17 what we already have.

18 MR. RISENHOOVER: Yes --

19 MS. LUKENS: Well, I -- go ahead.

20 MR. RISENHOOVER: I think it's  
21 expanding on what we already have, because over  
22 time these other issues have come up. The

1 question of who pays for review, who pays for the  
2 camera, who pays for storage, which early on as  
3 programs were just coming up in different places,  
4 those may have been handled slightly differently.  
5 We want to try and standardize some of those so  
6 it's fair and equitable around the country.

7 MEMBER BONNEY: So just to follow up  
8 on that. Process-wise, once the policy is  
9 revised, then it would go out for public comment  
10 and then different regions and CCC and everyone  
11 would be able to have input into the revisions?

12 DR. WERNER: Through the councils,  
13 yes, it would go out that way.

14 MR. RISENHOOVER: Yes, I'm not sure if  
15 it would be a formal commenting period like, you  
16 know, Federal Register, or more of just releasing  
17 it to groups to have a look at.

18 Because some of this is going to be  
19 legal-driven, and we may not have a choice, some  
20 will be policy-driven, and we may have some  
21 choices there.

22 DR. WERNER: If I may just add, so the



1 comment from Brett on this was that these new  
2 revisions or these new directives having to do  
3 with the cost allocations and such that Alan was  
4 referring to would be going through the councils  
5 for comment before they went out. So that aspect  
6 of it, the intention is that they go to the  
7 councils. Yes?

8 MEMBER FISHER: So we've been involved  
9 -- the reason why I came back and met with Chris  
10 and Sam was that it is an issue of who pays for  
11 what, and that's what this thing is coming down  
12 to.

13 On the West Coast, if we do camera  
14 review, we can review all of the data from the  
15 fleet that we have, it would cost about \$200,000  
16 a year. That's what it would cost us.

17 So our argument has been, why don't  
18 you give us \$200,000 as part of PacFIN or  
19 whatever and we'll review this thing. The  
20 question then is when we go back to how long do  
21 you store it, who has to store it and all that  
22 kind of stuff, the issue is that if Sam wants the

1 fleet to pay for it, the review and the whole  
2 thing, the funny thing happens is if that happens  
3 then you've got to have a third party review the  
4 reviewers.

5 We're not going to review it because  
6 we don't want to go into competition with private  
7 industry in terms of reviews. So what they'll do  
8 is they'll contract that out to somebody else,  
9 Archipelago or somebody else.

10 So they review it. Then what would  
11 happen is NMFS would hire us to review the  
12 reviewer to make sure that the reviewer who was  
13 reviewing the fishermen wasn't doing something  
14 bad. So guess what, the total cost is going to  
15 go up.

16 So that's what we've been arguing.  
17 And the argument we've had with Sam in the past  
18 has been, so you're paying people to review  
19 observer stuff, when they come back in off the  
20 boat.

21 What's the difference between us  
22 reviewing camera stuff versus somebody that's

1 talking to person that's an observer? So that's  
2 been going on.

3 So basically this thing hasn't really  
4 settled down that we know. In the case of  
5 Alaska, we will be contracted by National Marine  
6 Fisheries Service to do the review of the camera  
7 stuff in Alaska.

8 And the reason is because there is a  
9 pot of money that people that fish in Alaska put  
10 into a pot and then we can contract off of that  
11 out of the 1.5 percent that they're paying in  
12 landing fees. So that's how that's going to work  
13 and that's fine.

14 But on the West Coast, that hasn't  
15 been figured out yet. So kind of the point Alan  
16 has been making a little bit and Cisco is that  
17 this stuff has not been decided 100 percent yet.  
18 So that's kind of where we are.

19 MEMBER OKONIEWSKI: Randy, is that a  
20 cost-recovery coming out of that, those fees or  
21 different fees?

22 MEMBER FISHER: No. That's a good

1 point, Mike. We also said on the West Coast  
2 you're paying 3 percent. That money has already  
3 been taken away to do other stuff.

4 So our argument also has been, well,  
5 why don't you say that the camera review stuff is  
6 part of the 3 percent that they're paying in  
7 landing fees? And what we've been told is, well,  
8 that money has already been used up by National  
9 Marine Fisheries Service.

10 MEMBER BONNEY: It's all about the  
11 money.

12 MR. RISENHOOVER: Well, right, and it  
13 is, and I think Stu's going to talk about the  
14 budget. You know, would it be great if the  
15 government paid for all these programs, you know.  
16 It would be great.

17 But looking at the budget perspective  
18 coming up, that's not going to happen. So how do  
19 we do that fairly?

20 MEMBER OKONIEWSKI: Just to be clear,  
21 the 3 percent does not cover all costs and is  
22 probably underfunded by about a percent and a

1 half from what we can tell.

2 And we're not exactly sure how that  
3 money's being spent so that's a big bone of  
4 contention out on the West Coast also.

5 CHAIR BEIDEMAN: I'm just going to add  
6 a little bit here, because the way that it worked  
7 in the Atlantic Highly Migratory Species, every  
8 boat is required to have video monitoring.

9 And the government does not actually  
10 take possession of any part of it, like the hard  
11 drives get removed and shipped. It's reviewed by  
12 a contractor.

13 NMFS is allowed to come and view it.  
14 They, of course, get reports, and they can watch  
15 the whole thing in totality if they choose, but  
16 they never actually have custody of it.

17 And it is for that purpose of being  
18 concerned about -- our guys have a lot of  
19 observer coverage, and they don't have a huge  
20 problem with exactly where they are fishing, but  
21 they have concerns about video potentially  
22 finding its way out of this collection and seeing

1 it on YouTube or what have you.

2 So that's one of the reasons I think  
3 that they went to the pretty broad extreme of  
4 trying not to make sure that it was in custody so  
5 it wasn't under a FOIA request, and it has  
6 nothing to do with where they're fishing or even  
7 what they're catching.

8 It's just some people don't like to  
9 see -- I personally don't want to see the  
10 chickens being slaughtered, but I do eat chicken,  
11 you know.

12 DR. WERNER: If I could follow up with  
13 Alan. Since you mentioned HMS, is that under  
14 ICCAT, is that under --

15 CHAIR BEIDEMAN: No, we abide by ICCAT  
16 recommendations for the species that we catch,  
17 but it's managed not under a council. It's  
18 managed under the division directly, a Highly  
19 Migratory Species division.

20 And not every boat in the Highly  
21 Migratory Fishery has cameras, but one particular  
22 sector, 100 percent has cameras and other

1 innovative management techniques.

2 But we had a little heartburn with  
3 data confidentiality. I don't think we looked at  
4 the storage, but of course, video is very large  
5 to store in the type of quality so that you can  
6 actually see what kind of tuna it might be. Tuna  
7 is trying to be distinguished one species from  
8 another, you need good resolution.

9 So anyway, I think that they came up  
10 with some innovative way to try to not allow  
11 that, because that was the big heartburn for the  
12 fishermen was not so much where we're fishing or  
13 even what we're catching but the optics of that  
14 having potential to -- some of these guys  
15 remember some of those experiences with other  
16 fisheries where that happened.

17 DR. WERNER: Thank you.

18 MALE PARTICIPANT: Go.

19 DR. WERNER: Go? Okay. All right.

20 So the second of three parts is on EBFM,  
21 ecosystem-based fishery management and resilience  
22 and again Doug Lipton and Jason Link helped me

1 with this.

2 And just as a warmup into this new  
3 topic, what do we mean, you know, you've all seen  
4 these little pictures of ecological resilience  
5 and the definitions of it.

6 So this is something that you've  
7 discussed in the past so this is sort of a  
8 refresher that, you know, resilience is the  
9 capacity of an ecosystem to tolerate disturbance  
10 without collapsing.

11 So you see these little stability  
12 wells and such, depicting, you know, how it is  
13 that different systems can be resilient to  
14 perturbations or not.

15 If you're in a stable state, then if  
16 you move something, it comes back. If you're in  
17 an unstable state, it might either go off or go  
18 into a different state altogether.

19 And so that's sort of the conceptual  
20 aspects of looking at resilience, as I said,  
21 resistance to perturbations. And we try to look  
22 at ecosystems, you know, withstanding shocks and



1 rebuilding when necessary. But we're also now  
2 going that next step beyond the ecosystem to  
3 including the social and socioeconomic aspects of  
4 the system.

5 And so we're looking at perhaps a  
6 little bit more complicated system where we're  
7 not just looking at how the ecosystem might be  
8 resilient to perturbations but also that balance  
9 with the social system. So it's a little bit  
10 more complicated as you try to put the three of  
11 them, or the two of them together. And so we're  
12 moving towards this idea of coupled  
13 socioecological systems.

14 And you've seen this before. It's  
15 part of the EBFM, the ecosystem-based fishery  
16 management road map and the priorities. And it's  
17 been presented as a pyramid where we start from  
18 understanding, you know, what are our objectives,  
19 starting at the ecosystem level, moving to  
20 defining priorities, advice.

21 But ultimately what we're working  
22 towards is maintaining the resilient ecosystems

1 and again now coupled with the human dimensions  
2 components.

3 And so Doug Lipton and Jason have been  
4 working on the integration of human dimension  
5 elements, so economics, socio-cultural  
6 considerations in the integrated ecosystem  
7 assessments, which we've talked about in the past  
8 and the EBFM science.

9 And there's this now what they're  
10 leading now or they're pushing forward now is the  
11 development and the integration of human  
12 dimension and resilience indicators.

13 And when you look at what we're  
14 talking about and what this human dimension  
15 working group workshop looked at was what aspects  
16 of this human dimension we're looking at.

17 It really is broad in terms of what's  
18 considered, whether it's recreational or  
19 commercial fishing or shipping or, you know, the  
20 health of a port or the tourist industry or,  
21 anything from, as I said, subsistence fisheries  
22 or processing.

1           And so this really begins to look at  
2           the human dimension in all of its components with  
3           regard to also looking at the ecosystem  
4           resilience and the ecosystem health.

5           And so there's a social indicators  
6           website that's been developed and the link is  
7           down there. And I believe there are, how many --  
8           sorry, I want to make sure of the right number.  
9           There are 13 indicators currently in use.

10           And it covers about 3,800 communities,  
11           24 coastal states, and you can go on the website  
12           and you can click on things. It says over here,  
13           labor, housing, population composition, et  
14           cetera.

15           This one happened to be clicking on  
16           poverty levels and again it's the coastal states  
17           and that's why, you know, I wondered why is all  
18           this stuff inland but it's by state and it's by  
19           coastal state.

20           And so when you click on these things,  
21           you get a sense of whether in this case looking  
22           at vulnerability, high is in red, low is in

1 yellow. And when you look at that, you could  
2 begin to see what, in this case, the indicator  
3 of, in this case, the poverty element looked  
4 like.

5 And then you begin to look at, you  
6 know, how do you, you know, you look at other  
7 components in terms of vulnerability to what.  
8 And so in this case, it might be looking at  
9 vulnerability to sea level rise.

10 And so you might have a community that  
11 is a strong fishing community, but it might be  
12 subject to, in this case, you're looking at sea  
13 level rise.

14 There's other things that you can look  
15 at. You know, you can look at social  
16 vulnerability, the labor force or, as I said, the  
17 gentrification pressure, you know, are we going  
18 towards, you know developments that might  
19 displace existing fishing efforts or communities  
20 and so on.

21 In this case, we picked up in this  
22 example over here is looking at sea level rise

1 vulnerability and again you get a map of in this  
2 case in the Northeast, where you have some areas  
3 that again are vulnerable to sea level rise and  
4 then yellow is the ones that are low  
5 vulnerability levels.

6 And then you put that together, you  
7 begin to look at those things and you look at  
8 linking in this case an example of catch  
9 diversity to species vulnerability.

10 And so again staying in the Northeast,  
11 you look at something that has low catch  
12 diversity in red and then you combine that with  
13 something that you look at the species  
14 vulnerability.

15 And in this case, vulnerability may be  
16 related to say shifts associated with warming or  
17 changes in environmental conditions that might  
18 make them more vulnerable to whatever external  
19 pressure you might be looking at.

20 And then when you combine the two, you  
21 look at what in a case where you have low  
22 diversity and high vulnerability, then you begin

1 to understand the exposure, I guess, or the risk  
2 of those communities in this context, in this  
3 socioecological context.

4 And so an example would be if you look  
5 at two communities, one in New Bedford,  
6 Massachusetts, which we know has the strong  
7 scallop fishery, Point Judith, which is more  
8 groundfish.

9 But if you look at the different  
10 aspects of fishing dependence, social  
11 vulnerability, climate change vulnerability and  
12 what you find is that in the scale of low versus  
13 high vulnerability, New Bedford might actually be  
14 more vulnerable than Point Judith under certain  
15 conditions, in this case, under climate change  
16 variability.

17 And in this case, the example here is,  
18 this being scallops, if in fact the ocean is  
19 acidifying and so on and if in fact this does  
20 affect the calcification if you will then that  
21 makes them more vulnerable than say, for example,  
22 Point Judith that is not dependent on the scallop

1 fishery.

2           So this combination of factors both  
3 ecological and sociological are being brought  
4 together in terms of the next step of EBFM and  
5 resilience.

6           And so the idea is that when you look  
7 at vulnerability and resilience, you can perhaps  
8 look at time series in the sense that you can  
9 have an initial baseline of, you know, in this  
10 case vulnerability resilience characteristics,  
11 social vulnerability, economic vulnerability,  
12 fishing engagement and sea level risk for  
13 example.

14           And then you can look at, you know,  
15 events or disturbances, how you adapt to those  
16 responses. And then you look at what this looks  
17 like under your ability or not to adapt.

18           So you begin to have a way to perhaps  
19 conceptually and hopefully eventually  
20 quantitatively be able to look at how communities  
21 may respond to these various factors of risk,  
22 resilience, vulnerability and ultimately adapting

1 to them.

2 And I think that was it on this part  
3 over here. It's a quick update. There's been a  
4 lot that's happened on the EBFM. I'll just take  
5 a step back on that.

6 The ecosystem-based fishery management  
7 roadmap is something that was established, the  
8 policy I think was in 2015. In turn, that has  
9 generated what are called Regional Action Plans.

10 And the Regional Action Plans, as the  
11 word says, they're regional. So each region has  
12 developed how we're going to implement EBFM  
13 whether it be say on the West Coast or East Coast  
14 or in Alaska.

15 And these are efforts that are joint  
16 between science centers, regional office councils  
17 and other groups in terms of how we incorporate  
18 EBFM in the study of the ecosystem.

19 And this in turn then, as I said, is  
20 part of it, but it's really pushing forward the  
21 social element with it and includes the human  
22 dimensions in a quite explicit way. And so why



1 don't I stop here and just open it up for  
2 questions if there's any.

3 MEMBER YOCHER: Pam Yochem. Thank  
4 you, Cisco. I noticed the Colburn et al.  
5 publication, is that a report on the workshop?

6 DR. WERNER: I don't think so. I  
7 think that's a separate paper. It's publicly  
8 available. We can make it available. It's  
9 public information.

10 MEMBER YOCHER: That was my next  
11 question actually. On one of the slides that you  
12 showed, it looked like it might even be available  
13 on the website or maybe you just put it at the  
14 bottom.

15 DR. WERNER: It is.

16 MEMBER YOCHER: That's really, yes,  
17 that sort of thing is super helpful to have not  
18 just the citation, but --

19 DR. WERNER: If you just have Colburn  
20 marine policy, it'll come up and it's an open-  
21 source, it's an open access publication.

22 MEMBER YOCHER: Yes, great. Thank

1 you.

2 MEMBER RHEAULT: Thanks, Cisco. I  
3 just wanted to point out that so much of this is  
4 being driven by our assumptions on the response  
5 of the shellfish population to OA and frankly,  
6 the science there is kind of flimsy.

7 I've done a lot of deep diving and  
8 I've made a lot of enemies in the scientific  
9 community by pointing out that putting a larvae  
10 in a beaker and bubbling CO2 in it is not a proxy  
11 for the real world.

12 But it drives so much of the  
13 vulnerability analysis that it almost skews the  
14 whole paper. There's very little stuff that I  
15 can really hang my hat on and say that I believe  
16 this is a serious problem until we do some real,  
17 much better quality science to determine what the  
18 response of these species is going to be to that  
19 stressor.

20 DR. WERNER: I don't disagree with you  
21 at all. No, I agree and I hesitated putting this  
22 example up exactly for that reason. This is not

1 intended to be quantitative. It's intended to be  
2 were these things to happen, this is how they  
3 come together and this is how you could evaluate  
4 the relative vulnerability of one community  
5 versus another one that perhaps I should say  
6 depends more on the scallop fishery than on the  
7 groundfish fishery.

8 And if in fact the scallop fishery  
9 were to be affected one way then that would make  
10 it more vulnerable. But I'm totally in agreement  
11 with you on the fact that there's error bars on  
12 this, yes, an uncertainty.

13 MEMBER BELLE: Sebastian Belle.

14 Cisco, first of all, nice to meet you and thank  
15 you for your presentation. I just want to point  
16 out that this presentation actually for me really  
17 emphasizes a point that Bob made earlier  
18 yesterday about the internal culture at NOAA and  
19 the kind of lack of focus on aquaculture.

20 If you look at what's happening in  
21 coastal communities in Maine, and you look at  
22 what's happening in those fishing communities,

1 aquaculture is a huge part of the resilience of  
2 those communities in respect to the dependence on  
3 the lobster fishery and what may or may not  
4 happen with that single species fishery.

5 So I would encourage the agency to  
6 begin to integrate aquaculture into the  
7 sociological analytics because I think you're  
8 missing a big thing that's happening.

9 And it's not just in Maine, it's  
10 happening all around the country, and I just  
11 really want to encourage that and hope that you  
12 will in the future begin to include aquaculture  
13 as part of that analysis.

14 DR. WERNER: So two quick comments on  
15 that. One, there is a draft document and maybe  
16 at our next meeting it'll be draft enough or  
17 better, robust enough to discuss where we  
18 actually have ecosystem considerations of  
19 aquaculture.

20 And aquaculture, you know, I think  
21 it's a natural part of any discussion on  
22 ecosystems and such. So I think that your point

1 about the inclusion of aquaculture and these  
2 considerations more explicitly, we're working  
3 towards that, and as I said, there is a document  
4 that we're working on.

5 And related to that, last year we --  
6 and you may have been on some of the external  
7 reviews. I know, Bob, you were on some of the  
8 external reviews last year on the science centers  
9 and the scientific efforts in aquaculture.

10 And there is a document now that  
11 summarized all of those findings. But the point  
12 is that we're now taking the next step and  
13 looking at what science needs to be done as a  
14 next step in aquaculture in the United States.

15 So you're saying that, you know, that  
16 we haven't paid enough attention to it. Maybe  
17 that's true, but we are fully engaged in terms of  
18 how we move forward.

19 And what we're going to work on again  
20 over the next year is what are the next steps in  
21 aquaculture science that we as an agency need to  
22 take on. And that includes both the social

1 science and the natural science aspect of it.

2 So the socioeconomics as well as how  
3 do we actually do it in the field. So point well  
4 taken on that. And I do hope to have the chance  
5 to comment on that.

6 CHAIR BEIDEMAN: So I'm going to go to  
7 Bob and then I'm going to let Cisco go back to  
8 his presentation.

9 MEMBER GILL: Thank you, Madam Chair,  
10 Bob Gill. Cisco, first let me say that I'm  
11 delighted to see the incorporation of the human  
12 dimension with the science, long overdue in my  
13 opinion.

14 Having said that, EBFM is a very data-  
15 intensive requirement and adding the human  
16 dimension just ups that significantly. And doing  
17 it regionally, regionally you'll find, as you  
18 know, data capabilities are way far apart.

19 So some regions are going to be having  
20 dramatically different EBFM plans than others to  
21 the point where the regions that are really data-  
22 deficient are going to have a much different EBFM

1 plan than those that have a substantial database  
2 in place.

3 How do you plan to address that? And  
4 given the budget projections, the likelihood of  
5 raising up the bottom section, the data-deficient  
6 folks, not likely to happen to any significant  
7 extent. Would you comment on that disparity and  
8 how you see that going forward?

9 DR. WERNER: Yeah. So first a comment  
10 on your first one about finally putting in the  
11 human dimensions into the conversation. And, you  
12 know, it used to be that the natural sciences  
13 happened, happened, happened and then all of a  
14 sudden we would just say something about human  
15 dimensions and it was almost like an  
16 afterthought.

17 And I would say that the card has  
18 completely flipped now, and the conversation  
19 doesn't happen without everybody being in the  
20 room at the beginning.

21 And so I think that we've been able to  
22 find a common currency to talk now and understand

1 each other, but that's on the positive side of  
2 things.

3 On the subject of the difference of  
4 the data intensity of this, yes, this is one of  
5 the issues and how do we get better data and more  
6 data is one of them. And the difference between,  
7 the regional differences is in part why, you  
8 know, even though there's a national EBFM policy,  
9 we broke it into Regional Action Plans, RAPs.

10 And so therefore each region is  
11 playing to its strength or weakness in the sense  
12 that if a region is lacking the data then that's  
13 probably the first step that they would need to  
14 do is whatever effort they can make to build the  
15 databases up to go into to be able to more fully  
16 include ecosystem considerations.

17 You know, in terms of how do we  
18 collect the data and all that, that's part of  
19 sort of the advanced technologies and new methods  
20 and such that we're trying to do.

21 And I'll touch upon it a little bit  
22 here in terms of how can we collect more data



1 more efficiently, which means hopefully would not  
2 require too many more resources.

3 But the answer to the question is  
4 there are regional differences and that's why we  
5 broke it up into Regional Action Plans so that  
6 not everybody's expected to be at the same point  
7 in the conversation.

8 You want me to go on? Okay. Last one  
9 is on the -- no, going the wrong direction, yes -  
10 - the Environmental Sample Processor. Mark Strom  
11 didn't put that on there. I put it on there. It  
12 just reminded me of Terminator.

13 Anyway -- and that's not to scale.  
14 Actually, this thing is about four feet tall.  
15 Actually, that is about four feet right there.  
16 Anyway, it's a pretty big gadget. And John Stein  
17 reported on this, and so the request here was to  
18 see if we could provide an update on it.

19 So the Environmental Sample Processor  
20 is an automated quantitative in situ sensing  
21 system that you'd, like it says in situ, so you  
22 put it out in the water. It's high frequency,

1 and it looks at near-real time data delivery in  
2 the early warning of harmful algae and their  
3 toxins.

4 And so there it is being deployed up  
5 there in the top right, and after it's deployed  
6 here's the surface of the water, and this is  
7 about 80 meters in this case, so it's about,  
8 whatever, 240 feet or so.

9 And it's like a mooring, and it sits  
10 here, and it actually can send data back in near-  
11 real time to land, and it actually tells you  
12 what's out there. And I borrowed some of the  
13 images from John Stein's presentation last time.

14 You know, and the importance of this  
15 particular, you know, instrumentation and warning  
16 system. You know, the harmful algal blooms are  
17 occurring perhaps more frequently than before.

18 Two years ago, there was a record  
19 harmful algal bloom outbreak along the West Coast  
20 that really, you know, affected a lot of the  
21 fisheries, the Dungeness crab fishery and others.

22 And it really extended all the way

1 from California to Alaska sometimes, not  
2 necessarily all at once, but all parts of the  
3 U.S. West Coast all the way to Alaska were  
4 affected somehow at some point in time.

5 And in this case, this gadget sits out  
6 here, and it transmits data, you know, somewhere,  
7 to Seattle. And what it does is that it's got  
8 these little chips out there or something, and  
9 you look at --- you take the water sample, and it  
10 can detect the presence of the harmful algal  
11 bloom.

12 And it can look at whether it's this  
13 kind of an organism or that kind of an organism  
14 or that kind of organism and does it by  
15 identifying which of the, it does it by DNA-to-  
16 DNA comparison.

17 So you can look at what is in the  
18 water versus what you are looking for and if  
19 there's a match then it lights up so to speak,  
20 and it says, okay, we have this kind of an alga  
21 out there. And then it also does a detection of  
22 the toxin, because not all algae are producing

1 toxins when they are there.

2 So it does two things, it says, is  
3 there an alga and secondly, is the toxin there.  
4 And so then that is sent back onto land and then  
5 a warning can take place.

6 And so the progress, and this is  
7 something that the Northwest Center has been  
8 working on and here's the size of it in  
9 comparison to a person.

10 You know, it started in 2011 when they  
11 first took delivery of it. You know, it went  
12 out, it was deployed in about 2015 and then it  
13 started providing data and between 2016 and '17,  
14 it actually provided an early warning of a domoic  
15 acid event that actually caused the shift in the  
16 razor clam season to take place earlier and to  
17 close earlier.

18 So had that not occurred, had they not  
19 detected it, they would not have had a razor clam  
20 season, which is important not just for, you  
21 know, the recreational folks, but the tribal  
22 communities and such depend on this harvest.

1                   And so just a little bit of, again  
2 I've already said this, but it's sitting out  
3 here. It does the analysis. It sends it, you  
4 know, in near-real time and then it comes up on a  
5 screen and then you can see the occurrence of it  
6 and when it exceeds a certain threshold then that  
7 caused the closure of the razor clam harvest, I  
8 guess, in this case.

9                   So that's just an update of where it  
10 is. I do want to say that we all know that, and  
11 I want to touch upon this because it's sort of in  
12 the --- it's sort of with Terminator in a science  
13 fiction thing, and this kind of looks science  
14 fictiony, but it's not science fiction. I think  
15 we're actually making progress towards this.

16                   So in this case, you know, the  
17 instrument I was talking about is just one point  
18 here and the question is, well, is that enough to  
19 be able to characterize something that might  
20 happen, you know, West Coast-wide.

21                   Like I said, you know, two years ago,  
22 there were occurrences of blooms that occurred as

1 I said from Southern California all the way into  
2 Alaska. Is one place enough, you know, to look  
3 at this? And the answer is, of course, no.

4 So we're looking at these instruments,  
5 these Saildrones. And so these are stiff-winged  
6 or stiff-sailed drones, and they're pretty fast,  
7 and they can actually have on them these  
8 detectors, whether they're acoustic, whether  
9 they're genomic, whether, you know, they're  
10 pretty, you know, optical instruments, et cetera.

11 And because they're so fast, they can  
12 cover a lot of area. In this case, this is an  
13 example of a Saildrone in the Gulf of Alaska, and  
14 this is through the trajectory it did.

15 In this case, it's an example of being  
16 able to detect acoustically the presence of fish.  
17 And so here's sort of a cartoon of the Saildrone  
18 and the fish underneath and here's the acoustic  
19 signal. And you can see then, you know, the  
20 spots of where, in this case, the school of  
21 pollock was.

22 If you go a little bit further into

1 this cartoon here, the schematic, what I'm  
2 looking at here is that some of these, as fish  
3 and other organisms swim, they exude stuff and  
4 that has a DNA signal to it, and you can capture  
5 that.

6 And if you can capture that, then you  
7 can tell what's actually in the water. And so we  
8 were having a conversation earlier that if you're  
9 doing an acoustic signal, at this point, you can  
10 say that something is there, but it's not easy to  
11 see, is it a sardine or is it an anchovy or how  
12 do you distinguish between what's there.

13 Well, it's possible that if you  
14 actually have a water sample, you can actually  
15 take it and actually then do the analysis and see  
16 what was it that caused that acoustic response.

17 And so the idea is to combine  
18 acoustics and genomics and optical things getting  
19 back to getting more data in ways that are  
20 efficient and perhaps don't rely on ships as much  
21 as we do or we can use ships in other ways.

22 We always need ships, but we can use

1       them in other ways. And there's an example of  
2       this, where again in the Northwest, and this is  
3       basically a water bottle and you're collecting  
4       the water sample.

5                 Then you take the water sample back  
6       into the lab and hopefully in a couple of years,  
7       you can actually do it while you're at sea, and  
8       you can look at what's called an environmental,  
9       eDNA, environmental DNA or eDNA.

10                You can take that scoop of water and  
11       combining with the acoustic signal, you can say  
12       not just how much was there but what was there.  
13       And so it's a way of perhaps moving forward in  
14       terms of quantifying, as well as identifying what  
15       the biomass and abundance and distributions and  
16       things might be.

17                So we're just quite engaged in this  
18       right now in the development of what are called -  
19       omics. So -omics is a term that refers to  
20       genomics, transcriptomics, proteomics,  
21       metabolomics, et cetera, so that whole -omics  
22       thing.



1           And each one tells you something else  
2 about what you're looking at. So we're just  
3 engaged in this field of -omics to really push  
4 forward the next steps in what we do.

5           And so that's just a little bit of an  
6 add-on to the instrument on the harmful algal  
7 bloom, because that one, you know, is an  
8 instrument like you saw. It's about four feet  
9 tall. The next step is to miniaturize it and  
10 perhaps then put it on some of these gliders so  
11 you can do this -- so you don't require that it  
12 be moored, but you can actually launch it, you  
13 know, onto gliders and other things like that.

14           And so with that, I'll stop. I  
15 probably went too long, but I'll stop there, if  
16 there's any questions on this last piece.

17           CHAIR BEIDEMAN: Okay. I have Harlon  
18 queued up, and I want to try to, sorry, and  
19 Roger, some other folks. I'll write them all  
20 down, but I want to try to get back on schedule a  
21 little bit, so if we can make it a little peppy,  
22 that'll be great.

1                   MEMBER PEARCE: Real quick. Thank you  
2 for your presentation. I'm really interested in  
3 the technology you're utilizing. This group is  
4 very interested in that right now, and we're in  
5 discussions about how we can do a better job with  
6 a councilmatic system.

7                   I want to go back to your slide that  
8 showed us the early warning of the acid and where  
9 you had razor clam opening and closing  
10 differently than it would have been. And I  
11 assume that's a state fishery and not a federal  
12 fishery.

13                  DR. WERNER: Correct.

14                  MEMBER PEARCE: What we need to do is  
15 how do we transition that to a federal fishery to  
16 be able to do the same thing? And that's a tough  
17 challenge, a heavy lift.

18                  But I think that through the  
19 technology developing, I think we have to figure  
20 out how to consider that and how do we do things  
21 just like the state did with our federal  
22 fisheries. And we're grappling with that

1 question right now.

2 But I really enjoyed the presentation,  
3 and I love the ability to do what you did, and we  
4 need to be able to do that through all of our  
5 fisheries.

6 DR. WERNER: Yeah, if we could  
7 compress the time to be quantitative at the time  
8 of council meetings or other things to say for  
9 certain that we can do something then I would  
10 hope that we can do what you're saying and be  
11 more nimble in the advice that we can provide.  
12 Yes?

13 MEMBER BERKOWITZ: Cisco, thank you  
14 for the presentation. Just out of curiosity, how  
15 often should surveys be done, stock assessments,  
16 for accuracy purposes?

17 DR. WERNER: Do I have all day? The  
18 answer, of course, it depends. Right?

19 MEMBER BERKOWITZ: Yeah, yeah.

20 DR. WERNER: It depends on the  
21 organism, you know, on the species you're looking  
22 at. Some species are long-lived so you might not

1 need to measure them as often. Some are  
2 fluctuating rapidly and you're trying to see the  
3 recovery.

4 I mean we try for most species, at  
5 least in fish, to I would say that probably at  
6 least every other year is when we try to do a  
7 survey and address a particular fishery. For  
8 marine mammals, you could probably go longer, but  
9 for fish probably every other year, if not every  
10 year.

11 MEMBER BERKOWITZ: Okay. Thank you.

12 CHAIR BEIDEMAN: Peter?

13 MEMBER MOORE: Yeah, great  
14 presentation, thank you. The Sairdrone?

15 DR. WERNER: Yes.

16 MEMBER MOORE: Are you doing that with  
17 industry or is that solo NOAA?

18 DR. WERNER: No, that's industry. And  
19 it's a very interesting approach. They're taking  
20 off in the sense that first of all, the  
21 technology seems to be working and secondly, you  
22 know, they're getting a lot of clients, including

1 Navy, et cetera.

2 And their model, their business model  
3 is that they prefer not to sell you the  
4 Saildrone, they will run it for you. And you  
5 work with them, and they have a cadre of people.  
6 And you tell them, I want to do this and they'll  
7 program it and do it, and they'll interact with  
8 you.

9 And they say, well, you know, I saw  
10 something here. I want to spend a little bit  
11 more time here. So you work with them, but the  
12 idea is that they will do it for you, but they  
13 sort of run the Saildrone for you. It's not a  
14 bad idea actually. I think --

15 MEMBER MOORE: So the question is,  
16 from a NOAA perspective, if you wanted to  
17 integrate that information into a stock  
18 assessment, how could you do that? How would you  
19 do that in terms of the, you know, the standard  
20 that you'd need for data?

21 DR. WERNER: You know, in terms of  
22 assessing the quality of the data and all that,

1 so that's the conversation we're having right  
2 now. So the first thing that we're going to have  
3 to do is the calibration. Right?

4 So ideally, and I cut it out because  
5 there's actually a ship here, and the idea is  
6 that first we'd have to do a side-by-side and  
7 make sure that we understand that this  
8 information is the same that the ship is getting.

9 If it's not, then is it better and  
10 why, is it worse and why? So the idea is that  
11 we're going to have to do sort of a parallel  
12 effort for a while to assess the quality or the  
13 comparison of one data set and the calibration of  
14 one data set to the other one and then move on.

15 But this is something that we're  
16 looking at very closely. It's extremely exciting  
17 to have this because, you know, many times ships  
18 spend a lot of time where there's no fish and  
19 yet, I mean, you have to sample where there's no  
20 fish.

21 But you could direct ships to do  
22 something that you need ships there for, and this

1 can do sort of the mowing the lawn that has to  
2 happen as well, but you can basically rely on the  
3 robot to do that for you.

4 MEMBER MOORE: So the reason I ask is  
5 that in the Northeast Fisheries Science Center,  
6 I've talked with Jon Hare, John Manderson and  
7 that crowd about a mid-shelf winter small pelagic  
8 survey, menhaden, herring, mackerel if there are  
9 any, and the hang-up is always the cost of the  
10 survey even with a commercial vessel.

11 DR. WERNER: Right.

12 MEMBER MOORE: And is this Liquid  
13 Robotics or is this a different Saildrone  
14 company, do you know?

15 DR. WERNER: Yes, that's them here.

16 MEMBER MOORE: Okay.

17 DR. WERNER: Yes.

18 MEMBER MOORE: So that really opens up  
19 a lot of possibilities. I think the pairing of  
20 the federal ship with the private piece to ground  
21 truth is the question.

22 DR. WERNER: Yes. I agree and --

1                   MEMBER MOORE: And the budget.

2                   DR. WERNER: It's something we want to  
3 do. I personally would like to do very closely.  
4 And then analyze what the difference is between  
5 Liquid Robotics and that.

6                   This one doesn't, each one has pros  
7 and cons. This one works -- you mentioned in the  
8 wintertime. This one works pretty well in rough  
9 waters. It'll tumble and then come back up  
10 again, and it seems to survive, you know, being  
11 shaken up quite well so far, but we've got to do  
12 a little bit more, yes.

13                  CHAIR BEIDEMAN: Mike?

14                  MEMBER OKONIEWSKI: Thank you, Cisco.  
15 Several years ago, you promised me there would be  
16 a lot of things coming down the pipeline, and you  
17 weren't kidding.

18                  DR. WERNER: No.

19                  MEMBER OKONIEWSKI: I guess I'll start  
20 out with the first one. I've got actually two.  
21 And one is that having been around domoic acid  
22 outbreaks and PSP before, the first concern, of



1 course, is food safety and so there is an overlap  
2 of state and federal agencies already involved in  
3 the Dungeness crab fishery, for example, just to  
4 protect the consumer ultimately.

5 In some cases, it's a PR issue as  
6 well, but there was really full court press put  
7 on by industry, Department of Fish and Wildlife  
8 in Oregon and Oregon tri-state crab commissions  
9 and FDA, to a lesser degree FDA, but they were  
10 doing inspections and ODA, Oregon Department of  
11 Agriculture just to make sure that people were  
12 aware of what was going on.

13 And the Northwest Fisheries Science  
14 Center also got involved as far as what they  
15 could do to kind of give us information in  
16 general on this.

17 So I think in any case, a federal  
18 fishery or a state fishery managed, the word is  
19 still going to get out if there's any kind of  
20 concern about food safety. The disruptions in  
21 business are very extensive, especially on the  
22 marketing end of things. It really put a spike

1 in our heart for our Christmas season for crab.  
2 That's one.

3 The other one is on the stock  
4 assessments, which are near and dear to my heart  
5 as you well know, Cisco. What is the projected  
6 timeline when we might be able to utilize some of  
7 this new technology and would we be able to -- I  
8 would assume this would be at a lesser cost than  
9 running the ships around -- would we be able to  
10 augment or increase the frequency of stock  
11 assessments in some cases by utilization of some  
12 of this new technology or has it been thought out  
13 that much yet?

14 DR. WERNER: So there are aspects that  
15 we're almost beginning to use operationally now  
16 in terms of identification of species and such  
17 that might make some of the analyses quicker.

18 So there's aspects of these new -omics  
19 and things like that that are trickling into the  
20 laboratory that I think will help us indirectly  
21 in the assessments.

22 Actually going in the field and

1 realizing this because of the question that was  
2 brought up in terms of calibration and  
3 understanding how we make the transition from one  
4 to the other and just wanting to make sure that  
5 we get it right, I'm looking at something like  
6 this, I would like to say five years, but it's  
7 probably more five plus.

8 But it's something that we're working  
9 on internally with, you know, other agencies,  
10 National Science Foundation, BOEM, et cetera,  
11 because there's interest in this environmental  
12 DNA and -omics in a large way.

13 But we're also working with Norwegian  
14 colleagues and Japanese colleagues, who are also  
15 trying to do this. And Japan actually has made  
16 some steps in actually using some of these  
17 genetic approaches or -omics approaches to  
18 assessments of, I think they did it for Japanese  
19 mackerel.

20 So in some cases, it might work better  
21 than in others or more quickly than others, but  
22 I'm looking at the five to ten year range,

1 conservatively, I hope.

2 CHAIR BEIDEMAN: So I have one more  
3 and then we're 30 minutes behind almost, so I'm  
4 going to -- you have the last word.

5 MEMBER HAMILTON: Good morning. It's  
6 really exciting. I actually can't wait five  
7 years from now to see the application of all this  
8 and how it benefits fishery management, so thank  
9 you.

10 And this is for later. For now, I  
11 just want to make a comment that on the economic  
12 pieces, you know, talk about how often they  
13 should be done. These dollars here are from  
14 2005.

15 And on the West Coast anyway and the  
16 Pacific Northwest, when I think about the effects  
17 of these closures for crabbing and, you know, the  
18 shellfish gathering on our side, that \$4 million  
19 could happen to the Long Beach Peninsula in one  
20 weekend practically. So really want to see those  
21 updated.

22 And the other thing about the

1 economics from the first presentation, the  
2 effects of these things go way into freshwater  
3 for the recreational industry.

4 The effects of multi-year on salmon  
5 species, steelhead species from the blob for  
6 instance. So NOAA frequently just looks at  
7 freshwater impacts of these things, but when  
8 you're looking at ecosystem-based fishery  
9 management and the economics, have your staff  
10 look at the freshwater effects as well.

11 When you're measuring the economic  
12 effects, you know, bad fish runs from bad oceans  
13 go all the way into Idaho.

14 DR. WERNER: Right.

15 MEMBER HAMILTON: And that's not  
16 usually how you look at it. So I think there's a  
17 huge undervaluing on the recreational side on the  
18 economics and the impacts.

19 DR. WERNER: And unfortunately, these  
20 last two or three years are good years to look at  
21 those impacts.

22 MEMBER HAMILTON: They are, yes,

1 unfortunately you're right. So thank you,  
2 though. This is really exciting.

3 DR. WERNER: Thank you.

4 CHAIR BEIDEMAN: So thank you, Cisco  
5 and if you're around, I'm sure folks will be --

6 DR. WERNER: I will.

7 CHAIR BEIDEMAN: -- chatting with you  
8 in the margins. So thank you for hanging in an  
9 extra half-hour. So the next presentation is the  
10 budget outlook and administrative update, and we  
11 have Stu Merrill here to present that.

12 MR. MERRILL: Sounds good. Good  
13 morning, everybody. Can you hear me okay? All  
14 right. Thank you, Kate.

15 MEMBER BONNEY: Can you put that in  
16 your pocket if you want the self-changer or we  
17 can change it for you.

18 MR. MERRILL: Super, we'll go that  
19 way. All right. Well, I apologize that Brian  
20 Pawlak isn't able to be here with you today. It  
21 speaks to our D.C., Maryland and Virginia highway  
22 opportunities with the American Legion Bridge

1 shutdown. Luckily, I get past that venue a bit  
2 earlier in the morning and so wasn't an issue for  
3 me this morning.

4 I serve permanently as the deputy  
5 chief financial officer for NOAA Fisheries and  
6 since April, Paul Doremus has been in an acting  
7 political position, and Brian has been acting as  
8 the deputy assistant administrator for  
9 operations, and I've been acting as the acting  
10 CFO, and I'd like to go through a little bit of  
11 budget information for you all.

12 And here we go. So just like any  
13 given year, any given time, there are three  
14 budget years in play with overlapping and  
15 intersecting issues with them.

16 So we've just closed out the fiscal  
17 year '17 budget at the end of September. And so  
18 we have that in the books, and it gives us good,  
19 clear historical data to be able to look at and  
20 analyze.

21 We are in the beginning of fiscal year  
22 '18, and I'll talk a little bit about that in a

1 minute, and then the Administration is working on  
2 the development of fiscal year '19 budget right  
3 now.

4 So for fiscal year '18, we're  
5 currently under a continuing resolution, which  
6 goes until not this Friday but next Friday,  
7 December 8th. I was providing a presentation  
8 similar to this to a group across town yesterday.

9 And I believe it was at about the  
10 exact minute that I was speaking to some current  
11 events that Speaker Ryan was describing that he  
12 anticipated a short-term CR in order to get  
13 everything in order in order to do a full-year  
14 appropriation.

15 It was about the same moment that the  
16 president was tweeting, don't expect another CR.  
17 So your guess is as good as ours. Seriously, we  
18 do watch the popular press to have an  
19 understanding of where the emphasis is.

20 As we know, Congress is dealing and  
21 the Administration is dealing with some very  
22 challenging budgetary and tax issues, and the



1 funding of NOAA Fisheries gets caught in the  
2 midst of that. So we've got funding through next  
3 Friday and then we'll see whether another CR, a  
4 full-year appropriation or government shutdown  
5 procedures.

6 Unfortunately, with the way in which  
7 the federal government funding has gone over the  
8 past number of years, we're very adept at doing  
9 the government shutdown planning protocols.

10 So under the CR, there are no new  
11 starts that are allowed to be commenced and  
12 sometimes that can be confused. We operate under  
13 the same policy guidance as we did in fiscal year  
14 '17.

15 The simple analogy I'll use is if we  
16 have a janitorial contract for one of our  
17 facilities that is going to be expiring next  
18 week, we absolutely and are supposed to let a  
19 contract in order to have those janitorial  
20 services.

21 We were talking about with Cisco the  
22 surveys. If there was a survey and it's a

1 periodic cycle for that survey, we can let the  
2 contract to have that survey under a CR.

3 It's just we can't go into new  
4 exploratory activities, which we would need  
5 congressional guidance in order to undertake. We  
6 can't do that under a CR. And our grants can be  
7 awarded, our contract activity goes on, and we  
8 maintain operations and services.

9 Under the fiscal year '18 President's  
10 budget that's currently under deliberation, it  
11 was delivered to Congress back in February. And  
12 in that, from a macro scale, the Administration  
13 was making some very difficult decisions in that  
14 the Administration was looking to advance defense  
15 by \$54 billion and needing to offset that from  
16 the rest of non-defense by a reduction of \$54  
17 billion.

18 Those are some difficult decisions and  
19 difficult impacts that cascade down through the  
20 ranks, specifically with a \$54 billion reduction.  
21 For the Department of Commerce, our parent  
22 Cabinet-level agency, the President's budget

1 showed a reduction of \$1.5 billion.

2 And as you get down to NOAA, NOAA is  
3 resolute at continuing with our core functional  
4 capabilities across the board. So whether it's  
5 observing systems or recapitalization of our  
6 fleet were described as you guys were talking  
7 about earlier, the critical nature of that and  
8 also ways to be able to augment that, our legal  
9 obligations under our guiding mandates, and  
10 fostering safe and efficient oceans for coastal  
11 navigation, so across NOAA's issues.

12 So here we go one step deeper and give  
13 you a little bit of visual presentation on the  
14 way in which the current budget activity looks  
15 for NOAA Fisheries.

16 So on the left-hand column is the FY  
17 '17 budget as it was enacted, and the divisions  
18 here are by our major enterprises. The second  
19 column over is the presentation of the FY '18  
20 President's budget.

21 And then both chambers of Congress, of  
22 course, the Senate and the House have marked up

1 that. They haven't come to conference yet. But  
2 as you can see, both the Senate mark and the  
3 House mark visually are very, very similar to  
4 what FY '17 enacted was.

5 As a matter of fact, as a matter of  
6 public record, those marks reverse all of the  
7 President's budget reductions for NOAA Fisheries  
8 with one or two very small exceptions.

9 So I'll give you a little bit of  
10 specifics in the guidance. These days, we get a  
11 lot of wonderful attention by members of Congress  
12 and their staff. With the 18 marks, we have just  
13 south of 70 specific elements of guidance coming  
14 from the appropriators.

15 And it helps to guide our attention,  
16 and it shows some very clear need for the world  
17 of work that NOAA Fisheries does. I'll share a  
18 few of those with you.

19 It shows strong support for the  
20 regional councils and commissions, funding them  
21 just about at the FY '17 levels. The House is  
22 just \$200,000 below the '17 level, and the Senate

1 mark is \$1.6 million above the '17 level. Strong  
2 support in salmon management, as well as,  
3 specific salmon with funding levels just above  
4 the FY '17 level.

5 Aquaculture had a strong bump-up in  
6 the '17 budget and so the House moderates that  
7 slightly in that they are above what our  
8 historical investment has been for aquaculture,  
9 but just a little bit below the '17 level, and  
10 the Senate is another \$5.7 million above that FY  
11 '17 level. So showing a clear -- I heard the  
12 discussion as I came in the room, the emphasis on  
13 aquaculture, and this is clear resource support  
14 behind that.

15 There's been attention by both  
16 chambers on Gulf of Mexico reef fish needs and  
17 that continues with the FY '18 marks and, as well  
18 as, we talked about burgeoning technologies in  
19 Cisco's presentation. And so with EM/ER, the  
20 house doesn't have any specific provisions, but  
21 the Senate directs \$3.5 million for collaboration  
22 in that regard.

1                   We have some critical facility issues,  
2 none more critical than the safety and security  
3 of the Mukilteo Research Facility over on the  
4 west coast. And we've received initial funding  
5 for planning preparation for the reconstruction  
6 of that facility in the '17 budget.

7                   The President's budget request does  
8 not ask for any funds for that in FY '18, and the  
9 House remains silent on that, but the Senate  
10 calls for \$10.5 million in construction funds for  
11 that facility.

12                   There are some areas where both the  
13 House and Senate speak in unison on some issues,  
14 and the Cooperative Research to be funded at the  
15 same level as the '17 request without a  
16 reduction, as the President's budget asks for.

17                   And the Pacific Coastal Salmon  
18 Recovery Fund at the FY '17 level of \$65 million  
19 not the same as the President's budget request  
20 that would call for the elimination of funding  
21 for PCSRF in fiscal year '18.

22                   And then the Saltonstall-Kennedy Grant

1 funds based on the current estimates  
2 approximately \$10.2 million available. And that  
3 depends on the amount of funds that come  
4 available to us through import tariffs. The  
5 President's budget called for no funds for S-K in  
6 the FY '18 President's budget.

7 So again, those are some details  
8 that's in the presentation that you have as we  
9 summarize those. So fiscal challenges.  
10 Obviously across the federal government, we see  
11 flat federal budgets and mission support  
12 requirements are increasing, the cost to repair  
13 and maintain facilities, the cost to repair and  
14 operate major government vessels, the cost of  
15 federal labor and contract labor.

16 All of those inch up as time goes on,  
17 and so it really gets to some pretty simple  
18 algebra that if the overall budget is remaining  
19 flat and critical mission support needs are  
20 increasing, that puts downward pressure on  
21 operational dollar use.

22 Again, I said I was across town

1 yesterday. Our budget professionals from all  
2 around NOAA Fisheries are in town this week also,  
3 and I can tell you it's a very warm discussion as  
4 we talk about these challenging issues. They  
5 care dearly about the mission accomplishment for  
6 the organization.

7 So focusing on our strategic goals,  
8 Fisheries does not waver. Sustainable fisheries,  
9 protected resources and operational excellence  
10 are at the core of what we do.

11 In the new administration, you see a  
12 slightly stronger emphasis on the analytical  
13 component, on the return on investment, on GDP  
14 emphasis on that. And NOAA Fisheries is very  
15 well-versed in being able to communicate our  
16 value-add to the nation in terms of the economic  
17 impact as you all know.

18 In improving the organizational  
19 excellence, I'd also say that the added component  
20 that we see with clarity under the new  
21 administration is in regulatory reform, and we  
22 are also well-versed in that and understand the



1 need to be as efficient and effective with the  
2 regulatory activity that we need to perform.

3 So the outlook. So this was maybe  
4 printed up last week, so another CR is likely. I  
5 don't know after the tweet yesterday whether I'd  
6 be able to say that. But, in all seriousness,  
7 with the discussions that are going on with tax  
8 reform right now, it's an awful lot of work for  
9 Congress and the Administration to do in some  
10 very short order.

11 So folks really are predicting that  
12 some type of furthering of a continuing  
13 resolution into the fiscal year will be upcoming.  
14 So we manage uncertainty by targeting our scarce  
15 resources on our most critical priorities.

16 And we are doing a number of different  
17 internal activities within the organization to  
18 make sure that we're dedicating our scarce  
19 resource dollars in the very most effective and  
20 efficient ways.

21 We're working hard to execute against  
22 our strategic goals and collaborating with our

1 partners, both state, federal and independent.

2 Okay, so that's a quick summary on the  
3 budget. Hopefully that's helping a little bit  
4 timing-wise and be glad to take the questions  
5 that folks would have.

6 CHAIR BEIDEMAN: Sebastian?

7 MEMBER BELLE: Sebastian Belle. I  
8 should know this number and I don't, but what is  
9 the total amount of revenue which is collected as  
10 a result of the import tariffs and what portion  
11 does your agency get of that?

12 MR. MERRILL: So we get 30 percent of  
13 the tariffs and so that transfer is going to  
14 depend year to year, but that is about \$150  
15 million. And what Congress has done for many,  
16 many years is they've used a significant portion  
17 of that, somewhere between \$135 million and \$145  
18 million as an offset to fund our base of  
19 operations.

20 So they get very prescriptive of those  
21 transfers. It comes into the P&D fund, the  
22 Promote and Develop fund so that approximately

1       \$150 million comes in. They direct somewhere  
2       between 135 and 145 to fund our base needs, and  
3       then they direct the remainder of that to be  
4       competed for the S-K grant activity.

5                   MEMBER RHEAULT: Well, what's coming  
6       in is closer to 320 isn't it? On the tariff  
7       side?

8                   MR. MERRILL: Let me check my numbers,  
9       Bob, and I'll get back to you.

10                   MEMBER OKONIEWSKI: You know, on the  
11       collaboration side, do you have a rough breakout  
12       as to, I mean, I assume the coastal states or  
13       maybe not, but just kind of explain how that  
14       works or methodology involved in who gets what,  
15       how that's determined. Is it a political thing  
16       or is it --

17                   MR. MERRILL: Mike, that goes through  
18       many, many different mechanisms, through many  
19       different grant mechanisms and many different  
20       outreach efforts. And so I couldn't collectively  
21       say specifically how much is going to which state  
22       because of all the different ways in which

1 they've done it. We've got --

2 MS. LUKENS: I was just going to add  
3 that tomorrow we have Dan coming in to talk about  
4 all of the different complexities of the  
5 Fisheries' grant-making processes.

6 MR. MERRILL: Okay, good.

7 MS. LUKENS: That there's more  
8 specificity for an entire hour to answer all  
9 those types of questions, the nuances that Stu's  
10 talking about. So you might get more down in the  
11 weeds with Dan tomorrow morning.

12 MEMBER GILL: Thank you, Madam Chair.  
13 Could you back, I think it's Slide 6 where you  
14 showed the breakout on the budget for '18?

15 MR. MERRILL: Sure.

16 MEMBER GILL: So on the "Other  
17 Accounts" section, it looks like a \$40 million  
18 reduction no matter what happens in all  
19 likelihood. Did you cover those when you had the  
20 highlights?

21 MR. MERRILL: I didn't, because those  
22 are mechanical in nature, those are not

1 appropriated dollars. That's not part of an  
2 incremental request that the Administration would  
3 be making. And it --

4 MEMBER GILL: So I guess my question  
5 comes to be, are there things in that "Other  
6 Accounts" of \$40 million reduction that would be  
7 something in which we're interested?

8 MR. MERRILL: No.

9 MEMBER GILL: All right, thank you.

10 MEMBER BONNEY: The \$20 million for  
11 disaster mitigation funds?

12 MR. MERRILL: Yes.

13 MEMBER BONNEY: Which disaster does  
14 that fund?

15 MR. MERRILL: That's a great question.  
16 And so the concept of a disaster mitigation fund  
17 is an advanced opportunity to hold those funds in  
18 advance of that.

19 There are challenges with Congress'  
20 desire to individually evaluate each disaster on  
21 its own. So it kind of speaks to the way you  
22 were asking your question.

1           There are many challenges with going  
2 forward with a concept like that. So what we're  
3 seeing with the hurricanes this year, we're  
4 seeing three different supplemental opportunities  
5 where Congress is specifically looking at impacts  
6 and making judgment on how much and where they  
7 want to direct the funds.

8           And so I would say that we believe that that  
9 may well be the way in which they continue to  
10 move forward for that.

11           CHAIR BEIDEMAN: It's a miracle.  
12 We're back on track.

13           MR. MERRILL: Glad to help.

14           CHAIR BEIDEMAN: Thank you. I was  
15 just going to thank you for that and thank all  
16 the members for your succinct questions. And we  
17 are actually at a break until 10:30. So if you  
18 could please come back at 10:30, we'll have  
19 another update.

20           (Whereupon, the above-entitled matter  
21 went off the record at 10:18 a.m. and resumed at  
22 10:33 a.m.)

1                   CHAIR BEIDEMAN:  So, while he gets his  
2                   audio working, we have a legislative update and  
3                   regulatory streamlining presented by Alan  
4                   Risenhoover who is the Director of the Office of  
5                   Sustainable Fisheries.  Thanks, Alan.

6                   MR. RISENHOOVER:  Thanks, Terri, and  
7                   thanks, everybody.  I'm going to run through two  
8                   presentations really quick and just try and split  
9                   the time between a quick update on legislation --  
10                  in particular, Magnuson Act -- and then also talk  
11                  a little bit about our regulatory reform, how do  
12                  I say it, efforts under the new administration.

13                  So, we've got about 45 minutes.  I'm  
14                  going to try to split that, leave some time for  
15                  questions in between.  But we've got some folks  
16                  here to help.  So I'm going to start with  
17                  Magnuson, run through it real quickly.

18                  We may not have time to answer all the  
19                  questions, but I have Stephanie Hunt here from my  
20                  office, and Becky Lizama from the Legislative  
21                  Affairs Office.  If you have specific questions,  
22                  catch one of us at a break or in between, and

1 we'll try and get those answered. How do I make  
2 the slides move?

3 Okay. Yes, all right. And I am going  
4 to spend a little bit of time just reading from  
5 my notes because there's a lot of details that I  
6 just can't keep up with. Again, I'm going to  
7 talk primarily, well I'm going to talk about the  
8 Magnuson-Stevens Act, legislative actions.

9 There are also a number related to the  
10 Endangered Species Act and the Marine Mammal  
11 Protection Act. We've included in the briefing  
12 materials a short summary of the primary bills.  
13 So take a look at that. There's links in that  
14 that will take you to the congressional site so  
15 you can see those.

16 But I'm not going to try and cover all  
17 of those because while we've got, you know, a  
18 dozen or so Magnuson bills in there, there's  
19 probably a dozen or so ESA bills, half a dozen  
20 that affect the Marine Mammal Protection Act,  
21 NEPA, on and on.

22 So I'm not going to try and cover all



1 of those today. So, I am going to talk about six  
2 acts, going to do a slide on each of them. Those  
3 six pieces of Magnuson legislation probably will  
4 form the basis for any final action. I don't  
5 think that will occur this calendar year, but who  
6 knows.

7 As Stu mentioned, they seem to have  
8 few things they need to take care of in the  
9 coming weeks, so Magnuson may not fit in with  
10 that.

11 So just a quick highlight on each of  
12 them. And as we go through these, I think you're  
13 going to notice a theme, and I don't think we  
14 need to test that at the end, but I think you're  
15 going to see a theme of RED SNAPPER and  
16 recreational fishing as we go through most of  
17 these.

18 I am not going to offer any position  
19 from the administration on these bills, we don't  
20 have one. So if you think I'm saying we favor  
21 one bill over the other, I'm not. It's my  
22 mistake.

1           The Council Coordinating Committee of  
2           the Councils has put together a rather detailed  
3           document on their position on a number of, not  
4           bills specifically but on a number of issues.  
5           And we'll make sure Jennifer has that and can  
6           post that on the MAFAC site for you to take a  
7           look at.

8           They have a great summary that goes  
9           from issue to issue and issue. Where they have  
10          consensus, they've included that, and they've  
11          just recently transferred that document to us.  
12          So we can talk a little bit about that.

13          Magnuson Act, it has been a pretty  
14          busy year already. There have been seven  
15          hearings on the bill, and related legislation.  
16          There's been hearings on science. I think  
17          there's a hearing on NEPA, in fact today. So  
18          lots of activity.

19          Earl Comstock, who many of you know  
20          who is the current Director of Policy for the  
21          Department of Commerce, had testified at a RED  
22          SNAPPER hearing earlier, and Chris Oliver was

1 onboard for a month or so before he got his turn  
2 in the seat to talk about Magnuson as well.

3 Again, we haven't proffered any  
4 specific views on legislation, but we have said  
5 yes, we think the Act's working relatively well,  
6 in many cases very well.

7 It's rebuilt fisheries. But there's  
8 some fine-tuning to do, and we need to look at  
9 where we can be more flexible, still meet our  
10 statutory standards for ending overfishing,  
11 rebuilding stocks. But where we can be flexible,  
12 let's look at that.

13 So, the first bill is the likely  
14 contender for the one that will form the basis of  
15 any legislation that passes. And that's H.R. 200  
16 introduced by Representative Young of Alaska, a  
17 familiar name when it comes to Magnuson Act.  
18 It's the most comprehensive proposal.

19 It focuses on a wide range of  
20 reauthorization issues, but does have a little  
21 Gulf of Mexico RED SNAPPER in there as one of the  
22 driving parts of it.

1           It includes provisions for exempting  
2 ACLs in some cases for such things as  
3 transboundary stocks, allowing councils to use  
4 alternative management measures for recreational  
5 fisheries, modifying rebuilding plans and  
6 timelines -- much as we did in our National  
7 Standard 1 revisions -- establishing additional  
8 partnerships with states to develop best  
9 practices for state recreational registry  
10 programs, changing how the MSA interacts with  
11 some other statutes -- in particular NEPA and the  
12 Endangered Species Act.

13           It replaces the term "overfished" with  
14 "depleted", but still contains the current  
15 requirements for rebuilding those depleted  
16 species as if they were overfished.

17           And it also includes some catch share  
18 referendum requirements for the Gulf of Mexico,  
19 South Atlantic, New England, and Mid Atlantic  
20 Councils. So a lot in that that, as I said, the  
21 broadest piece of legislation coming out of the  
22 National Resources Committee.

1                   The ranking minority member,  
2           Representative Huffman from California, has  
3           introduced, not introduced but forwarded a draft  
4           of a bill that has not been introduced yet,  
5           fairly comprehensive.

6                   A number of places it overlaps with  
7           Representative Young's bill. The one place it  
8           seems to have some big exceptions with that bill  
9           is on the relationship between the Magnuson-  
10          Stevens Act and those other acts, in particular,  
11          NEPA.

12                   But it includes some alternative  
13          fishery management measures, again looking at  
14          recreational fishing, some modifications to ACLs,  
15          rebuilding fish stocks.

16                   There's some cooperative fisheries  
17          research required for RED SNAPPER management in  
18          the Gulf of Mexico, talks about fisheries  
19          information and the use of that in stock  
20          assessments, includes some overfishing versus  
21          depleted terms, and asks us to speed up our  
22          processing of disasters. So a rather broad bill

1 as well, but has not been introduced.

2 And then more on the theme of  
3 recreational fisheries in RED SNAPPER.  
4 Representative Graves in the House, Senator  
5 Wicker have introduced the Modernizing  
6 Recreational Fisheries Management Act. It's  
7 focused primarily on ACL flexibility.

8 They don't contain RED SNAPPER  
9 specific provisions. They just in general look  
10 at flexibility for all recreational fisheries,  
11 specifically through ACL exemptions and other  
12 modifications to the ACL requirement.

13 It also includes language to stimulate  
14 partnerships with states to develop best  
15 practices for recreational fishing registries,  
16 requires additional studies on the MRIP Program  
17 -- the Marine Recreational Information Program --  
18 and requires a study and periodic review of South  
19 Atlantic and Gulf of Mexico mixed fisheries,  
20 looking at the allocations.

21 There are several differences between  
22 the House and the Senate bill, and again, I think

1 we've highlighted those in some of the  
2 supplemental material we've posted on you all's  
3 site.

4           The Florida Fisheries Improvement Act,  
5 introduced by Senator Rubio, provides additional  
6 focus on again RED SNAPPER. It talks about  
7 modifying rebuilding timelines, looks at ACL  
8 exemption for transboundary stocks again,  
9 probably Florida spiny lobster, adjusts timelines  
10 for disaster requests to make our response  
11 quicker, and requires a report facilitating  
12 greater incorporation of information from non-  
13 federal government sources into fisheries  
14 management decisions.

15           It also has some South Atlantic, Gulf  
16 of Mexico provisions for us to study and  
17 periodically review fishing allocations in those  
18 two council jurisdictions.

19           The RED SNAPPER Act, as you might  
20 guess, is focused on red snapper. That's an  
21 acronym. I would encourage you to see what that  
22 really means, they came up with quite a long

1 title to get the RED SNAPPER Act as the acronym.

2 So as you can imagine, it focuses  
3 primarily on red snapper recreational fishing in  
4 the Gulf, in addition to creating a nine nautical  
5 mile seaward boundary. It includes separate  
6 catch limits for private recreational, charter,  
7 and commercial sectors.

8 The bill allows the states to  
9 determine their respective fishing seasons for  
10 private recreational anglers within an extended  
11 area beyond the nine miles out to approximately  
12 25 nautical miles.

13 However, the bills don't change the  
14 Magnuson-Steven Act requirement for annual catch  
15 limits and accountability measures. So it's  
16 unclear how the state seasons versus any federal  
17 season would be coordinated.

18 It also creates a requirement for the  
19 Secretary to certify state recreational fishing  
20 surveys, again to replace the MRIP program. But  
21 very red snapper focused.

22 Another great acronym, the Give Our



1 Fishermen Immediate Snapper Help bill was  
2 introduced by Representative Weber of Texas.  
3 Again, focused on red snapper fishing primarily,  
4 well not primarily, only for the 2017-2018 season  
5 by setting a 62 day recreational season starting  
6 July 1st.

7 So we've gone from kind of the broader  
8 Magnuson Act reauthorization from Representative  
9 Young to something that's fairly focused here.  
10 So I'm going to stop on Magnuson and see if there  
11 are any quick questions, and then I'm going to  
12 plow ahead with regulatory reform. And I should  
13 have said any quick questions I can answer.

14 CHAIR BEIDEMAN: Bob?

15 MEMBER GILL: You can answer them all,  
16 Alan. Thank you, Madam Chair. Thank you for the  
17 presentation. Recognizing your crystal ball is  
18 cloudy and badly cracked, would you proffer an  
19 estimate of whether or not we'll see a  
20 reauthorization of Magnuson at the end of the  
21 session?

22 MR. RISENHOOVER: By the end of the

1 session, you mean the end of next year. I think  
2 it's possible. Early on this year the committee  
3 folks were talking about taking the House bill to  
4 the Floor this fall. Obviously that hasn't  
5 happened yet. The Senate hasn't introduced any  
6 separate comprehensive bill.

7 Senator Sullivan from Alaska has held  
8 several regional-based hearings around the  
9 country. Kodiak, I think it was maybe Kodiak --  
10 another place in Alaska. So I think that the  
11 Senate folks are starting to think about that.

12 So I don't think it will happen, as I  
13 said, by the end of the calendar year. But I  
14 think, you know, next year there is kind of a  
15 drive for some of these recreational and red  
16 snapper issues to be addressed, as well as some  
17 other things on rebuilding, and ACLs more  
18 broadly. So that was my cracked and foggy  
19 answer.

20 MEMBER HAMILTON: Liz?

21 MEMBER HAMILTON: So I think you said  
22 this, but I wanted to check in. I mean, there's

1 a real theme going on with the red snapper stuff.  
2 And is it your sense that if a Magnuson  
3 reauthorization goes through, there will be a,  
4 and I don't know the meaning of what a fix looks  
5 like, I'll leave that up to the rest of you.

6 But that we not continue to see red  
7 snapper bills coming through. I mean, is there  
8 an opportunity to fix whatever the problem is  
9 from all these various bills in Magnuson?

10 MR. RISENHOOVER: All right. So I  
11 think there's several opportunities. One is at  
12 the Gulf Council level. Can they come up with a  
13 regional jurisdiction, regional allocation for  
14 red snapper that everybody agrees with in the  
15 Gulf?

16 Or are we going to see a specific fix,  
17 a bill, you know, the RED SNAPPER Act for  
18 example, that fixes it legislatively. Or are we  
19 going to see something broader that may affect  
20 all recreational fisheries? Because while red  
21 snapper may be the focus right now, other  
22 fisheries maybe have other recreational

1 fisheries, may have similar characteristics that  
2 Congress wants to address.

3 MEMBER HAMILTON: Or other  
4 characteristics. But to make Magnuson a better  
5 tool on the sport side, and as encompassing and  
6 working as it is on the commercial side.

7 MR. RISENHOOVER: Right. And there's  
8 been a lot of talk about we need to manage  
9 recreational fisheries different. We don't want  
10 them to be over-fished; we don't want them to be  
11 subject to over-fishing. But perhaps our goals  
12 of how we manage those fisheries should be a  
13 little different than efficient extraction of  
14 poundage that the recreational side is interested  
15 in.

16 All right. And I'll ask Heidi to tee  
17 up the reg reform thing. And we can come back to  
18 Magnuson again. I've got a couple experts in  
19 here that's memories are still working.

20 So let's talk about something really  
21 exciting, regulatory reform. And thank you,  
22 Heidi. Again, I'm going to have to prop myself

1 up with some notes on this.

2 So, I'm going to walk through this  
3 real quick, just to give you an overview. It's  
4 an ongoing effort; it's something that's going to  
5 be going on into the future. So we'll have more  
6 time to talk about it in the future.

7 But, I wanted to start out with the  
8 MAFAC transition document that you all sent us in  
9 December of 2016. And as I discussed with a  
10 couple of you last night, MAFAC was very  
11 prophetic in what it recommended there. And Bob,  
12 I think I got that word right, right? Prophetic.

13 So, in the first 100 days, you  
14 suggested that the Assistant Administrator for  
15 Fisheries conduct a regional stakeholder-driven  
16 process to look and see if we had outdated,  
17 ineffective, or unnecessarily restrictive  
18 regulations with regard to fisheries.

19 So, obviously, the new administration  
20 saw the MAFAC recommendation and thought: these  
21 guys are on to something. How do we do that  
22 across the government, not just with fisheries?

1           So what you have seen, and I think  
2           you've probably seen most of these, are a series  
3           of executive orders, a number of executive orders  
4           that address the regulatory reform agenda this  
5           administration wants to push.

6           So it follows up directly on what  
7           MAFAC said. So I'm going to talk primarily about  
8           two of those executive orders today, the  
9           Executive Order 13771, reducing regulation and  
10          controlling regulatory costs, and Executive Order  
11          13777 which forms a task force in each department  
12          to look at those regulatory reform agendas.

13          I'm going to talk about what we're  
14          doing and next steps that we'll be taking within  
15          the Agency, and in particular in concert with the  
16          councils to address those.

17          So I can read my notes. So again, the  
18          goal of this is: how do we get at those  
19          regulatory burdens and relieve those from the  
20          public? So, a comprehensive review of  
21          regulations under the 13771, and I'll give you  
22          some more details, and then the task force.

1           But as I mentioned, there's a number  
2 of others that talk about regulations, in  
3 particular in speeding or improving our  
4 environmental compliance processes in terms of  
5 infrastructure projects, industry projects, and  
6 other things.

7           So I'll talk a little bit about this,  
8 but really these other EOs, I think we've got a  
9 link on your website to them if you want to go  
10 look at them. But I'm really going to  
11 concentrate on 13771.

12           So again, the goal is to eliminate --  
13 under this executive order -- two regulatory  
14 actions for each new significant regulatory  
15 action to provide an opportunity for us to  
16 identify and repeal outdated, ineffective, and  
17 unnecessary regulatory actions. Again, they're  
18 parroting the MAFAC language there.

19           So, a couple things to understand on  
20 this. Some regulations need to be offset, some  
21 don't. So the regulations that need to be offset  
22 on the two-for-one category -- so you have to

1 repeal or replace, or repeal two regulations to  
2 issue a new one -- the ones we have to do that  
3 for are significant ones.

4 And significant refers back to another  
5 executive order that's been around for a long  
6 time, 12866, that talks about what a significant  
7 regulation is, and I can get into that in a  
8 minute.

9 So this executive order sets up these  
10 new regulations and then regulatory actions,  
11 deregulatory actions. And deregulatory actions  
12 can be any regulation. They don't have to be  
13 these significant regulations per that old  
14 executive order.

15 So what we are doing internally is  
16 we're, in effect, kind of creating a ledger or a  
17 bank account that for every significant reg we  
18 put forward, we have to repeal two. We also then  
19 have to look at the cost of that significant  
20 regulation and offset the cost of that with our  
21 deregulatory actions.

22 So again, the cost cap is trying to



1 get at that: how do we reduce the cost of  
2 regulations on the public? So when we're doing  
3 costs right now, you know, any reg we have going  
4 through we have a regulatory impact analysis that  
5 has an economic assessment with it.

6 We do that under this OMB Circular A-4  
7 which if you're not sleeping well at night is  
8 your tool. And so I won't go into that, but  
9 we're hoping the current economic analysis that  
10 we're doing now will suffice for these executive  
11 orders.

12 So we don't have to create a whole new  
13 economic analysis process to address that. So  
14 we're using that as our ability to look at costs.  
15 And I think, as you know, particularly in  
16 fisheries regulations, there's some things that  
17 require additional burdens on the industry -- you  
18 know, you've got to use the specific year and a  
19 specific area during a specific time of the year  
20 -- but it also may relieve some things in the  
21 same reg.

22 So we're going to make this area

1 smaller but we're going to establish this area.  
2 You got to use a different mesh size, you got to  
3 use circle hooks here, you got to use J hooks  
4 there. So on these bundle rules, we can look at  
5 those and say by and large, this is a  
6 deregulatory action, counts for that two-for-one,  
7 and it offsets some costs.

8 And sometimes we'll be able to  
9 monetize those costs, sometimes we may not be  
10 able to monetize those costs. So we would leave  
11 it as a deregulatory action.

12 The cost offset is an agency-wide  
13 requirement. So it's just not fisheries  
14 regulations in one council, you know, being  
15 offset; it's at the department level. So this  
16 ledger and this bank account I'm talking about is  
17 being done at the agency level.

18 The geographic sector similarity  
19 provision is that you should try to take, where  
20 you can, costs and benefits, costs or cost  
21 reductions in the same sector to offset those.

22 So OMB has issued a series of guidance

1 that we've been working through to try and  
2 implement these to try to figure out how do these  
3 executive orders relate to our business, the  
4 fisheries management one.

5 And it talks about there's some  
6 expressly exempt actions under these executive  
7 orders, and those are things like military,  
8 national security, foreign affairs -- what you  
9 would expect -- emergency actions where they're  
10 critical for health, safety, financial, other  
11 things.

12 So if we do have, you know, an algal  
13 bloom, harmful algal bloom, we don't have to  
14 offset the cost of that. That's for public  
15 safety, so it doesn't apply.

16 And it doesn't prevent us from issuing  
17 significant rules. Again, it just allows us, if  
18 we are going to issue those, that we do need to  
19 offset them.

20 So in the case of Magnuson Act, the  
21 guidance talks about routine fisheries actions.  
22 Initially, we looked at this and thought, okay,

1 when we have a quota go up, can we bank the  
2 costs, or I mean, the benefits associated with  
3 that increased quota.

4 So if the quota goes up and fishermen  
5 are able to harvest more fish and it's worth a  
6 million, do we get to count that? The answer is  
7 no, and that makes sense because if the quota  
8 goes down, you know.

9 So these routine actions we're trying  
10 to define as ones that only affect when the quota  
11 switches. So the goal here is, you know, the  
12 resource may go up and down, that's fine. We can  
13 issue those rules.

14 What we're trying to get at is: how do  
15 we drive the innovation to reduce regulations on  
16 the industry to increase the benefits? So for  
17 example, maybe you can open new areas that were  
18 closed because you have a technology that  
19 captures whatever the information was you wanted  
20 in that area.

21 So some of the video recording, if you  
22 don't have observers, maybe you have a video

1 camera. That allows you to go into a higher  
2 bycatch area. That area may be closer to shore,  
3 more productive. Can we open that up and offset  
4 that as some costs?

5 So we're still working with the Office  
6 of Management and Budget on some of these  
7 definitions on what regs fit into what  
8 categories. And hopefully we can move forward  
9 with some regulations as we have in the past.

10 So the other executive order, the  
11 13777, creates this task force at the department  
12 level that I mentioned. And those tasks force at  
13 each department are responsible for ensuring that  
14 the reg reform agenda is moving forward, and that  
15 your cost savings are higher than your costs with  
16 the regulations going forward, and you're meeting  
17 that two-for-one requirement.

18 So, for the Department of Commerce,  
19 that's constituted at the department level. It's  
20 chaired by one of the General Counsel at the  
21 Department, right now, NOAA's acting General  
22 Counsel is our representative to that task force.

1 All right, so when you think of the  
2 goals of these EOs which is to look at your  
3 regulations, get rid of ones that aren't  
4 necessary or ones that are burdensome or  
5 inefficient, you know, that's something we really  
6 do through the council process.

7 We don't issue a reg and walk away  
8 from it for ten years. The Council probably  
9 looks at that fishery every year, will issue new  
10 specs on a one to two to three year timeframe.  
11 Also, the industry is always working to: how do  
12 we better use that resource?

13 So we have, we think, already met a  
14 lot of the requirements of this EO for public  
15 review of our regulations through the council  
16 process. Now, we also need to think about it in  
17 terms of the Endangered Species Act, the Marine  
18 Mammal Protection Act, and perhaps other  
19 regulations we issue.

20 But with the council process, I think  
21 we've got a really good, built-in regulatory  
22 review. What we need to do is just stimulate

1 those councils to be thinking along the lines of:  
2 where can we lift regulations that may be  
3 burdensome to the industry?

4 Also, the Magnuson Act and some other  
5 statutes we operate under already have review  
6 processes. So when OMB comes and says well, you  
7 know, you need to have public hearings on all  
8 your regulations, well under the Magnuson Act we  
9 have a number of public hearings at the council  
10 level, let alone when it gets here.

11 So we're already doing a lot of what  
12 the administration wants on this through public  
13 review. We also look back through the Regulatory  
14 Flexibility Act. You've probably heard of our  
15 610 reviews.

16 We look at any reg that's seven years  
17 or older and do a public review. I think that's  
18 going to be coming out fairly soon for this year.  
19 So we do that.

20 The lapse in catch share requirement  
21 in the Magnuson Act requires that you've looked  
22 at your catch share program, you know, every five

1 to seven years depending on when that started.  
2 Listed species under the Endangered Species Act,  
3 we have a five year status review.

4 We may not make all of those on a five  
5 year basis, but we have some of those in place  
6 already. And so then some other policies we've  
7 issued recently, such as the allocation policy,  
8 includes some additional requirements for review  
9 of allocations and triggers that would determine  
10 whether you need to look at your allocation.

11 So a little bit on what we've done so  
12 far. And I think most of you saw the Federal  
13 Register notice we put out in I believe it was  
14 August requesting comments across all these  
15 executive orders.

16 Again, the executive orders looked at  
17 regulations in general, they looked at  
18 regulations associated with infrastructure,  
19 regulations associated with environmental review  
20 and other things.

21 What we tried to do is combine those  
22 with the National Ocean Service into a single



1 request saying, okay, for all of these executive  
2 orders, look across all our regulations and tell  
3 us what you think.

4 We got about 160 comments. A lot of  
5 them were supportive of what we had done. There  
6 were some that weren't, as you would imagine, and  
7 some were council-specific, some were ESA-  
8 specific, some were MMPA-specific, there were  
9 comments on aquaculture, how can we streamline  
10 and improve that process.

11 So based on that, we're moving on with  
12 how do we manage these comments as well as an  
13 overall regulatory review. We've put together a  
14 headquarters working group that's being led out  
15 of Jennifer's Office of Policy and Heather Sagar  
16 in the back is leading that effort to look across  
17 the Agency on: where do we need to review our  
18 regulations, and then what are the potential  
19 outcomes of doing that?

20 So we've created and implemented a  
21 cost worksheet, you know, kind of where are we  
22 with our significant rules, generating costs, and

1 where are we with our de-regulatory rules,  
2 generating cost savings and starting to track  
3 those, working with OMB to make sure our  
4 definitions are good to start meshing those  
5 together.

6 And if you remember yesterday, the  
7 Admiral put some of those results up where he had  
8 that one slide where he talked about \$100 million  
9 in savings and listed some specific actions.

10 So that's what we're trying to do. We  
11 don't have a public interface for looking at this  
12 yet. The Department's Regulatory Reform Task  
13 Force will at some point report to the President  
14 on how we're doing. But \$100 million is roughly  
15 what we're looking at.

16 One of the regulations we had up there  
17 we've been working with OMB on, and we don't  
18 think we're going to get to count as a cost  
19 savings. But anyway, we're trying to make sure  
20 that we have that either you want to think of it  
21 as a positive balance of negative costs, right?  
22 If you're an economist, that's how they think.

1                   So, we're looking at all our  
2 regulations from a headquarters perspective.  
3 Anything that we do as an agency, and I think we  
4 have some national regulations on exempted  
5 fishing permits. So we're going to be looking at  
6 those.

7                   Protected resources, habitat  
8 conservation, and our International Affairs  
9 Office are looking at their regulations to see  
10 well, which ones can we look at that maybe need  
11 updated, are they still necessary, or are they  
12 ineffective.

13                   And then finally, we're starting a  
14 review with the councils where we have sent them  
15 the comments we received on our wider request so  
16 that they can start looking at: do they believe  
17 those need to be addressed based on stakeholder  
18 comments?

19                   And I think as you see the councils  
20 going forward, you're going to start seeing  
21 agenda items related to this Executive Order  
22 13777. In fact, I think the South Atlantic

1 Council is having one next week where they're  
2 going to set aside an hour and invite public  
3 comments specifically to meet the demands of this  
4 executive order, in addition to their normal  
5 processes.

6 So I think that's going well because  
7 we really, with the councils, have a built-in  
8 system. So a couple of examples of what we're  
9 looking at as counting toward cost savings.

10 In the Atlantic Highly Migratory  
11 Species Fishery Management Plan, we had the  
12 ability for people to have a single permit that  
13 would allow them to commercially fish and  
14 recreationally fish.

15 Based on some Coast Guard regulations,  
16 they're required to get safety gear, and all  
17 those boats in that category would have had to  
18 have that safety gear. So simply what we're  
19 trying to do is split those out. People that  
20 want a commercial permit can have that commercial  
21 permit, and they have to meet those safety  
22 requirements.

1           If they don't, they can fish  
2           recreationally; they don't have to meet those  
3           requirements. So we've alleviated that  
4           requirement, kind of a Coast Guard requirement,  
5           form a large number of those recreational boats,  
6           and we're using that as an example of how we're  
7           saving costs or making sure that, you know, this  
8           as an ineffective reg, how do we make it more  
9           effective?

10           Some other things you may hear around  
11           the country of, you know, some of the habitat  
12           amendments, some of the spatial management  
13           requirements we have, do we need those to  
14           effectively manage the species as the stock  
15           rebuilds, or what. Do we have gear technologies  
16           that we can reach the same conservation goal  
17           without as much regulation.

18           One additional thing I'll mention,  
19           this one Executive Order, 13783 on promoting  
20           energy independence, the Department recently  
21           released its report on that. And there's a  
22           number of NOAA fisheries related items in there,

1 not so much Magnuson.

2 It talks about EFH, Essential Fish  
3 Habitat consultations, and how do we do those  
4 more effectively and quicker? There are some  
5 results in that outlining how we want to improve  
6 our Marine Mammal Protection Act issuance of  
7 letters of authorization and incidental  
8 harassment authorizations.

9 And our goal is trying to reduce those  
10 by 25 percent so that it's quicker, more  
11 responsive to the industry.

12 Similarly, under the Endangered  
13 Species Act, how do we do our Section 7  
14 consultations and biological opinions more  
15 effectively and more quickly so that the industry  
16 that's affected -- either the fishing industry or  
17 an infrastructure project -- has more certainty  
18 that we will get those done on a timeline that  
19 then doesn't hold up that project? So that's one  
20 deviation from the other EOs.

21 So, I'm going to end now with, you  
22 know, what are we doing next? And I think most

1 of you will be participating in this at some  
2 level from the Council or as a member of the  
3 public, is our headquarters office is trying to  
4 do an initial review by this December on what  
5 regulations may need to be changed.

6 Some of those national level  
7 regulations that we see could be changed. We're  
8 going to try and look at other regulations and  
9 get those reviewed by July. We're working with  
10 the Councils to identify what they think need to  
11 be done with their regulations, also by July of  
12 next year.

13 So that's kind of the themes that are  
14 in place that may not have a review associated  
15 with them. So the councils are going to continue  
16 their work on their fishery management plans and  
17 their regulatory amendments and their annual  
18 specifications as part of this ongoing process I  
19 was talking about that I think -- where we really  
20 meet the intent of these executive orders just  
21 because the process we have.

22 What we need to do is lean into: how

1 do we make sure that if you have, you know, three  
2 layers of regulation to meet the same goal, you  
3 get rid of two layers of that and still meet the  
4 same goal to help the industry.

5 And then also, you know, Endangered  
6 Species Act, Marine Mammal Protection Act, what  
7 do we do with aquaculture, how do we improve that  
8 process with other agencies to streamline those  
9 permits as well?

10 And with that, I will stop again and  
11 see what questions may be out there.

12 CHAIR BEIDEMAN: Bob?

13 MEMBER RHEAULT: Bob Rheault. So,  
14 quite often, regulatory burdens don't come in the  
15 form of a regulation but what I'm finding more  
16 often come in the form of a consultation.  
17 Essential fish habitat or protected resources  
18 will come out with an interpretation that  
19 threatens to eliminate half of New York's  
20 aquaculture output.

21 How are we going to address those  
22 sorts of regulatory burdens?



1           MR. RISENHOOVER: So, those burdens are: is  
2 that necessary? You know, is it necessary to  
3 eliminate half of New York's EEZ or whatever you  
4 mentioned. Or can we finer scale that, or can we  
5 have pilot projects. So part of it is timing of  
6 the consultation needs to improve as well as the  
7 effectiveness of that.

8           So I think I really focused more on  
9 timing on a lot of this. But if you go back to  
10 those executive orders, it talks about  
11 ineffective, inefficient. And so I think that  
12 gets at what you're talking about on: how do we  
13 not only shorten the time of our consultation,  
14 but have the information to make it a better  
15 consultation as well?

16           And one idea on that that's come up is  
17 some more programmatic sort of things. So it's  
18 not a consultation on, you know, ten different  
19 projects throughout New York; it's a consultation  
20 on that issue of New York, so that maybe you  
21 don't have to have a full consultation on  
22 everything.

1           So there's a lot to, a lot of work to  
2 do on this, just on the reg side as well as on,  
3 as you're talking, how do you make them more  
4 effective or less burdensome?

5           MEMBER RHEAULT: Or sometimes it's a  
6 management issue of reining in some well-meaning  
7 individual with an anti-aquiculture agenda who  
8 thinks that he has a better understanding of the  
9 intent of the regulation. Just throwing that out  
10 there as a potential possibility.

11          MR. RISENHOOVER: Well, and again,  
12 part of this is that stakeholder-driven process  
13 -- we're hearing from the stakeholders whatever  
14 issue may exist.

15          MEMBER OKONIEWSKI: Yes, I wonder if  
16 there's going to be a look at the costs involved  
17 in the time it takes to actually put a regulation  
18 into effect. I mean, in some cases on the West  
19 Coast it takes, you know, a decade.

20                 So I mean, and they're going over and  
21 processing a lot of the same items over and over  
22 again. So it requires staff dedication, and in

1 some cases staff we don't have, which just drags  
2 the whole process out.

3 But as much as I like the direction  
4 this is going, in many respects, I also think  
5 that you have to look -- Bob brought up an  
6 excellent point. There's manifestations of a  
7 regulatory process that aren't directly the  
8 regulation themselves that kind of take on  
9 aspects of cost, time, and delay in many cases.

10 And I think you have to look at the  
11 whole package, I guess. Implementation itself  
12 is, if it takes a long time to get through a  
13 process, it adds a huge cost burden, and the  
14 economic effects impact on the community, or  
15 fishing community, are sometimes pretty enormous.

16 MR. RISENHOOVER: And so I think part  
17 of that is -- you know, and I know there's been  
18 some issues on the West Coast -- is staffing,  
19 right? And so are all of those regulations that  
20 the council recommends necessary? Is there a  
21 priority to those that we can use?

22 And then internally, you know, it's

1 kind of a systems analysis of how many levels of  
2 review do we need for each item, or can we reduce  
3 that. And we've looked, you know, over time.

4 The regulatory streamlining initiative  
5 of ten years ago in SF was well, do we need  
6 everything reviewed by my office at headquarters.  
7 And the answer to that was no. So we're trying  
8 to make some of those process improvements as  
9 well.

10 MEMBER OKONIEWSKI: In some cases,  
11 many cases, in fact, on the west coast it's  
12 actually the industry that's pushing for the  
13 regulation because we are burdened by regulations  
14 from the past that never got removed, et cetera,  
15 et cetera.

16 But I would question whether it's --  
17 we can always point to the staffing. But I think  
18 in some cases, it's management of the staffing as  
19 well, and the tasking that comes out from the  
20 upper echelons, I guess.

21 MR. RISENHOOVER: Other thoughts? And  
22 again, I'll be around a while. If you have a

1 specific question, again, we hopefully are giving  
2 you some links to all of these that you can --

3 CHAIR BEIDEMAN: Julie?

4 MR. RISENHOOVER: And as we get  
5 reports, we'll get those out.

6 MS. BONNEY: So, one other thing that  
7 I'm finding is I keep getting queried from the  
8 Alaska Region about Paper Reduction Act. So  
9 they're asking about, you know, like, information  
10 that the industry needs to provide and whether  
11 it's still pertinent. And I didn't really see  
12 that, and so that seemed like another EO. I  
13 don't know if that's part of the same package.

14 MR. RISENHOOVER: I don't think that's  
15 this -- reporting requirements aren't a specific  
16 part of the EO that I can think of. They may be.  
17 But I think that's, you know, if we're collecting  
18 information, part of the normal Paperwork  
19 Reduction Act process is those come up for review  
20 over some period of time. So you may just have  
21 some five year PRA things expiring.

22 But again, that's something -- you

1 know, if we're not using the information, is it  
2 because it's not necessary anymore, or are we  
3 just collecting it because the industry thinks  
4 it's important, or it's how it's used for  
5 management. Or you know, we've had some efforts  
6 to reduce sending paper. Can we send that  
7 electronically now? In some cases, yes; some  
8 cases, no.

9 All right, I'm going to say I hit my  
10 45-minute mark and sit down.

11 CHAIR BEIDEMAN: Excellent. Well,  
12 thank you very much for that. And you said you  
13 would be hanging around a little while. So, and  
14 you have some staff here to help. Any more  
15 questions? I'm dying to know what that acronym  
16 stands for, so I'm resisting. The red fish one?

17 PARTICIPANT: RED SNAPPER.

18 CHAIR BEIDEMAN: The RED SNAPPER one.  
19 But that's okay. So, next, we're going to the  
20 State Directors. And you can decide amongst  
21 yourselves, your little cabal over there, who  
22 goes first.

1                   MEMBER DONALDSON: Thank you, Madam  
2 Chair. I've got a couple of issues in the Gulf.  
3 First is budget. We're working with, under the  
4 new paradigm that less is more. Our data  
5 programs have been level funded for, as well as  
6 Bob and Randy's, for a number of years. And it's  
7 getting more and more difficult to accomplish the  
8 critical work that we're doing.

9                   We have been working with Paul and  
10 Brian to help reduce or eliminate the  
11 administrative fees. And that would alleviate  
12 some of these issues, not all of it. But it  
13 would -- and I do appreciate the efforts of  
14 trying to find some funding in these difficult  
15 times.

16                   And then we also are continuing our  
17 efforts of working and going up and talking with  
18 Congressional Staffers and emphasizing the  
19 importance of the data collection activities and  
20 the need for funding to continue so we can  
21 continue to do effective management and stock  
22 assessments and whatnot.

1           Another issue that we've been working  
2           on is aquaculture. Both Paul and Mike mentioned  
3           it yesterday. We're in our second year of oyster  
4           aquaculture activities. We sent out an RFP  
5           earlier in the year, received about 20 proposals  
6           and are in the process of reviewing and making  
7           decision on which of those will be funded.

8           We're hoping to get money out in early  
9           2018 to continue work on that. The first year  
10          projects, most of them are either completed, or  
11          close to be completed. And we're putting  
12          together a general session in our March 2018  
13          Commission Meeting, where they will be presenting  
14          their findings from those projects, and looking  
15          forward to that.

16          Also, as Paul mentioned, we're working  
17          on the regional pilot projects with the other two  
18          commissions, \$500k to each commission. The RFP  
19          is going out Friday. And hopefully, we'll begin  
20          work in early 2018 on that, and looking forward  
21          to, at least in the Gulf, looking forward to  
22          seeing if we can't get some clarity on the whole



1       permitting process in the Gulf of Mexico and how  
2       that's going to work.

3                   And then, of course, I've got to  
4       mention RED SNAPPER. I think I would get fired  
5       if I didn't. Most -- in kind of the recent  
6       activities, NOAA asked each of the states if they  
7       were interested in submitting an EFP, an  
8       Exempting Fishing Permit, for red snapper data  
9       collection.

10                   Most of the states have submitted  
11       something. But in order for those EFPs to work  
12       and be effective, there needs to be some decision  
13       on allocation amongst the states. That has not  
14       happened in the past. There seems to be some  
15       interest in reexamining that.

16                   Later in mid-December, I'm meeting  
17       with our state directors to talk about that. And  
18       I'm hopeful that we can come to some agreement  
19       and move forward with this issue and see if we  
20       can't come to some agreed upon solutions for RED  
21       SNAPPER so we're not talking about RED SNAPPER  
22       every time we get together.

1           But those are the main areas that  
2 we're focusing on, and will be focusing on in  
3 2018. And I would be glad to answer any  
4 questions.

5           MEMBER BEAL: Microphone's on. Maybe  
6 I'll just keep going. Thank you, Madam Chair.  
7 I'll hit seven highlight areas from the Atlantic  
8 Coast fairly quickly. And again, you know, happy  
9 to answer any questions afterwards.

10           There's some common themes, obviously,  
11 with what Dave just talked about, the budget and  
12 surveys and some other things. But along the  
13 East Coast, this year, coming up in 2018, Forage,  
14 Fish Management is going to be an important  
15 issue.

16           That's, you know, sea herring,  
17 mackerel, Atlantic herring, I mean, menhaden.  
18 Menhaden is managed by ASMFC, and that's a big  
19 ticket item right now for us. You know, there's  
20 one large harvesting facility in Virginia, and  
21 it's a very economically important facility.

22           But there's ecological services

1 provided by menhaden, and striking the right  
2 balance between the industry and the ecological  
3 services is a tough thing for the states to  
4 achieve.

5 And that we're moving toward what we  
6 call ecological reference points which are going  
7 to take into account the biology of menhaden as  
8 well as all the predatory demands and ecological  
9 services that menhaden provide.

10 And we hope to have those reference  
11 points completed by 2018, and then we can  
12 recalibrate the fishery at that time. But it's  
13 going to be a lot of lead-up work this year to  
14 meet that 2019 timeline.

15 Allocation is always a big deal along  
16 the East Coast. We have a number of fishery  
17 management plans at ASMFC that allocate state-by-  
18 state quotas on the commercial side. And there's  
19 some actually on the recreational side, too,  
20 which is interesting.

21 But for example, Atlantic striped bass  
22 uses data, commercial data from 1970 through 1979

1 to allocate the commercial quotas. And that's  
2 getting, you know, 40 plus years behind us now.  
3 And is that the right thing, is that appropriate?  
4 You know, how do we modify those quotas.

5 Anytime you modify allocation, you  
6 create winners and losers -- another thing that's  
7 not easy to do. But the states are going to have  
8 to work through that, come up with some creative  
9 approaches to allocating the species up and down  
10 the East Coast.

11 And we manage a number of those  
12 species in combination with the Mid-Atlantic and  
13 New England Council, and it's a pretty cumbersome  
14 process when all the, you know, states have to  
15 agree and we have to get together with the  
16 councils and come up with one coherent plan  
17 between state level and federal level management.

18 So allocation is going to take a fair  
19 amount of bandwidth over, you know, 2018 and  
20 beyond.

21 Funding, I think I'll just echo what  
22 Dave said earlier. You know, we're level funded.

1 And that, you know, NOAA Fisheries has been very  
2 generous, and I sincerely mean that, with funding  
3 for a number of the near shore and interstate  
4 surveys from NEAMAP and CEAMAP and horseshoe crab  
5 and a number of other things we manage.

6 So, we've been able to piece those  
7 surveys together. But as everyone here knows all  
8 too well, you know, the cost of doing that at-sea  
9 work is going up very quickly. And keeping, you  
10 know, even with the generosity of NOAA Fisheries,  
11 there's, it's not a bottomless pit of money.

12 So we, you know, it's a struggle to  
13 figure out how to keep those surveys going and  
14 make sure we are spending the, you know, limited  
15 dollars on the priority work that needs to be  
16 done. And that's a struggle.

17 No one wants to see any time series of  
18 data, you know, halted. But, you know, those are  
19 the tough decisions that may face some of the  
20 states, and the East Coast in the near future.

21 You know, one of the examples there,  
22 while I'm speaking, is in the northern shrimp

1 stock which is a species that's in the Gulf of  
2 Maine, you know, New Hampshire, Massachusetts and  
3 Maine harvest those animals.

4 Due to the warming temperature of the  
5 water in the Gulf of Maine, that fishery's been  
6 closed for the last five years. And you know,  
7 should we continue to survey a stock that's, it's  
8 \$120,000 a year to run the survey.

9 Does it make sense to keep running  
10 that survey when there's really, unfortunately,  
11 no signs of that stock rebounding right now? And  
12 those are the tough decisions that I think the  
13 east coast states are going to have to face  
14 sooner rather than later.

15 The next few items all deal with data.  
16 The east coast states recently took over the site  
17 intercept portion of the MRIP program. So the  
18 states all conduct the interviews at the docks,  
19 and on the beach, and boat ramps with the  
20 fishermen as they're coming back from their trips  
21 and ask, you know, what did you catch, can I  
22 measure your fish and those sorts of things.

1           So states just completed their, or are  
2           about to complete their second year on that along  
3           the east coast. It's a big shift from how things  
4           were being conducted. It's going, I think it's  
5           going very well.

6           We've been able to collect more  
7           samples at the same price that a contractor was,  
8           you know, achieving in the past. So that's good  
9           news. I think there's growing confidence I guess  
10          is the best way to put it, in that data in that,  
11          you know, the fishermen seem to be more  
12          comfortable seeing states with a North Carolina  
13          Department of Natural Resources or Division of  
14          Marine Fisheries logo on their shirt versus an  
15          RTI Contracting. Who knows what RTI is.

16          But they know, you know, their local  
17          state fish management agency. So, you know,  
18          that's going pretty well. Along the East Coast,  
19          we still have a bit of a disconnect between what  
20          the MRIP program collects and the way the  
21          managers want to use that data at times.

22          The managers want to mine very deeply

1       into that data at a resolution it really wasn't  
2       designed for, and that creates some problems.  
3       And, you know, the hard part is how do you fix  
4       that.

5                       Do you adjust the recreational data  
6       collection program to the resolution that you  
7       want the data, or do you adjust your management  
8       program to, you know, to coincide better with the  
9       data that you have on hand? And that's a, again,  
10      a difficult thing the states are going to have to  
11      work through.

12                      We're moving forward with a number of  
13      electronic reporting activities along the East  
14      Coast, working with the councils, through the  
15      Atlantic Coastal Cooperative Statistics Program,  
16      ACCSP which is essentially the FIN Program on the  
17      East Coast.

18                      The Mid-Atlantic is switching all the  
19      for-hire vessels over to an electronic VTR mid-  
20      March. Then New England Council may follow suit  
21      soon thereafter. South Atlantic as well.

22                      So, we're slowly moving toward



1 mandatory electronic reporting for some of the  
2 fisheries. Seems to be fishermen for the most  
3 part are embracing that. It's a change for doing  
4 business for them, and it takes a little while.

5 But if we can, you know, the  
6 transition is tough sometimes where there's a  
7 requirement for an electronic VTR in one fishery  
8 but you still have to do your paper VTR in  
9 another fishery, and the work is a bit redundant  
10 sometimes.

11 So, going from, you know, completing  
12 that transition is tough, but I think we're  
13 heading in the right direction and a number of  
14 fishermen are helping us out with that  
15 transition, and it should be good.

16 The other activity, the last activity  
17 on data is FDDV which is Fishery Dependent Data  
18 Visioning, which is something that the ASMFC and  
19 the Northeast Region, GARFO, are working together  
20 on looking at: overall, how are we going to  
21 collect fishery-dependent data in the future.  
22 How are we going to warehouse that in one central

1 location through ACCSP and what should that  
2 program look like?

3 You know, overall we've kind of been  
4 doing it piecemeal so far. And the idea is, how  
5 can we pull all of that together and really make  
6 ACCSP the one-stop shop for data along the east  
7 coast? So that's an ambitious effort, but it  
8 seems to be going pretty well.

9 The final thing I'll talk about is  
10 compliance. ASMFC is different from the other  
11 two commissions in that, you know, the states get  
12 together on the east coast and develop fishery  
13 management plans that the states are obligated to  
14 implement.

15 And earlier this year, for the first  
16 time since 1993, the Secretary of Commerce didn't  
17 agree with the ASMFC on one of those findings.  
18 And the Secretary did not find the state out of  
19 compliance. It was a summer flounder  
20 recreational fishing issue in New Jersey.

21 And, you know, that sort of sent  
22 shockwaves through the ASMFC system with concern

1 about what does that mean for the future. Has  
2 the underpinnings of the Atlantic Coastal Act and  
3 ASMFC really been impacted by this, and is this a  
4 trend or is it a one-off situation?

5 And we've had a number of meetings,  
6 the ASMFC leadership, and the Secretary of  
7 Commerce's office. And they're good meetings.  
8 And the Secretary has ensured the states that,  
9 you know, this is not a trend, it's not -- the  
10 underpinnings of ASMFC have not been shaken.

11 You know, what happened in New Jersey  
12 was a very unique set of circumstances that led  
13 to that decision. Each of the future non-  
14 compliance decisions, if and when they come up,  
15 will be handled on a, you know, one-by-one basis  
16 and analyzed on their own merit.

17 So, I think that was the answer that  
18 we wanted to hear. It still is -- you know, the  
19 worry of a precedent is still out there. And,  
20 you know, the Secretary clearly said he's not  
21 going to automatically just side with the states  
22 and the states don't have to comply with ASMFC

1 plans.

2 So I think that was a good message to  
3 hear from where I sit, obviously. But I think  
4 securing that relationship between the Secretary  
5 of Commerce and the east coast states is  
6 something we're going to have to work on quite a  
7 bit over the next year or two.

8 You know, seems to be we're heading in  
9 the right direction, we just have to continue  
10 that conversation. So those are the highlights  
11 from the east coast, and happy to answer any  
12 questions.

13 CHAIR BEIDEMAN: I have a question.  
14 I'm in New Jersey, so, believe me, I've heard  
15 plenty from everybody's opinion on that summer  
16 flounder. But, as for New Jersey, a couple of  
17 species are managed by the legislature, and not  
18 specifically by the Atlantic States like other  
19 fisheries are.

20 So, how does that interplay? I mean,  
21 striped bass and lobster, I believe, are the two  
22 that are specific to the legislature there, which

1 is sometimes functional and sometimes not.

2 MEMBER BEAL: As legislatures are,  
3 right? Well, the state of New Jersey is  
4 ultimately required to comply with striped bass  
5 and lobster plans that are developed through  
6 ASMFC.

7 If the legislature is not functioning  
8 as efficiently as possible, which happens in a  
9 lot of states, their commission, you know, often  
10 gives them more time to work through the  
11 legislative process, and sort of understands that  
12 that takes some time.

13 And should the Commission get to a  
14 non-compliance finding, the Secretary has a six-  
15 month discretionary window where the Secretary  
16 could say, well, technically New Jersey or  
17 another state is out of compliance, but they're  
18 working their way to get back in compliance. And  
19 the Secretary can use that six-month window to,  
20 you know, decide if and when a moratorium should  
21 be implemented.

22 So there is some flexibility in the

1 system, but ultimately the states still have to,  
2 you know, comply regardless of how they regulate  
3 those animals. And, you know, Virginia, the  
4 menhaden fishery's managed through their  
5 legislature down there, which is interesting.  
6 It's the only fishery in Virginia, which is  
7 interesting.

8 But, South Carolina, most of the  
9 fishery management is handled through their  
10 general assembly, and a number of other states  
11 have those same situations. But they all, you  
12 know, given the Commission's flexibility, we  
13 could work with them if they're -- you know, the  
14 intent is to move toward implementation.

15 MEMBER FISHER: Morning. I don't know  
16 about you folks, but I sure wish I would have had  
17 another glass of wine last night.

18 So, there's a few kind of interesting  
19 issues. On the west coast, the most lucrative  
20 fishery is the Dungeness crab fishery. It's  
21 worth about \$180 million a year. Last year we  
22 had 78 whale entanglements that we know of. And

1 about two months ago, we found a baby whale,  
2 humpback, in the mouth of the Columbia with four  
3 Dungeness crab pots on it. So it's not a good  
4 thing. I've seen it on national television about  
5 three times.

6 We had a meeting with a number of the  
7 crab fishermen in trying to figure out what we're  
8 going to do about this. But it's a real issue,  
9 and it's not going to go away.

10 The State of California -- which the  
11 states manage the cod fishery, it's not a federal  
12 fishery -- the State of California was sued by a  
13 number of environmental groups about a month ago.

14 So, we're moving through this trying  
15 to figure out how to solve the problem. Most of  
16 it's happening off of California, but they are  
17 moving up the coast. They come through in early  
18 April. One of the options is to shut the fishery  
19 off before that, or I don't know what else to do.  
20 I mean, the good news is there's more whales, the  
21 bad news is there are more whales. So that's  
22 kind of the issue.

1                   Another issue that's kind of  
2 interesting is, off of the San Juan Islands,  
3 there is a pod of orcas that are not doing well.  
4 Scientists, both Canadians and Americans, have  
5 been working on this. This is part of  
6 U.S./Canada treaty negotiation discussions.

7                   The issue really is that these  
8 particular orcas are targeting large chinook  
9 salmon, most of those over 30 pounds. So, the  
10 options are not obvious. Or the options are  
11 going to be real obvious, because we're either  
12 going to have to shut down the fishery at certain  
13 times, or the State of Washington wants to ramp  
14 up on hatchery production. So it'll be  
15 interesting to see how we move forward in this  
16 issue.

17                   Yesterday, it was mentioned about  
18 winter steelhead and sea lions. It's a real  
19 issue in the Upper Willamette Valley because  
20 winter steelhead are on the list of threatened or  
21 endangered. The probability of them going  
22 extinct has went from six percent to well over 95



1 percent.

2           The issue really is this: when the  
3 Marine Mammal Act was passed, there was about  
4 10,006 California sea lions. We're now up to  
5 over 300,000. Oregon State University just did a  
6 study which is quite interesting. In 1975, they  
7 estimated that pinnipeds and killer whales ate  
8 five million chinook salmon a year. That  
9 estimate now is up to about 31.5 million that  
10 they're eating.

11           Compared with commercial and  
12 recreational harvest over the same period of  
13 time, commercial and recreational harvest was  
14 about 3.6 million salmon a year. We're now down  
15 to about 2.1 million. So we need to do something  
16 about the issue of California sea lions.

17           We're also involved with a dam removal  
18 issue on the west coast, with the Klamath. If  
19 you look at the harvest on the west coast of  
20 chinook, where salmon basically is controlled by  
21 what happens in the Klamath. There were four  
22 dams that were owned by Warren Buffett. Those

1 dams have been -- ownership has been transferred.

2 The states have been in agreement they  
3 will remove the four dams. It's supposed to  
4 start in 2020. With the current administration,  
5 I'm not sure what we're going to do now. So,  
6 it's an issue that is a big deal on the west  
7 coast in terms of how to handle these dam  
8 removals.

9 We talked a little bit about cameras.  
10 We've been involved in the camera review process  
11 for about four years. We have four people in my  
12 office that are reviewing cameras on a daily  
13 basis. We have 32 boats in Alaska with cameras  
14 on them currently. That number will increase in  
15 the future.

16 On the west coast, we have about 56  
17 boats with cameras on them. Long story short, it  
18 works. And it can definitely replace observers  
19 onboard, and hopefully we can get through some of  
20 these issues of retention of film and all those  
21 sorts of things so we get some stability in terms  
22 of so the fishermen know what they can actually

1 do.

2 Another interesting issue is we were  
3 just given \$4 million by the Corps of Engineers  
4 to set up stations on the west, in the states,  
5 for reviewing boats that are recreational boats  
6 that come in with quagga and zebra mussels on  
7 them.

8 Those of you on the east coast know a  
9 lot about this because removal of zebra mussels  
10 and quagga mussels is extraordinarily expensive.  
11 They can block water pipelines, everything. So  
12 the long story short is they're moving west.  
13 They have been.

14 And so we are in a process now of  
15 actually setting up stations where the people  
16 that come through in recreational boats, if they  
17 find quagga and zebra mussels, then we can either  
18 arrest them or make them remove the zebra  
19 mussels. So that's kind of an interesting thing.

20 With that, I have the same issues on  
21 budget that everybody else does. So, that's all  
22 I have. I'm glad to answer any questions if you

1 have them.

2 MEMBER OKONIEWSKI: Thank you, Madam  
3 Chair. Randy, I had heard somewhere, and I can't  
4 recall where, that there was some thought that  
5 perhaps sea lions were interfering with the  
6 orca's ability to find those chinook salmon. Is  
7 that something that's --

8 MEMBER FISHER: Yes, there was a --  
9 the studies that are coming out, they are trying  
10 to tie that relationship so that obviously if  
11 they're eating 31 and a half million salmon, most  
12 of that is not by the orcas. Most of that is by  
13 the sea lions, there's no question about that.

14 So a lot of people, including Liz and  
15 all, we have weekly calls now. And there's a lot  
16 of work trying to put together legislation to  
17 amend the Marine Mammal Act. So, that's what's  
18 going on.

19 CHAIR BEIDEMAN: Dave?

20 MEMBER DONALDSON: Thank you, Madam  
21 Chair. I don't have a question. I just need --  
22 I wanted to add one more thing about RED SNAPPER.

1 The RED SNAPPER Act is Regionally Empowered  
2 Decision-making for Snapper, Noting the Angling  
3 Public and the Preservation of an Exceptional  
4 Resource Act.

5 So, I figured that would be a good  
6 thing to end the morning on and go to lunch.

7 CHAIR BEIDEMAN: Thank you for that  
8 information.

9 MEMBER DONALDSON: Our tax dollars at  
10 work.

11 CHAIR BEIDEMAN: Peter?

12 MEMBER MOORE: Yeah, thank you, all.  
13 One of the overriding issues for fisheries is the  
14 Marine Mammal Protection Act. And I don't think  
15 it -- I'm not familiar with the Gulf Coast as  
16 much as Alaska, West Coast, and East Coast. But,  
17 you know, I mean, I had no idea, that 31 million  
18 salmon, that's a lot of fish, and that's probably  
19 obviously an estimate.

20 But I'm just curious where, you know,  
21 where in this whole process does an honest look  
22 at a predator base like that come into the whole

1 management of a resource, food resource. that  
2 this country depends on?

3           And I'm not anti-marine mammal by any  
4 means. But I am interested in sort of how that  
5 predator base takes a pass on everything. And I  
6 don't know, does it get discussed at the ASMFC  
7 level? Or does it get discussed at the MAFAC  
8 level? Or does it get discussed -- where does it  
9 get discussed and where do decisions get to be  
10 made about it?

11           MEMBER HAMILTON: I can probably give  
12 a more political answer than Randy might. Yes,  
13 it's the HSUS scorecard. You know, it's going to  
14 require an act of Congress. And, you know,  
15 there's a general acknowledgment that the Act has  
16 been a supreme success. And no one's suggesting  
17 we reverse the health of the marine mammal  
18 population, at least on the west coast.

19           But if this comes on a scorecard, it  
20 really hampers a senator, or more a House  
21 member's ability to amend the Act. And the  
22 current proposed amendment, the bill is very,

1 very surgical. But if you look, there's just as  
2 big a problem in Puget Sound, maybe bigger, that  
3 affects the orcas with predation by pinnipeds.

4 But the more we expand the bill, the  
5 less chance we have of passing any amendments.  
6 So, the 120 amendments that were put in after  
7 Ballard Locks -- which most of you are probably  
8 familiar with, we lost a whole race of steelhead  
9 there before we could take any actions -- are now  
10 proving to be inadequate in other locations where  
11 you have natural dams and waterfalls as pinch  
12 points.

13 So, it's a political problem. And  
14 they're going to say no to anything. They're  
15 going to sue, you know, even if we're successful  
16 in getting an approach that will save the  
17 steelhead at Willamette Falls, they'll still sue  
18 over it. They'll still end up in court.

19 CHAIR BEIDEMAN: Bob?

20 MEMBER BEAL: Yeah, I completely  
21 agree, it's a political problem. It comes up  
22 from time to time at ASMFC. But the states kind

1 of throw their hands up and say I don't think  
2 there's anything we can do about it at the state  
3 level.

4 And, you know, we want to refer back  
5 to Congress and ask them to do something, but it  
6 seems like the states, in particular on the east  
7 coast, just don't know where to start, to be kind  
8 of blunt.

9 And, you know, the seal populations up  
10 in New England are really skyrocketing. And the  
11 predatory demand of those animals, and that's why  
12 you have a lot of great whites swimming off of  
13 Cape Cod in the summer. They're, you know,  
14 chowing down on seals, which creates another set  
15 of problems with tourism and swimmers and stuff.

16 You know, I didn't mention whales, as  
17 Randy did, but I think there were 15 right whales  
18 killed this summer by gear entanglement. And  
19 well, no, the ship strikes and gear. Mostly were  
20 killed by ship strikes, but all the ones that  
21 were killed had some gear marks on them of some  
22 sort.



1           And the right whale population is only  
2 about 420 animals. So, you know, 15 animals out  
3 of that population is a big deal. And, you know,  
4 all the fisheries with vertical lines -- lobster,  
5 which is a pretty big fishery, and a number of  
6 crab fisheries and some other things -- you know,  
7 all those have a very real chance of being  
8 impacted by the events from this summer.

9           Most of the mortality happened in  
10 Canadian waters, but it's still the same  
11 population that's swimming through U.S. waters.  
12 And, you know, there was some mortality here, so  
13 I think we're all collectively, U.S. and Canada,  
14 are going to have to wrestle with the right whale  
15 issue.

16           But, back to your question, you know,  
17 the Commission, ASMFC anyway, feels like their  
18 hands are kind of tied as far as dealing with the  
19 seal populations and, you know, what to do about  
20 it.

21           MEMBER MOORE: So, has there ever  
22 been, that anybody's aware of, sort of like an

1 economic analysis of, you know, what the  
2 consumption, if you translated the consumption --  
3 let's say grey seals or your sea lions out west  
4 or whatever -- you know, what that number is,  
5 what that sort of quote-unquote cost is, either  
6 regionally or on a national basis.

7 I'm not talking about right whales,  
8 but I'm talking about some of these other  
9 skyrocketing populations or problem populations  
10 that are, you know, causing sort of follow-on or  
11 knock-on effects, like on the steelhead for  
12 instance. Everybody has to kind of do something  
13 to preserve the steelhead, but the one thing that  
14 they can't do is clearly the issue.

15 So what's the cost of that inaction?  
16 I guess that's what I'm curious about. Has that  
17 ever been done that anybody knows about?

18 MEMBER FISHER: I think it's been  
19 partially done. I don't think it's been done  
20 nationally. I mean, one of the issues that we've  
21 been working with for a while is National Marine  
22 Fisheries Services has to determine whether or

1 not some of these critters are at carrying  
2 capacity where they are.

3 So, I think that's a question to Cisco  
4 probably more than it is to us. But we know, in  
5 the case of California sea lions, that they're  
6 definitely there. So, what are we going to do  
7 about it?

8 I mean, my guess is we'll get  
9 legislation out of the House, that's my guess.  
10 Out of the Senate, since the Senate is so close,  
11 that's going to be the issue. That's going to be  
12 where the problem happens right there.

13 CHAIR BEIDEMAN: Another miracle.  
14 We're early. So I'm going to give it to Jennifer  
15 because she wanted to go over how we were going  
16 to do things this afternoon. I think she wanted  
17 to ask something of Julie.

18 MS. LUKENS: You ready, Julie? Later  
19 this afternoon, starting at 2:45, we have  
20 subcommittee and working groups discussion that  
21 we're going to do as an entire forum, because a  
22 lot of the topics there's overlap with the

1 groups.

2 We're getting a climate science update  
3 where Roger is going to be talking about that  
4 climate science assessment. Later, we're going  
5 to have the ecosystem approaches subcommittee  
6 discussion about those comments that the group  
7 has pulled together.

8 And then quite a bit of time dedicated  
9 to recreational fishery subcommittee, and Russ  
10 Dunn is here to give presentations. So those are  
11 the issues that we have to cover this afternoon.

12 I know at lunch, the resilience group  
13 is meeting at lunch to go through the data and  
14 the executive summary wrap-up there, work that  
15 needs to be done in advance of tomorrow.

16 I did want to ask about the  
17 aquaculture letter. I know Bob sent out a draft.  
18 And, Julie, I want to point to you. Do we need  
19 to reserve a small amount of time or do you feel  
20 that you can work that out before tomorrow and  
21 get a draft out to everyone, if we need to manage  
22 for that?

1 MS. BONNEY: It's pretty  
2 straightforward, don't you think?)

3 MS. LUKENS: So then maybe what we  
4 might want to do is, for the folks who are  
5 interested in that letter, is that taking a look  
6 at that, if we need to go through another  
7 iteration overnight before we meet tomorrow,  
8 because that's something that I think, timing-  
9 wise, MAFAC needs to make a decision on, or  
10 recommendation on tomorrow before we adjourn.

11 So, I'm just offering that out there,  
12 is we need to come up with a plan if you want to  
13 get to that by tomorrow.

14 MS. BONNEY: So I guess my question is  
15 then do you want us to do that, think about the  
16 letter during the afternoon session as a Commerce  
17 Committee, or do you want just Bob and I to work  
18 together and then we can circulate a draft?

19 MS. LUKENS: I would defer to you as,  
20 you know, the head of the subcommittee. Or you  
21 can think about that. We have time before this  
22 afternoon. I just wanted to raise that issue so

1 members were aware how to address this before  
2 tomorrow.

3 MS. BONNEY: I guess if Committee  
4 members have an opinion, maybe they can let me  
5 know over lunch.

6 MS. LUKENS: Sounds like a plan.  
7 Thank you for your time. I just wanted to get  
8 that ironed out before tomorrow so we're not in a  
9 pickle tomorrow. So, anyway, with that, I'll  
10 turn it over to Terri.

11 CHAIR BEIDEMAN: And we'll have an  
12 early lunch. And those who are going to be  
13 interested in input on the documents of Task 6  
14 and the resilience executive summary, if you have  
15 things you would like to discuss or insert into  
16 the summary, or into the document, we're going to  
17 go through it, hopefully get through it.

18 I thought we could just, you know,  
19 either go across the street, grab a lunch, and  
20 come back, or downstairs and take something and  
21 bring it up. But the plan, I thought, was to  
22 work in here. And Heidi is sacrificing her

1 lunchtime to be our transcript.

2                   So, that's all I have. And other than  
3 that, you need to be back here, please, at  
4 quarter of 2 so we can have public comment.

5                   (Whereupon, the above-entitled matter  
6 went off the record at 11:49 a.m. and resumed at  
7 2:01 p.m.)

8

9

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

(2:01 p.m.)

CHAIR BEIDEMAN: So, we're back in session. And I would like to ask if there is any public comment, any members of the public here that would like to make comment on the record. We'll make space for you right up here. And you can speak into the mic.

Or if there's anyone in the public who happens to be on the phone. No? Okay, scratch that.

All right, seeing none, we'll proceed. And I would like to introduce Roger Griffis, Climate Coordinator, to give us a climate science update. Thank you.

MR. GRIFFIS: Great. Thank you very much. We'll test the mic. Can you all hear me? Sounds good? Great, thank you. It's a pleasure to see you again. Many of you I've seen many times before. Thank you for the opportunity to be here.

My job today is to give you an update



1 on two things. One is an update on year one  
2 implementation of our Climate Science Strategy  
3 Regional Action Plans. So that will be the first  
4 set of slides.

5 Then we'll transition, and I've also  
6 been asked to give you a brief, a little bit of  
7 information about the draft U.S. National Climate  
8 Assessment, which has just been released for  
9 public comment, and is now open for public  
10 comment through the end of January.

11 I understand that you all will be  
12 considering whether, if, and how, you all want to  
13 provide some comments. Hopefully, both of these  
14 are useful. Happy to take questions.

15 So, to proceed, then: good news. We  
16 have actually proceeded with year one  
17 implementation of our Climate Science Strategy  
18 Regional Action Plans.

19 As you'll recall, in 2015, the  
20 National Marine Fisheries Service released its  
21 first ever climate science strategy, which  
22 outlined both the challenges, the issues facing

1 us, and may of the science information needs in  
2 order to fulfill our mission with changing oceans  
3 and changing climate.

4 The goal of this strategy was to  
5 increase the production, delivery, and use of  
6 climate-related information to fulfill the NOAA  
7 fishery mandates.

8 And just again, as a reminder, the  
9 strategy outlined seven core objectives in order  
10 to empower and enable the Fisheries Service to do  
11 our job in a changing climate, changing oceans.

12 Those seven objectives are outlined  
13 here in this pyramid. The whole pyramid, like  
14 any pyramid, grows from the base. The base,  
15 number seven, of a solid science infrastructure  
16 to deliver the actionable information. And then  
17 the actual science is above that.

18 And it begins, as you might expect,  
19 with number six, being able to track the changes  
20 that are taking place and provide early warnings,  
21 essentially being able to answer the question  
22 that many of the managers and others have: what

1 is changing? How do we know?

2 The second level goes to understanding  
3 why is it changing, what are the mechanisms of  
4 that change? And third level, or the fourth  
5 objective there, is answering the question we all  
6 want to know, peering into the crystal ball: how  
7 will it change?

8 And then, lastly, using that  
9 information to provide fishery managers and  
10 protected species decisionmakers with information  
11 about what's the best response, how best to  
12 respond to these changing conditions. What  
13 should we prepare for through robust management  
14 strategies, climate ready reference points, et  
15 cetera?

16 So that was 2005. In 2006, we set out  
17 to then customize that strategy for each region  
18 so that each region would identify their priority  
19 science needs based on their issues, where they  
20 were in their science capability. We developed  
21 those as regional action plans, and you can see  
22 them. We have six of them at the moment, and two

1 in development.

2 And the goal was, of course, by  
3 developing those, those become the real work  
4 plans and implementation plans that would enable  
5 us to increase the science capability in each  
6 region, enable climate-ready management of the  
7 trust resources for which we are responsible, and  
8 ultimately advance the resilience and adaptation  
9 both of the resources, but also of the people and  
10 communities that depend on them.

11 So, very pleased to give you a  
12 progress report. A quick reminder: there were  
13 some priority actions in all of these regional  
14 action plans, and I'll touch briefly on some of  
15 these. These were things that you may have heard  
16 about before, remember other discussions.

17 These were things like complete  
18 climate vulnerability assessments for fish  
19 stocks, marine mammals, other kinds of things, to  
20 help us understand what species might be most at-  
21 risk. If we only have \$5 to do some science on  
22 it, what species maybe should we focus on?

1           Second would be improving our ability  
2 to track and report change. How do we better do  
3 this? As you know, the Agency has been  
4 developing ecosystem status reports to track  
5 change in each ecosystem now for over a decade.  
6 How do we improve those tracking mechanisms to  
7 provide better early warnings to decisionmakers?

8           And then targeted research to  
9 understand the mechanisms, improving forecasts.  
10 And really importantly, how do we help the  
11 managers understand the benefits or the costs of  
12 alternative management strategies. So, those  
13 were the core elements that each of the RAPs are  
14 trying to address.

15           Good news, RAPs have been implemented  
16 now after a first year in five of the regions.  
17 RAPs are still being developed in three of those  
18 regions. We've made good progress in '17, and  
19 I'll give you some examples.

20           The teams expect continued progress in  
21 '18, contingent on funding, primarily, in the  
22 budget in '18. And there are a number of lessons

1 and challenges and opportunities, as you might  
2 imagine, after our first year.

3 So what I would like to do is just  
4 give you a few examples from some of the real  
5 life science and real regions. I'm going to  
6 highlight the Northeast, a couple highlights from  
7 the Northeast Region, and then I'll go through a  
8 couple other highlights.

9 In the Northeast, as in most regions,  
10 there were a whole variety of projects  
11 implemented to address the growing needs for  
12 climate-related information. In the Northeast,  
13 particularly, they've made advances in tracking,  
14 but also projecting change. And I'll give you an  
15 example.

16 And one of the powerful lessons, of  
17 course, from the Northeast, but other regions as  
18 well, is of course we depend on science  
19 partnerships, both for collaboration and getting  
20 the science done, but also additional funding  
21 mechanisms to support that work.

22 A number of key accomplishments. In

1 the Northeast, in particular, they've made  
2 significant progress in improving their ecosystem  
3 status report products and delivery.

4 This is a key mechanism by which the  
5 Council now, increasingly, and others, are using  
6 to track how the system is changing, from the  
7 physical changes like temperature and oxygen  
8 levels and acidification to primary productivity  
9 and the distribution of fish stocks.

10 They've also, and I'll highlight this  
11 one, really interesting advances in our ability  
12 to project future changes. Some interesting work  
13 trying to figure out what's going to happen to  
14 estuary conditions, and a lot of work,  
15 particularly, on laboratory-based process studies  
16 to understand, as temperature increases, what  
17 does that do to basic rates and functions for  
18 individual species? Those are some of the kinds  
19 of work that's going on.

20 So, I put this slide up here just to  
21 flag really some -- it's an amazing time in this  
22 field of science because things are changing very

1 rapidly. We're making very significant advances  
2 in our ability to begin more robustly projecting  
3 how ocean conditions may change. And also, then,  
4 what does that mean perhaps for the species  
5 living in those waters?

6 So, these four quadrants basically  
7 tell a story over time, and the improvements in  
8 the model and climate, global climate models for  
9 the Northeast. You can see the Northeast coast  
10 there. And it basically goes from up in here,  
11 this is now my simple marine ecologist talking  
12 about climate models, okay?

13 It goes from up in this corner here,  
14 from the more simple, low resolution models and  
15 what they were projecting for increasing  
16 temperatures along the Northeast. I think this  
17 is over about an 80-year period, the CM2.1.

18 There was a bit of an advancement over  
19 CM2.5, still pretty low resolution. Some higher  
20 resolution at the atmospheric level. These are  
21 combined atmosphere driving ocean, driving  
22 atmosphere type models.



1                   It then went to about a mid-resolution  
2 level. But the breakthrough is back down in  
3 here. And this is probably the current, or  
4 there's probably a next generation model  
5 projection now.

6                   And the interesting thing is, look at  
7 the difference. This is the analogy that the  
8 principal investigator, Vince Saba, who is  
9 Fisheries Service scientist at our Global Fluid  
10 Dynamics Lab, is working this.

11                   His analogy is, this was like looking  
12 at an old tube TV set. Okay? You can see the  
13 pixels are big. In fact, the scale of this is  
14 100 kilometers. Those pixels are, the model, the  
15 smallest resolution is 100 kilometers. Okay?  
16 And this, the current one, is like looking at one  
17 of our flat screen TVs now. The pixels are now  
18 down to ten kilometers, and they're soon going to  
19 be even finer.

20                   So we're quickly advancing on our  
21 ability to use global climate-driven models down  
22 to a resolution that begins to resolve,

1       importantly, the coastal features, which is what  
2       we're really interested in.

3               So the main difference, if you look at  
4       these graphics, of course, is big pixels, finer  
5       pixels. And what happens is that the finer level  
6       models begin to enable us to resolve some of the  
7       coastal circulation features.

8               In this case, these models are telling  
9       us potentially very different projections of a  
10       future ocean along the Northeast, particularly in  
11       the Gulf of Maine. This one is saying there's  
12       not much difference going to happen in increases  
13       of one to two degrees Celsius.

14              This one basically saying that, no,  
15       no, no, the warming is going to be almost twice  
16       as much. And in fact, this one says it's going  
17       to happen much faster. And the power here is the  
18       resolution of both the atmospheric and ocean  
19       connection.

20              And the scale, what this is showing,  
21       is a lot of complex drawing in of the gulf stream  
22       waters and enabling that finer resolution in the

1 projections.

2           Again, I wanted to highlight, this is  
3 probably one of the fastest growing fields.  
4 It'll have big impacts on our ability to then  
5 take this information and say, what do we think  
6 might happen to productivity of the system, the  
7 distribution of fish stocks, and the implications  
8 for fisheries and fishing communities?

9           CHAIR BEIDEMAN: Roger, did you want  
10 to take questions during or -- we have someone  
11 who has a question. Liz?

12           MEMBER HAMILTON: Did you say that was  
13 80-year projections? I missed the timeframe.

14           MR. GRIFFIS: I believe it is. Yeah,  
15 I believe it's about an 80-year. Yeah. And I  
16 can provide the paper, if you all would like, or  
17 a summary of it. There's a really nice one-page  
18 summary of this, in terms I can understand, on  
19 the Northeast Fisheries Science website.

20           I'm happy to provide that link. It's  
21 really fascinating because, as I said, there are  
22 really two major implications. One, the warming

1 is twice or more as much as what the early  
2 projections showed. And there's a time dimension  
3 here. It also projects it happening on a faster  
4 scale than we expected. Yes, thank you.

5 MEMBER BERKOWITZ: So, on the high  
6 resolution models, the four to six degree  
7 warming, when are you predicting that that may  
8 take place?

9 MR. GRIFFIS: You know, I would have  
10 to look at the paper to see when they hit those  
11 levels. The end point here he's showing is the  
12 80-year endpoint. But I think it gets up at  
13 those levels even before that.

14 MEMBER BERKOWITZ: Okay.

15 MR. GRIFFIS: Can I get you the paper?

16 MEMBER BERKOWITZ: Please. Thank you.

17 MR. GRIFFIS: Yes, thank you very  
18 much. Thank you. So, as I said, the interesting  
19 thing is advancing this level of the story  
20 enables us to begin doing some very interesting  
21 things about asking questions about, well, with  
22 these kinds of changes in temperature of the east

1 coast, and if fish follow their preferred  
2 temperatures, where might the fish go over the  
3 next 80 years?

4 And so that's what this graphic shows  
5 is some really interesting work by Kleisner,  
6 Vince Saba, and others to begin taking that next  
7 step and saying, well, where might they be?. And  
8 how, on what timeframe, sir, as you were  
9 suggesting, what timeframe might these changes be  
10 taking place?

11 And so this is a very interesting  
12 paper. It came out just the end of last year,  
13 which, I don't know if I have the ability to do  
14 this, but they actually show the projections of -  
15 - I don't know how to do this. This is a video  
16 that runs. And you can choose, you can look at  
17 now -- so this is actually -- here it goes.

18 So the colors here, you need to think  
19 about not as hot and cold. The red and the warm  
20 colors are good habitat, good thermal habitat for  
21 cod. Okay? The lighter colors are the ones that  
22 are not so good habitat, not preferred habitat

1 for cod.

2 So, again, this is simply taking those  
3 previous models that I showed you in the previous  
4 slide, carving out the space, the thermal space  
5 that cod like, and saying where will that thermal  
6 water temperature space go?

7 And, obviously, this is not a good  
8 sign for cod, at least for cod fishermen in the  
9 U.S. and the Gulf of Maine. Again, this is an  
10 80-year projection. There isn't a whole lot of  
11 habitat, thermal habitat left for cod. Okay?

12 So this just simply sets up a number  
13 of interesting additional questions, right? But  
14 it's beginning to give us some more to look at  
15 into the crystal ball. Does that make sense? If  
16 you could take it back about midway through,  
17 there's a slider on it. If you take it down to  
18 the middle, you know, go out 25 years or  
19 something like that.

20 MEMBER BERKOWITZ: So, kind of  
21 coincidentally as these waters are warming up in  
22 the Northeast, it might be just coincidentally,

1 but Iceland is experiencing, you know, sort of  
2 record catches right now, particularly with cod  
3 and haddock.

4 So, I'm a non-scientist. Would it  
5 make sense that these fish are migrating into  
6 those colder waters?

7 MR. GRIFFIS: You know, it's a very  
8 interesting point. I doubt it's coincidence. As  
9 you probably know, the warming of those waters is  
10 changing the productivity. There are lots of  
11 studies showing that an abundance of the  
12 zooplankton, phytoplankton, the whole system is  
13 changing from the food web up.

14 So I think cod are going to -- at  
15 least cod up north are going to love the future,  
16 perhaps. I haven't seen anything that talks  
17 about migration, at least on that kind of  
18 geographic scale. Most of it talks about  
19 changes, up in that area, rapid changes in  
20 productivity, recruitment.

21 Okay. All right. So, a few lessons  
22 and challenges. And this is what we were hoping

1 for. We've just implemented the first year of  
2 priority science projects to advance our ability  
3 to track and understand climate-driven changes.  
4 And we wanted to learn from this.

5 And some of these lessons are what you  
6 might expect. And there are some real  
7 limitations to what we can do at the moment.  
8 Largely, all of the work I'm talking to you  
9 about, and all of the progress that we made over  
10 the past year to implement these regional action  
11 plans and our overall climate science strategy,  
12 is based on the existing staff we had the  
13 beginning of the year. And to most extents, very  
14 little new funding. Basically, existing budgets  
15 either at the science center level or at the  
16 headquarters level.

17 So, this is all happening based on  
18 existing workforce, existing resources, being as  
19 efficient and effective, and in some cases  
20 changing some priorities about what money is  
21 spent where.

22 So, funding and staff limitations



1 continue to impede expansion into all seven of  
2 those objectives and the level of work we can  
3 produce. Challenges still remain regarding the  
4 inclusion of environmentally consistent variables  
5 into stock assessments and management decisions.

6           And this is an important point. I'm  
7 sure it's not news to you that many resource  
8 managers -- not just fishery managers or  
9 protected species, not just NMFS -- are really  
10 wrestling with how do I use information about  
11 changing environmental conditions in my  
12 decisionmaking process?

13           And I think in fishery management we  
14 are particularly challenged, given the complexity  
15 of the situation, the framework we have. This is  
16 a challenge, but it's something that where  
17 there's a lot of great work going on, and some  
18 great examples of progress to use this  
19 information.

20           In the Northeast, anyway, most of the  
21 research -- but I think this is probably true in  
22 other regions, too -- we're really focused almost

1 exclusively on changing temperature. It's the  
2 major driver of change. It's something we have  
3 well documentation for.

4 The other variables, of course, that  
5 we need to expand out into and began thinking  
6 about multiple interactions between these  
7 changes. There are things like changing  
8 salinity, ocean acidification, and then all of  
9 the other ramifications. But at the moment,  
10 we're focusing primarily on temperature.

11 And we need more process-based  
12 laboratory studies, at least this was the  
13 recommendation from the Northeast team, to better  
14 understand the mechanisms and what should we  
15 expect? With increasing temperatures or changing  
16 salinity, should we expect species to continue to  
17 move? Will it mean more babies or less babies?

18 Julie, talking about Alaska, you know,  
19 how much temperature change can be tolerated  
20 before we lose the year one recruitment of the  
21 pollock in the Bering Sea, for example? So,  
22 understanding the mechanisms and process.

1 I'll give you a flavor of what's  
2 happening. Switch coasts. Out on the west  
3 coast, 2017 was a dramatic year for environmental  
4 change along the west coast. Ocean-wise, they  
5 were in, what, their third or fourth year of a  
6 hot water event, the hot water blob.

7 And that really was a major focus of  
8 much of their science, trying to understand the  
9 impacts of that blob and its relation to the El  
10 Nino cycle event. Some really tremendous  
11 examples taking place, though. The science teams  
12 out there completed their vulnerability  
13 assessment, climate vulnerability assessments for  
14 over 80 species.

15 These were the primarily marine major  
16 species that we manage. They also completed  
17 climate vulnerability assessments for all of the  
18 ESA-listed salmonids. And this was a huge  
19 effort, again, to better understand what species  
20 do we think are going to be at most risk, and  
21 also some of the questions on why, and where  
22 might we focus our limited research dollars.

1           A significant effort on the west coast  
2 focused on trying to understand ocean  
3 acidification. It's really interesting work  
4 thinking about dynamic ocean management for  
5 improving catch, reducing bycatch, as ocean  
6 condition changes.

7           The Australians have really led the  
8 way on this, being able to use almost weather-  
9 like forecast to say "fish here, but not here" to  
10 avoid bycatch and that kind of thing.

11           And then in the Bering Sea, pushing  
12 north, really tremendous work. I think the  
13 Bering Sea and the Alaska folks are really the  
14 Cadillac version for us of the premier science  
15 teams tracking climate and ocean changes and  
16 understanding how that might impact our trust  
17 resources.

18           They have the longest running  
19 ecosystem status report of any of our regions.  
20 It is the model by which all our other regions  
21 are comparing. And each year, they actively  
22 identify ways to improve that. Just for example,

1 in this latest round they had 37 of their indices  
2 updated, and they added 11 new indicators.

3 Again, imagine a report card on your  
4 ecosystem that this team delivers to the Fishery  
5 Management Council and the SSC every year before  
6 the consideration of the stock assessments and  
7 before the rest of the process. Really state of  
8 the art.

9 Tracking changes in distribution of  
10 many, many species, they too are completing a  
11 climate vulnerability assessment for fish stocks.  
12 A lot of work going into trying to understand the  
13 impact of changing ocean conditions on  
14 recruitment, something they're really struggling  
15 with and seeing evidence of right now.

16 And then also understanding the  
17 effects of OA. And then this project I want to  
18 highlight for you, the ACLIM project to try and  
19 play out what are the best fishery management  
20 strategies under potential future ocean  
21 conditions. And that's what this slide  
22 represents.

1                   It's a little bit complicated, but  
2                   basically flows from the top. It's asking what  
3                   are the best management strategies for fishery  
4                   management in the Bering Sea? And this is really  
5                   designed to be a test drive of whether or not we  
6                   -- how well can we do this given the state of the  
7                   science now?

8                   So it begins with being able to use  
9                   different climate scenarios to then play out  
10                  different ocean scenarios for the Bering Sea,  
11                  have those then drive different ecosystem  
12                  scenarios, or at least use different ecosystem  
13                  models as a way of comparing different  
14                  techniques. And ultimately then saying,  
15                  evaluating, well, if we played out fishery  
16                  management strategy A, B, or C, how do each of  
17                  those perform under these various expected  
18                  conditions of the Bering Sea over the next ten to  
19                  20 years?

20                  Our whole goal here is to be able to  
21                  hand back to the managers and say, Here's how  
22                  these different strategies performed. Strategy A

1 didn't work out the way we all thought, and  
2 here's why. And let's work together to figure  
3 out if we like the results or if they're robust  
4 enough.

5 But that's the goal, to be able to  
6 evaluate and ultimately help decisionmakers play  
7 out various scenarios under changing conditions.

8 So, in summary, then, I'm pleased to  
9 report we've gone from no strategy pre-2015, 2015  
10 having a thoughtful strategy about where our  
11 science needs were to be a climate ready  
12 organization. We've now developed regional  
13 action strategies and we've implemented the first  
14 year of those in five regions. The others we  
15 hope will come on in this coming year.

16 We've had good progress, and have our  
17 fingers crossed for continued good progress,  
18 contingent on budget and other things in '18.  
19 We've had a number of key lessons. We need to  
20 strengthen these RAP teams across both our  
21 science centers, our regional offices, and our  
22 key partners. We can't do this alone without

1 other partners.

2 And we need to continue this cross-  
3 NMFS coordination, continue to chase the dollars  
4 and support, and encourage the partners to stay  
5 with us. We need to loop back with the clients,  
6 and particularly fishery management councils, to  
7 make sure that they're getting the products and  
8 ultimately deliver the products and services, and  
9 that the science is responding to their needs.

10 I think that's my update on the  
11 Regional Action Plans. I could pause there  
12 before going to the next topic, if you'd like.

13 CHAIR BEIDEMAN: Do we have any  
14 questions for Roger?

15 MR. GRIFFIS: Okay, great. All right,  
16 I'll jump into my next one.

17 Oh, I forgot the good news. I always  
18 hate to be bringing the bad, I feel like I'm the  
19 bearer of bad news.

20 So, remember that projection of cod,  
21 thermal habitat, preferred habitat, right? So  
22 that was one of maybe 20 species that showed that



1 same pattern. Of course, those are all the  
2 northern, cold water-loving species, right? But  
3 of course, the east coast has a whole lot of  
4 southern, warm water species.

5 Those maps are the exact opposite.  
6 So, Atlantic croaker, black sea bass, I mean,  
7 there are another 20 species that, if you look at  
8 the projection for them, boy, they're going to  
9 love the future. They're going to love the Gulf  
10 of Maine. They've got their bags packed and  
11 tickets and hotels and everything.

12 And so there's a very interesting  
13 other side of this story. And my colleagues  
14 always say, Roger, you've got to tell the other  
15 side. So, I'm telling the other side. And it  
16 could be a good news story, although I'm not sure  
17 I want to call it that. It certainly is a  
18 resource -- it's a challenging resource  
19 management story, part of that broader challenge  
20 that we're facing.

21 CHAIR BEIDEMAN: We do have Harlon.

22 MEMBER PEARCE: She's trying to beat

1 me to the button because we're about to say the  
2 same things. All this wonderful information  
3 you've got, and, you know, you're doing a great  
4 job pulling all this together. How the heck are  
5 you going to implement it quick enough? Because,  
6 I mean, the way you're talking here, things are  
7 changing very quickly. And the councilmatic  
8 system does not change very quickly. And we're  
9 involved at this group right now in trying to  
10 figure out ways to move the councils much  
11 quicker.

12 So you need to have some sort of a  
13 game plan to utilize this in a much different way  
14 than they're utilizing data now. How are you  
15 going to do it?

16 MR. GRIFFIS: I was hoping you all  
17 would help us figure that one out.

18 (Laughter.)

19 MR. GRIFFIS: No, I think you've hit  
20 it right on the head. I mean, it is that  
21 combination of the right information at the right  
22 time, but also having a system that can use it

1 effectively and respond quickly. I think that's  
2 a major challenge.

3 There are a number of efforts  
4 underway, as you probably know, wrestling with  
5 this. There's a group thinking about how to  
6 implement the NS1 requirements.

7 I think a key piece of this is, if we  
8 had these ecosystem report cards at the level of  
9 sophistication and delivery that I think we  
10 should be at, we'd be more like -- you know, we'd  
11 be more like the Weather Service in providing  
12 that kind of information to the councils almost  
13 on real time. Some real time, but also on a  
14 seasonal forecast, because it seems to me the  
15 kind of timeframe that they're working on, right,  
16 is a more seasonal. They need to know, like a  
17 farmer, is next year going to be dry or wet?  
18 Right? Is it going to be a great year for  
19 pollock recruitment, or is it going to be another  
20 year where we don't have no recruits?

21 I think that part of the answer on the  
22 science side is getting to that seasonal

1 forecast, getting them information on a much  
2 faster, almost real time basis. But I think your  
3 point about the system itself, can it react  
4 quickly enough, I think there's some challenges,  
5 yes.

6 MEMBER PEARCE: Yes, quite a few, I'm  
7 afraid.

8 CHAIR BEIDEMAN: Julie?

9 MS. BONNEY: So, I guess I'm going to  
10 the, what, community planning or the, you know,  
11 there was some pretty good work done probably two  
12 years ago. And I know that there was a couple of  
13 grant opportunities in Alaska that they hope to  
14 have got funded, and they did not.

15 So I'm wondering if the funding for  
16 adaption planning at the community level is  
17 drying up, or are you making good progress on  
18 that set of issues, too?

19 MR. GRIFFIS: Great question. I  
20 haven't been specifically tracking the funding  
21 levels for that. But if we just look within our  
22 organization with NOAA where that funding is,

1 it's not primarily through the fisheries service,  
2 it's through organizations like Sea Grant,  
3 through Coastal Zone Program, maybe a little bit  
4 through Saltonstall-Kennedy.

5           You know as well as I do the status of  
6 the funding for those. So I think it's a  
7 critical need. Certainly, the kind of investment  
8 that's needed is not being made. If you look at  
9 other sectors, coastal communities and flooding  
10 for example, there are certainly a lot more  
11 funding being pumped into that, rightfully so. I  
12 think this is a neglected area.

13           MEMBER HAMILTON: Thank you. You sort  
14 of jumped on the same thought I had. And in  
15 terms of getting councils to react more quickly,  
16 I hang in the halls. I'm the habitat committee,  
17 so I'm not with the main folks in the council.

18           But even at Randy's meetings and at  
19 council meetings, I hear a lot of climate denial  
20 in the halls, I really do, grumbling, yadda,  
21 climate change.

22           And so to the extent that not only can

1 they see these models that you're showing us  
2 which I think are really compelling, but show  
3 where the fish, where you project them moving to,  
4 I don't think we really had that illustrated as  
5 well.

6 And then as best you can, as  
7 scientists, in real time, show movement so that  
8 it's not just okay, here's what's going to happen  
9 in 20 years, but here's what's happening right  
10 now. It will motivate people to be more active  
11 and help find the solutions for management.

12 You know, you get it, you want it. I  
13 get it, but I don't know about other councils.  
14 There's just still a lot of people who aren't  
15 facing reality.

16 MR. GRIFFIS: Yes, thank you.

17 MEMBER HAMILTON: And I'm grateful  
18 that climate change is on your website. Thank  
19 you for that.

20 MR. GRIFFIS: Thank you. Shall I  
21 continue?

22 CHAIR BEIDEMAN: Go forward.

1 (Off microphone comments.)

2 MR. GRIFFIS: Great. Okay. Thank you  
3 very much. Okay, let's switch gears then. What  
4 I want to do is just give you a quick update,  
5 informational briefing on where on the National  
6 Climate Assessment and the opportunity for input  
7 at this time.

8 This is a joint presentation with  
9 Andrew Pershing, Dr. Andrew Pershing at the Gulf  
10 of Maine Research Institute. He is the lead  
11 author for the chapter on oceans and marine  
12 resources. He gave a briefing, I think it was to  
13 the climate task force and some of these.

14 So I'm going to just do a quick recap  
15 of that. Apologies if for those of you that  
16 already heard it.

17 So, as you may or may not know, the  
18 national climate assessment is actually called  
19 for in the Global Change Research Act of 1990.  
20 It says that there should be an assessment done  
21 every four years, delivered to the President,  
22 Congress, and public which integrates, evaluates,

1 and interprets the current findings and  
2 scientific uncertainties, and it goes on to talk  
3 about of a changing climate and changing planet.

4 Analyzes those effects on various  
5 sectors, the national environment, agriculture,  
6 energy, and it goes on. And analyzes current and  
7 future trends in global change for the next 25 to  
8 100 years.

9 This was designed to begin giving the  
10 America, our nation, a state of the science on  
11 the changing climate and the impacts for the US.  
12 The IPCC has impacts worldwide. This is  
13 specifically one for the US. Okay?

14 There have been assessments, so this  
15 was supposed to happen every four years. Hasn't  
16 quite happened that way. There have been three  
17 assessments to date in 2000, 2009, 2014 was the  
18 last one.

19 And this one is actually on track to  
20 be the first one actually on the four year  
21 interval. It is projected to be delivered and  
22 completed in next year, in 2018. It's got two



1 volumes. It's broken into two pieces. And both  
2 of these came out a couple, three weeks ago.

3 The first volume, climate science  
4 special report, is the current state of the  
5 physical environment, the physical changes in  
6 atmosphere and oceans. And it provides the  
7 foundation on which volume two talks about the  
8 impacts, risks, and potential adaptation  
9 strategies within the US.

10 So volume one is what do we know about  
11 changing temperature, precipitation, ocean  
12 temperature, salinity, acidification, that kind  
13 of thing. And then volume two.

14 So, volume one was in the works for  
15 over two plus years, probably 100 distinguished  
16 scientists from all different fields. And that  
17 one came out a couple weeks ago, as I said, as a  
18 final version. And it's available on your, I  
19 think on the links.

20 The second volume is out for public  
21 comment. The comments are due by the end of  
22 January, and that's the one that I'm hoping you

1 might take interest in and perhaps provide some  
2 comments on. And I'm going to focus my  
3 discussion I think on that.

4 No, I'm actually going to give you  
5 just a quick highlight on what the volume one  
6 says. I didn't have this slide before, and I  
7 said wait a minute, I forgot to say what volume  
8 one says.

9 So, quick snapshot, what does volume  
10 one say about oceans? Of course, volume one  
11 talks about all the different aspects of changing  
12 climate. But it has one chapter specifically on  
13 ocean and ocean acidification. And here are some  
14 of the key findings.

15 Probably not surprising to you, but  
16 that they found two that oceans are warming. And  
17 you know this is partly because, mainly because  
18 the oceans, thank God for oceans, right, oceans  
19 absorb a lot of heat, water absorbs heat. In  
20 fact, they've been absorbing over 93 percent of  
21 all the extra heat that we generated trapped  
22 after we started emitting CO2 into the atmosphere

1 over the past 100 years.

2           So the oceans, like a kettle on the  
3 stove, have been taking up all that extra heat.  
4 The implication is, they also, signal is very  
5 clear now that they're warming. The heat content  
6 is increased at all depths now that we're since  
7 1960.

8           And again, globally it's a degree of  
9 1.3 degrees Fahrenheit, but the projection then  
10 of nearly five degrees Fahrenheit by 2100. You  
11 might think well that's not too much, big deal.  
12 That's a lot of heat. If your kettle is as big  
13 as the global ocean, it takes a lot of heat to do  
14 that.

15           And the important thing for the US is  
16 what does it mean for our oceans, right? And  
17 I'll give you a hint. Regionally, it makes a big  
18 difference. The story in each region is  
19 different. The Gulf of Maine, our northeast  
20 ocean, part of the Atlantic is warming faster  
21 than almost any other part of the ocean. Okay?  
22 So we've got particular hot burners under our, in

1 our place.

2 Ocean acidification, also increasing.  
3 Again, thank God for oceans, I guess, they absorb  
4 a lot of CO<sub>2</sub>, changes the chemistry.  
5 Unparalleled acidification rate currently and in  
6 the projections as well. Rising seas they talk  
7 about as well.

8 And this one really highlights one of  
9 the new aspects is the growing concern and  
10 evidence about declining oxygen levels. Tied to  
11 the heating and other aspects, but really I  
12 think, I don't want to make this sound like it's  
13 just a repeat of all the advanced, the previous  
14 science.

15 It is intended to build on the  
16 existing. So it recaps what we knew and then  
17 highlights the advances. And there are some very  
18 significant advances in all of these areas.

19 So this is the context in which then  
20 volume two, which I'm hoping you will be looking  
21 at, begins to talk about well what are the  
22 impacts, risks, and possible adaptation in the

1 US. You know?

2 And it's organized by regions, it's  
3 got ten regional chapters. So one of my messages  
4 is if you care about any particular region, I'm  
5 hoping you will go and look at that region and  
6 see what they say.

7 We worked hard with each of the  
8 regional teams to encourage them to have  
9 something on oceans for each region, something  
10 perhaps on marine resources. Many of them did.

11 The previous, 2014, the last National  
12 Climate Assessment was the first time there was a  
13 chapter dedicated to oceans and marine resources,  
14 okay, in the National Climate Assessment. So  
15 this will be the second time.

16 But in the 2014 one, there were  
17 regional chapters, but there were only one region  
18 that talked about oceans and fisheries. I think  
19 it was the Pacific Islands one. So many more of  
20 the regional chapters now include a discussion of  
21 changing oceans and fisheries, which is a great  
22 thing.

1                   And again, so ten regional chapters.  
2           Then they have these national chapters  
3           highlighting some of the key new findings, or  
4           issues of concern, in each of these sectors. And  
5           I've highlighted the ones in red, is that in red?

6                   In red, I highlighted the ones that  
7           may be of interest to you all through a NMFS  
8           lands, an ocean coastal lands. Regions, of  
9           course, water, kind of important. Ecosystems  
10          talks about changing ecosystems, and some on  
11          oceans.

12                   Obviously the coast and ocean one, the  
13          coastal one is focused almost primarily on  
14          changing sea levels and changing flooding issues  
15          around the nation. I'm going to talk about the  
16          key points in this one.

17                   Human health also talks about ocean  
18          issues, ocean spreading, ocean related diseases,  
19          Vibrio and other things. So there's an ocean  
20          connection there, and ocean connections in both  
21          of theses. So just trying to point you to some  
22          of those.

1 MS. LUKENS: Roger?

2 MR. GRIFFIS: Yes, ma'am?

3 MS. LUKENS: Roger, I was just going  
4 to ask what are the green dots on that --

5 MR. GRIFFIS: Oh, yes. Good question.

6 MS. LUKENS: -- on that graphic?

7 Thank you.

8 MR. GRIFFIS: I think we took that  
9 from, this graphic originally talked about the  
10 scoping and input process in developing of the  
11 chapters. Thank you, I was supposed to talk  
12 about that.

13 So these chapters were developed  
14 beginning with a pretty massive public input  
15 phase seeking information on key changes since  
16 2014. And these dots I think are places where  
17 there were primarily the formal consultation  
18 public process fora that were held to get input  
19 from public experts, that kind of thing around  
20 the country. Yes, thank you.

21 So, oh yes. So I'm going to focus now  
22 on well, what is in the draft chapter on -- what

1 is the draft oceans and marine resources chapter  
2 talk about? Again, our goal was to summarize how  
3 changing oceans may impact the nation. Impacts  
4 risks and adaptation, really focusing on the key  
5 issues or advances since 2014.

6 Here's the team. Libby Jewett and I,  
7 Libby Jewett is the head of our ocean  
8 acidification program. She and I were something  
9 called a CLA, a Coordinating Lead Author. Our  
10 job was to help empower and support the actual  
11 expert team, and to make sure that we were  
12 connecting with other chapters.

13 The actual writing team, although we  
14 participated, was led by as I said Andrew  
15 Pershing at GMRI. And then we had two, four, six  
16 experts from John Bruno at UNC, a coral reef  
17 tropical ocean expert.

18 Shallin Busch, NOAA, ocean  
19 acidification and others. Alan Haynie, one of  
20 our star social scientists and economists,  
21 fisheries economists. Samantha Siedlecki, ocean  
22 oxygen and other things. And Desiree Tommasi,



1 ecosystem changes particularly related to  
2 fisheries.

3 And we looked primarily at the  
4 implications of the climate related drivers of  
5 change, ocean rising temperatures, acidification,  
6 deoxygenation. As I said, the coastal chapter  
7 deals primarily with this sea level rise thing.

8 So, each of the national chapters had  
9 six pages within which to do, to summarize the  
10 key findings. So this was quite a challenge, but  
11 it was, was it Mark Twain that said something  
12 about wanted to write you a short note but that  
13 was too hard, so I wrote you a long letter or  
14 something like that?

15 So, we had to write a six page summary  
16 of all the major advances in our knowledge of  
17 impacts and risks on the US ocean related  
18 industries and other things. So we came up with  
19 four key, three key messages.

20 The first message was on ecosystem  
21 disruption. This message talks about that the  
22 valuable, the nation's valuable ecosystems are

1 being disrupted, that is at times torn apart,  
2 transformed by these increasing changes in global  
3 temperatures through the loss of iconic and  
4 highly valued habitats, and changes in species  
5 composition and food web structure.

6 This disruption will intensify as  
7 these changes continue, as projected. And in the  
8 absence of significant reductions in carbon  
9 emissions, transformative impacts on ocean  
10 ecosystems cannot be avoided. Message one from  
11 the team.

12 And there are a number of graphics  
13 that come with this. The graphics are all works  
14 in progress. I don't want you to focus too much  
15 on the graphics. But graphics going from native  
16 or baseline ecosystems to disrupted ecosystems  
17 with changes in composition, function.

18 And the chapter highlights the special  
19 concern for particular habitats like coral reefs  
20 and sea ice ecosystems. That's key message one.

21 Key message to is primarily, is  
22 focused primarily on the risks to fisheries. It

1 says that the nation's valuable marine fisheries  
2 and fishing communities are at high risk from  
3 climate driven changes in the disruption, timing,  
4 and productivity of fishery related species.

5 It talks about this trifecta of  
6 warming, acidification, and deoxygenation as  
7 projected to increase those changes, reduce  
8 catches in some areas, and challenge effective  
9 management of those species, both fisheries and  
10 protected species.

11 And fishery management that  
12 incorporates climate knowledge can help reduce  
13 impacts, promote resilience, and increase the  
14 value in the face of changing conditions. That's  
15 message two.

16 And it comes, again, we're working on  
17 the graphics. This is one of the graphics we're  
18 considering including. This graphic is a series  
19 of projections of changes in the average percent  
20 change in the maximum catch potential.

21 And I don't have time here to go into  
22 that, but I'm happy to. The darker colors are

1 more negative changes, the dark brown here is a  
2 decline in about 30 percent or more. The lighter  
3 colors are increases in catch, maximum catch  
4 potential.

5 So again, these are, this is trying to  
6 summarize projections of how catch potential  
7 might change with the projected change in ocean  
8 conditions.

9 Message three is on extreme ocean  
10 events. That marine ecosystems and coastal  
11 communities that depend on them are at risk of  
12 significant impacts from extreme events, with  
13 combinations of high temperatures, low oxygen, or  
14 acidified conditions.

15 And as you can imagine, this is  
16 building out of a lot of the experience of the US  
17 ocean areas over the past four years where we've  
18 seen some significant extreme particularly hot  
19 water events both on the east coast in 2012 and  
20 the west coast through, really from 2014, '15,  
21 and '16.

22 These unusual events will become more

1 common, are projected to become more common and  
2 more severe in the future, and that they expose  
3 the vulnerabilities that can motivate change,  
4 including technological innovations to detect  
5 forecasts and mitigate adverse condition. Try to  
6 be a little bit positive there.

7 And again, graphic in works, but again  
8 highlighting some of the major extreme ocean  
9 events, primarily extreme ocean temperature  
10 events, east coast in 2012 and west coast since  
11 about 2014.

12 So again, in summary, the National  
13 Climate Assessment is out. It is making, it is  
14 progressing. This is a significant time for  
15 input. Volume one is there, it's the factual  
16 basis on which volume two has been drafted. And  
17 that's the one that we're seeking comment on.

18 It's again focused on what do we value  
19 and what's at risk. So opportunity for input, we  
20 would love it if you all would be interested in  
21 reviewing and perhaps providing comment on the  
22 oceans and marine resources chapter.

1           It's important to say both what did we  
2 perhaps get right, or what did you like, what is  
3 clear, what did we get the right issues, what did  
4 we miss. How to improve it, what's missing.

5           Consider reviewing the regional  
6 chapters. Are there marine and fisheries issues  
7 even discussed? What stories need to be added to  
8 those. There are other chapters where there are  
9 ocean and marine related issues like health and  
10 ecosystems.

11           And the comments go through the USGCRP  
12 website which is there, and it closes January  
13 31st. Thank you for your time and your interest.

14           CHAIR BEIDEMAN: Thank you. At this  
15 time I heard a beep a little bit ago. So I'm  
16 checking to see if Rassela Feliciano is on the  
17 telephone.

18           MR. CUNNINGHAM: It's Rick Cunningham.

19           CHAIR BEIDEMAN: Oh, Hi Rick. How are  
20 you?

21           MR. CUNNINGHAM: I'm getting there,  
22 thank you.

1                   CHAIR BEIDEMAN: Good. Good to hear.  
2 We're sorry you're not here in person, but we  
3 know you're here in spirit. And now on the  
4 phone.

5                   So, we were just wrapping up a  
6 presentation from Roger. And so I guess now I'm  
7 going to open it to questions from the panel.  
8 And Pam, you're in a queue.

9                   MEMBER YOCHAM: Okay, thank you. You  
10 mentioned in your first presentation that most of  
11 the research that's going on has to do with  
12 temperature as opposed to some of the other  
13 stressors.

14                   And during the webinar that Andrew  
15 Pershing did on this report, one of the things  
16 that came out in the discussion afterwards was  
17 that yes, there are multiple stressors. But that  
18 increasing ocean temperatures swamp the others.  
19 And so that's why there's the focus.

20                   And I'm just wondering, is that  
21 because that's where the research has been, or is  
22 it that we know that it's mostly temperature and

1 so that's why the focus is on temperature as  
2 opposed to say ocean acidification or, you know,  
3 some of these other things that you said were  
4 where research is maybe lacking.

5 MR. GRIFFIS: Yes, great question.

6 MEMBER YOCHER: So which came first,  
7 chicken or the egg?

8 MR. GRIFFIS: Yes. No, great  
9 question. I think it primarily has to do with  
10 the actual magnitude of the drivers. I think  
11 that temperature is changing very quickly. It  
12 has such direct effect on productivity and  
13 species behavior and recruitment and all those  
14 things.

15 So I think there's no question that  
16 the focus is right on the right thing. I think  
17 the concern is that that's not the end of the  
18 story. That there are synergistic effects. And  
19 there's, you know, a lot of great work, not  
20 enough, but great working going into the, trying  
21 to understand ocean acidification.

22 I think while there's great concern



1 about that, it's less clear when kind of the  
2 impact that that's currently having on a broader  
3 group of species, whereas in temperature it is  
4 clearly having a major impact on many species  
5 right now.

6 So I think, you know, we need to be  
7 thinking about the synergistic effects. And  
8 there's no question that there's this looming  
9 concern about changing oxygen levels. Salinity  
10 too, particularly on the east coast. But I think  
11 that's what I would say as far as the story.

12 I don't think it's a bias on where the  
13 money has been. I think it's actually a pretty  
14 accurate zooming in on the major stressor at the  
15 moment, yes. Thank you.

16 CHAIR BEIDEMAN: Bob?

17 MEMBER GILL: Madam Chair. Thank you,  
18 Roger, for the presentation. It seems to me in  
19 the context of this subject that the name of the  
20 game is change, right? But it also seems to me  
21 that from my purview that the focus is on the bad  
22 things fixing to happen, or perceived are fixing

1 to happen.

2 And so what gets lost in all of this  
3 is there are some good things that are also going  
4 to result. Now granted, they may be a small part  
5 of the pie. For example, as you mentioned, EOC  
6 range increases in some species of fish that we  
7 haven't seen before that are directly related.

8 But my sense is that any of that  
9 positive stuff tends to get drowned out by all  
10 the negative stuff. Right, wrong? Would you  
11 comment on that perception?

12 MR. GRIFFIS: Yes. I think it's  
13 important to tell a full story. And I think the  
14 story is about change. I think a lot of work  
15 still needs to be done to determine how you want  
16 to label the change.

17 I don't know, for example, that  
18 expanding range of black sea bass or croaker is a  
19 good thing. It may be. I think it sets us up to  
20 ask some very interesting questions about will  
21 these be future fisheries, are there  
22 opportunities to take advantage of.

1           So I understand your point and I agree  
2 with you. I think we, and I think we are. All  
3 of these data sets, they really play out, you  
4 know, 80 different species and you can see the  
5 winners and losers, if you want to say, from a  
6 species, the range shifts.

7           And I think that's the conversation we  
8 should be having is what are the implications,  
9 are there opportunities here. But as this  
10 gentleman, the gentleman there indicated, I think  
11 any of those present, you know, some real  
12 management challenges, even to think about how  
13 would we establish new fisheries and on what time  
14 scale with what constraints.

15           And so it's a great point. I think  
16 some of the examples we use probably are for some  
17 of the species that we think are going to have  
18 either some of the most rapid change or some of  
19 the most dramatic change affecting our current  
20 fisheries.

21           So the lens is off in about how would  
22 this affect current situation. But I agree with

1 you, we need to be telling that range of  
2 opportunity stories. Yes, thank you.

3 (Off microphone comments.)

4 CHAIR BEIDEMAN: Bob?

5 MEMBER RHEAULT: I brought this up  
6 with Cisco earlier. When I look at these  
7 vulnerability analyses, there's tremendous  
8 uncertainty on certain aspects of it. And I  
9 think it's really important that we admit that  
10 these are projections based on what we think is  
11 going to happen, but we really need to invest in  
12 better science so we have better certainty around  
13 some of these projections, so that we know how  
14 for instance ocean acidification is going to  
15 affect critical stocks such as lobster and sea  
16 scallops which make up so much of those  
17 vulnerability projections.

18 And I don't know whether that's  
19 reflected well in this, but I'm going to do a  
20 deeper dive and try and make that recommendation.

21 MR. GRIFFIS: Couldn't have said it  
22 better. Thank you.

1 CHAIR BEIDEMAN: Peter?

2 MR. GRIFFIS: I might make one point  
3 on that. I think if you're referring to  
4 certainly here, recommendations here. The teams  
5 were limited in the kind of recommendations they  
6 could make in their chapter. So I encourage you  
7 to look at it. Look at the recommendations.

8 We were encouraged to make  
9 recommendations on key next steps, advances, how  
10 to advance it. Even to what are steps that would  
11 help advance the actual adaptation, not just the  
12 knowledge base. So, but what am I trying to say?

13 While being policy neutral is what I'm  
14 trying to say, which is interesting. But also,  
15 we were severely constrained. I'm speaking as an  
16 author now, trying to help write this thing. Six  
17 pages is very hard. But please, help us improve  
18 it. Thank you.

19 CHAIR BEIDEMAN: So, Peter?

20 MEMBER MOORE: Yes. Hey, Roger.  
21 Thank you for that. I guess it sort of follows  
22 Bob's comment. But I think the first time that I

1 was sort of, my eyes were open on, you know, for  
2 instance sea level rise was when you would see  
3 the actual and a projection, and then a  
4 correction the next year that showed the  
5 projection was low.

6 And the hockey stick kept getting  
7 sharper, or the curve kept getting sharper when  
8 you added the actual in each year overlaid with  
9 what the previous projection was.

10 And I think that for people who don't  
11 believe that this is all happening for some  
12 reason, to see something like that which is an  
13 actual measurement and a former projection, and  
14 then what is the current over that former  
15 projection is tremendously impactful in helping  
16 people understand not just that it is happening,  
17 but what the rate of speed is that it's  
18 happening.

19 And I know in my experience in the  
20 Gulf of Maine, which really doesn't go back to  
21 probably mid '90s, was shrimp. There's no  
22 shrimp. There was 20 million pounds landed when

1 I first got there in 1995.

2 And so I think that this is a really,  
3 this information and Vince's work is so important  
4 for policy makers to see. And to Bob Gill's  
5 point, what are the positives. I'm not sure  
6 there, I don't really feel like there's  
7 positives.

8 And when you start screwing around at  
9 this scale with this ecosystem, you're saying  
10 there's a very large kettle and it's gotten very  
11 hot. That's, you know, we have a \$450 million  
12 scallop fishery and a \$450 million lobster  
13 fishery. I can tell you that croker isn't going  
14 to replace that value.

15 So it's, you know, I don't see a lot  
16 of positive coming along as the species move out,  
17 personally, to replace that kind of level of  
18 economic opportunity. But I think that that kind  
19 of sort of, or not retrospective. I guess it  
20 would be the reality overlaid with the projection  
21 is pretty effective, the ones that I've seen to  
22 date.

1                   MR. GRIFFIS: Yes. Yes, thank you.  
2                   I think you're right on. I think we can do a  
3                   much better job of showing, visualizing this. In  
4                   January or February, the new paper will come out,  
5                   or I'm hoping we get a next chance to really do  
6                   this.

7                   It will combine, you know, as you  
8                   know, we've assembled the shifts in distribution  
9                   of species over the past 40 or 50 years from all  
10                  our stock surveys on each coast. If you can go  
11                  see that visually, where the center of the  
12                  distribution is shifted for each species, choose  
13                  your species, choose your region, it's at a  
14                  website called ocean adapt.

15                  It's a partnership between us and  
16                  Rutgers. There's the historical trend, and it's  
17                  really quite powerful, you know, look at black  
18                  sea bass or cod and see how they've retreated or  
19                  advanced northward, or gotten deeper.

20                  But what that group is going to add to  
21                  that in this next iteration and paper that will  
22                  come out, again early in 2017, is the projection



1 side of that story. So I think that's what I was  
2 picturing as you were talking.

3 It will combine where have they gone  
4 real life in the past 50 years. How have they  
5 shifted. And they will use then the projections  
6 on where we think they're going to go if they  
7 follow their pattern over the next 20, 40, and 60  
8 years. I think that will be a transformative  
9 moment because of the visual on it, and people  
10 will be, it will trigger a whole bunch of other  
11 questions. So, thank you.

12 CHAIR BEIDEMAN: Thank you. I want to  
13 make, before I go to Bob, an announcement to  
14 folks. If you're interested in going to the  
15 recreational subcommittee meeting, they're in the  
16 process of setting that up. But it's just in the  
17 adjacent, where the food was, area.

18 So now I'll go to Bob. But I think  
19 Roger is going to be here for a little bit. So  
20 if there's questions, you could ask him. But  
21 let's go ahead. We have two more in the queue,  
22 and then we're done.

1                   MEMBER GILL: Thank you, Madam Chair.  
2           Another thought, Roger, is that one of my, what  
3           did I say, discomfitures in fishery science is  
4           that we know we have increasing uncertainty with  
5           time. We don't know how to quantify it.

6                   So when I see these long projections  
7           out there, and typically they're presented as a  
8           number, there's usually nothing mentioned in  
9           terms of oh, guess what, it may be plus, minus  
10          200 percent.

11                   So when I see an 80 year projection,  
12          I really get uncomfortable. So my suggestion is  
13          that, you know, we do the best we can with what  
14          we have, and I understand that.

15                   But somewhere along the way, those who  
16          see that need to understand that the further out  
17          you go, the far more uncertain it gets. And for  
18          example, in the Gulf SSC, when we make an ABC  
19          recommendation, we rarely go beyond three years.

20                   And if it's really good, we might go  
21          out to five, but no further for that very reason,  
22          because Lord only knows. So I would urge some

1 visibility to the fact that the further out we  
2 go, the less certain we are about it. And the  
3 divergence could be rather huge.

4 MR. GRIFFIS: Agreed. Thank you, sir.

5 CHAIR BEIDEMAN: Okay, so I have  
6 another person in the queue, but I'm going to  
7 turn it over to our subcommittee chair for  
8 ecosystem. Is that correct?

9 MS. LOVETT: Or me.

10 CHAIR BEIDEMAN: Or you. All right.

11 MS. LOVETT: Hi. Ripp, are you on the  
12 phone still?

13 MR. CUNNINGHAM: Yes, should I switch  
14 over to the other line?

15 MS. LOVETT: Yes. So we've sort of  
16 continued the conversation with Roger since he's  
17 here, but the recreational fishery crowd has  
18 moved themselves to the other room. They're just  
19 setting up. So if you dial in that other number,  
20 you'll be with the other group.

21 MR. CUNNINGHAM: Terrific, thank you.

22 MS. LOVETT: You're welcome.

1 CHAIR BEIDEMAN: Thank you.

2 MS. LOVETT: Thanks for joining us.

3 (Off microphone comments.)

4 CHAIR BEIDEMAN: Okay. Then the  
5 formal meeting of MAFAC is closed, and we're  
6 convened to a subcommittee for ecosystem.

7 MS. LOVETT: So transcription is going  
8 to end.

9 CHAIR BEIDEMAN: Thank you.

10 (Whereupon, the above-entitled matter  
11 went off the record at 3:03 p.m.)

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