

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

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MARINE FISHERIES ADVISORY COMMITTEE

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SPRING 2023 MEETING

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WEDNESDAY

MAY 31, 2023

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The Committee met at the Westgate Hotel,
1055 Second Avenue, San Diego, California, at 9:00
a.m., Megan Davis, Chair, presiding.

MEMBERS PRESENT:

MEGAN DAVIS, Ph.D., Chair; Research Professor,
Aquaculture, Florida Atlantic University,
Harbor Branch Oceanographic Institute

JANET COIT, Assistant Administrator, National
Marine Fisheries Service (ex officio member of
MAFAC)

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

SEBASTIAN BELLE, Executive Director, Maine
Aquaculture Association*

ROGER BERKOWITZ, Founder and Head Fishmonger/CEO,
Roger's Fish Co.

DAVID DONALDSON, Executive Director, Gulf States
Marine Fisheries Commission (ex officio member)

THOMAS "TOM" FOTE, Retired, Recreational
Fisherman*

NATASHA HAYDEN, Vice President of Lands & Natural
Resources, Afognak Native Corporation

DONNA KALEZ, Owner and Manager, Dana Wharf

Sportfishing and Whale Watching
SARA McDONALD, Ph.D., Director of Conservation,
South Carolina Aquarium
MEREDITH MOORE, Director, Fish Conservation
Program, Ocean Conservancy
STEFANIE MORELAND, Director of Government
Relations and Seafood Sustainability, Trident
Seafoods
LINDA ODIERNO, Fish and Seafood Development
Specialist
JOCELYN RUNNEBAUM, Ph.D., Marine Scientist,
The Nature Conservancy
ERVIN "JOE" SCHUMACKER, Marine Scientist,
Quinault Department of Fisheries, Quinault
Indian Nation
SARAH SCHUMANN, Fisherman; Owner/Principal
Consultant, Shining Seas Fisheries
Consulting, LLC*
PATRICK ``PAT`` SULLIVAN, Ph.D., Professor Emeritus,
Department of Natural Resources, Cornell
University
CLAYWARD "CLAY" TAM, Cooperative Fisheries
Research Coordinator, Pacific Islands
Fisheries Group
BARRY THOM, Executive Director, Pacific States Marine
Fisheries Commission (ex officio member)
MATTHEW UPTON, General Counsel and Director of
Catcher Vessel Operations, United States Seafood
BRETT VEERHUSEN, Principal, Ocean Strategies
RICHARD YAMADA, Owner, Shelter Lodge

NOAA/NMFS STAFF PARTICIPANTS PRESENT:

JENNIFER CHUNG, Senior Counsel for Advisory
Committees, Information Law Division, OGC/
Department of Commerce*
RUSS DUNN, National Policy Advisor for
Recreational Fisheries, NOAA Fisheries

BEN FISSEL, Industry Economist, NOAA Fisheries*
ELLIOTT HAZEN, Research Ecologist, Southwest
Fisheries Science Center, NOAA Fisheries
REBECCA HERMANOWICZ, Ethics Attorney, Department
of Commerce*
JIM LANDON, Acting Deputy Assistant Administrator
of Operations, NOAA Fisheries
DOUG LIPTON, Senior Research Scientist for
Economics, NOAA Fisheries*
HEIDI LOVETT, Alternate Designated Federal
Officer, NOAA Fisheries
JENNIFER LUKENS, Director, Office of Policy
and MAFAC Designated Federal Officer, NOAA
Fisheries
BARBARA MUHLING, Project Scientist, Southwest
Fisheries Science Center, NOAA Fisheries
SAM RAUCH, Deputy Assistant Administrator of
Regulatory Programs, NOAA Fisheries
SARAH SHOFFLER, National Seafood Strategy
Coordinator, NOAA Fisheries
CISCO WERNER, Ph.D., Director, Scientific
Programs and Chief Science Advisor, NOAA
Fisheries
KATIE DENMAN ZANOWICZ, Policy Analyst, Office of
Policy, NOAA Fisheries
ALSO PRESENT (NOAA/NMFS STAFF AND VISITORS):
CAREN BARCELÓ, NOAA Fisheries*
CARDEN BARKLEY, Advisor to the NMFS Deputy
Assistant Administrator for Operations (Acting)
ROGER BEN
STEVEN BOGRAD, NOAA Fisheries*
LORETTA BROWN, Salmon State*
CORINNE BURNS, NOAA*
TIM CAMPBELL, NOAA*
LISA COLBURN, NOAA Fisheries*
BILL DEWEY, Senior Director of Public Affairs,
Taylor Shellfish Farms
DORI DICK, NOAA*
LAURA DIEDERICK, External Affairs Lead, Office of
Communications, NOAA Fisheries
BOB DOOLEY*
JAMIE GOEN, Executive Director, Alaska Bering Sea
Crabbers

ROGER GRIFFIS, NOAA Fisheries*
 JOE GUERRERO*
 JAMES HILGER, NOAA Fisheries*
 ANNE HOLLOWED, Affiliate Professor, School of
 Aquatic and Fishery Sciences, University
 of Washington
 JUSTIN HOSPITAL, NOAA Fisheries*
 MIKE JACOX, NOAA Fisheries*
 STEVE JONER, Makah Fisheries Management*
 CHARLES KAAIAI, Indigenous Program Coordinator,
 Western Pacific Regional Fishery Management
 Council
 MELISSA KARP, NOAA Fisheries*
 DREW KITTS, NOAA Fisheries*
 KRISTEN KOCH, Director, Southwest Fisheries
 Science Center, NOAA Fisheries
 ROSEMARY KOSAKA, NOAA Fisheries*
 LINDSEY KRAATZ, Senior Science Advisor, NOAA
 Fisheries
 MICHELLE MCGREGOR, NOAA Fisheries*
 SEAN McNALLY, Senior Advisor to the
 Assistant Administrator for Fisheries
 SARAH MESNICK, NOAA Fisheries*
 SCOTT MILLER, NOAA Fisheries*
 WENDY MORRISON, NOAA Fisheries*
 KATE NAUGHTEN, Director, Office of
 Communications, NOAA Fisheries*
 STEPH OAKES, NOAA Fisheries*
 MATEO PAZ-SOLDAN, MP Strategies*
 JAY PETERSON, NOAA Fisheries*
 NICOLE PITTS, NOAA FISHERIES*
 WILL POSTON, American Saltwater Guides Association*
 KRISTEN RICKETT, Meeting Manager, HB & Company,
 Inc.
 GRACE ROSKAR, NOAA Fisheries*
 TIM SARTWELL, External Affairs, Office
 Communications, NOAA Fisheries
 TARA SCOTT, NOAA Fisheries*
 ERIC SHOTT, NOAA Fisheries*
 ELIZABETH SIDDON, NOAA Fisheries*
 DALE SQUIRES, NOAA Fisheries*
 STEPHEN STOHS, NOAA Fisheries*
 DANIEL STUDDT, NOAA Fisheries*
 CODY SZUWALSKI, Fishery Biologist, NOAA Fisheries*
 MAUREEN TRNKA, Advisor to the Deputy Assistant
 Administrator of Regulatory Programs, NOAA
 Fisheries

DANIEL VILAS, University of Washington*

STEPHANIE WARPINSKI, NOAA Fisheries*

ZACH YAMADA, Western Pacific Regional Fishery
Management Council*

*participating via webinar

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

9:04 a.m.

CHAIR DAVIS: Good morning everyone. I am officially opening our meeting for the next few days, and I am turning it over to Jennifer for opening remarks as well.

MS. LUKENS: Good morning, everyone. Welcome to San Diego. I am Jennifer Lukens. I'm the Director of Policy for NOAA Fisheries, and also, as you just learned, I am the Designated Federal Official for the FACA Committee here today. I have one of the extremely important roles of going over some more lingo language with you all, which is the privacy statement.

Bear with me. It's important, but it's a little long, so I hope you have your coffee ready as I go to read this out for you. I'm only going to do this today, but it can also be found on our website.

So pursuant to the Privacy Act of 1974, agencies are required to tell people what our authority is for collecting personally identifiable information or PII from them. The purpose of the

collection, how we are using or sharing the PII and whether or not the person can refuse to provide the PII and what, if any, is the consequence of refusing to provide their PII.

In order to collect PII at all in the system of records, even if a company and by a Privacy Act statement, we also have to notify the public generally of this collection, which is what we are doing with this statement. There is also a statement posted on the MAFAC meeting site.

We're sharing this because we want you, as participants in this meeting and public commenters, not to provide PII business identifiable information, BII or controlled, unclassified information, CUI, during recorded virtual conferences. Speakers, sessions, presentations and any public comments during a federal advisory committee meeting are made publicly available in today's webinar.

We are not recording the webinar, but the audio is being recorded by the telecommunications company for the purposes of creating a transcript. The purpose of noting all of this is that an

individual's permission is required for use of photographs, video and audio in any format used for communications, outreach, interviews and dissemination of mission products intended to promote an awareness and appreciation of the environment and NOAA's science, service and stewardship roles.

NOAA's websites and social media outlets must not collect any personal information from children under the age of 13, unless parental permission is provided in writing. Please make sure that no young children are in the background at all while you are on screen.

If that is a possibility, we suggest you blur your background or use a different background. And with that, I conclude our Privacy Act statement this morning, and I will turn it over to our Chair, Megan Davis.

CHAIR DAVIS: Thank you very much Jennifer, and what we'll start off with is going around the room, introducing yourselves, your name and your affiliation, and then I'll give a brief overview of our next few days, and then we'll follow that with

some leadership remarks from Janet. So thank you.
Let's start, let's start down with Katie.

MS. DENMAN: Hi everyone. I'm Katie Denman. I'm a policy analyst in the Office of Policy with NOAA Fisheries.

MS. LOVETT: Heidi Lovett, Office of Policy and your Assistant DFO.

MEMBER YAMADA: I'm Richard Yamada, MAFAC member from Juneau, Alaska. I'm a sport fishing lodge owner.

MEMBER TAM: Hello, Clay Tam here from the Western Region. Thank you.

MEMBER RUNNEBAUM: Good morning. Jocelyn Runnebaum from Maine.

MEMBER O'DIERNO: Good morning. I'm Linda O'Dierno, MAFAC representative. I am a consultant. I do development of promotional and marketing materials, and also public education.

MEMBER MORELAND: Stefanie Moreland, based in Seattle, work with Trident Seafoods and primarily active in Alaska Region and Pacific Northwest fisheries.

MEMBER McDONALD: Sara McDonald, Director of Conservation, South Carolina Aquarium.

MEMBER SULLIVAN: Pat Sullivan, Professor Emeritus, Cornell University.

MEMBER KALEZ: Oh hi, good morning everyone. I'm Donna Kalez from Dana Point, California. Welcome to sunny California. I promise the sun will come out. Thank you so much for coming. My operation is an hour north, Dana Wharf Sportfishing and Whale Watching, and this is beautiful and I can't wait to show you the fleet in the harbor.

MEMBER VEERHUSEN: You're going to make me try and turn it on. Good morning. Brett Veerhusen, Principal Ocean Strategies from Homer, Alaska, based in Seattle, Washington. Thank you for having us.

MR. LANDON: Good morning everybody. I'm Jim Landon, the Acting Deputy Assistant Administrator for Operations, NOAA Fishery, and the Director of the Office of Law Enforcement.

MS. COIT: Good morning, Janet Coit. I'm the Assistant Administrator at NOAA Fisheries.

MR. RAUCH: Good morning. Sam Rauch,

Deputy Assistant Administrator, NOAA Fisheries for Regulatory Programs.

MR. WERNER: Good morning. Cisco Werner, Chief Science Advisor, Director of Scientific Programs, NOAA Fisheries.

MEMBER SCHUMACKER: Good morning all. I'm Joe Schumacker, I'm the Marine Resources scientist with the Quinault Indian Nation on the coast of Washington state.

MEMBER HAYDEN: Good morning everybody. Natasha Hayden from Kodiak, Alaska, Tribal Council member, Native Village of Afognak and work for my Angsta Village Corporation, Afognak Native Corporation.

MEMBER BERKOWITZ: Roger Berkowitz, Boston, Massachusetts, formerly of Legal Seafoods and now Roger's Fish Co.

MEMBER UPTON: Morning. Matt Upton. I'm manage trawlers for U.S. Seafoods that operate off the coast of Alaska.

MEMBER MOORE: Meredith Moore. I'm the Director of the Fish Conservation Program at Ocean

Conservancy.

MR. THOM: Good morning. Barry Thom, Executive Director of Pacific States Marine Fisheries Commission.

MR. BEAL: Good morning. I'm Bob Beal. I'm the Executive Director of the Atlantic States Marine Fisheries Commission.

MR. DONALDSON: And last but not least, I'm Dave Donaldson, and I'm the Executive Director of the Gulf States Marine Fisheries Commission.

CHAIR DAVIS: Thank you all for those introductions, and I'd like also our guests to also introduce themselves. And who's that? Oh, excuse me.

Those that are attending by virtual, Sebastian and Tom.

MEMBER FOTE: My name is Tom Fote. Basically besides serving as a MAFAC member, I serve on Jersey Coast Anglers Association and for the last 30-something years as Commissioner to Atlantic States Marine Fisheries Commission for the state of New Jersey.

MEMBER BELLE: Good morning everybody.

Sebastian Belle from the great state of Maine. I run the Maine Aquaculture Association and I'm the current sitting president of the National Aquaculture Association and a member of MAFAC. Thank you.

CHAIR DAVIS: Thank you. Thank you for attending virtually.

(Pause.)

CHAIR DAVIS: Wonderful, thank you all. Thank you MAFAC members, Commissioners and also guests for being here today and NOAA leadership and staff. So this is the official welcome to San Diego. It's so great to see so many of you here, especially those that we haven't had a chance to see that are from the west coast. So thank you very much for coming, and Donna for hosting us on your side of the coast.

I know we also have some -- a host with Ken Franke this evening, so we're really looking forward. He's the president of the Sport Fishing Association yeah, and so that's very exciting as well.

We're looking forward to that. We also have Sarah Shoffler, who's going to be here -- I believe she'll be here, she's on the west coast here as well, and

will be talking with us.

I want to thank the NOAA staff, especially Katie and Heidi and Jennifer for all the planning that they do and all the help with the Committee work. So thank you very much, and also to NOAA leadership for being here. We're looking forward to hearing from you, updates from your areas of specialty.

So we have a very exciting few days together. We have a lot of committee work that's being done and especially in the climate-ready fisheries. We have Meredith and Jocelyn, who have been working very hard with their committees and we're going to have some exciting panels tomorrow, so we're looking forward to that.

And you heard that some of the panelists are already here, and then the other committees have also been working with the protected resources with Sarah and also strategic planning and budgeting with Stefanie. So there will be some time for some committee work and report out on that as well.

And so I wish you all a very productive and engaging meeting, I know it will be, and looking

forward to helping you facilitate as your chair. So with that, I think that we are ready to, let's see Jennifer or Heidi, do you have any other things that you'd like to add?

MS. LOVETT: Okay. Just a quick announcement for that reception tonight that Ken Franke and the Sport Fishing Association of San Diego are so graciously hosting. We are asking for just \$10 to help cover some of the costs of that, and that avoids ethics issues.

And then we do have, just so you know Megan, Sarah Schumann is having a little difficulty but will be joining us shortly.

CHAIR DAVIS: Okay, thank you for that Heidi. All right. So I'd like to have Janet Coit, who is our Assistant Administrator of NOAA Fisheries.

She's going to provide us an overview. So we welcome you, Janet, and we look forward to your update and overview and dialogue with the MAFAC members.

MS. COIT: Thank you, Megan. Great to see everyone, wonderful to see everyone. Those of you who are here in person, some of whom I think for me it's

the first time, I'm going to have the opportunity to meet you in person. Those of you virtually, Sebastian and Tom and Sarah when she can get here and Kelly when she can make it, we'll do our best to include you.

I know it's more difficult to not be in the room, but really appreciate your presence virtually. I really cannot emphasize enough the importance of the issues that are on the agenda that we're grappling with at NOAA Fisheries and that you are addressing and advising us on here at MAFAC.

I'm thrilled that you have leadership of NOAA Fisheries here, and I think that demonstrates the importance of this meeting and MAFAC in general. I do want to apologize in advance that I have never in my almost two years in this position had more competing demands all at the same time as I do this week.

That is somewhat true for Sam, Cisco and Jim too, so I know I'm going to have to be in and out a bit and miss some things unfortunately. Sam's here today and then has to take off. So you've got all of us. We want to dialogue. We will participate. We will be present as much as we can, but I know I've got

a crazy set of things coming at me this week.

I wanted to also welcome Kristen Koch. As she mentioned, she's the head of Southwest Fisheries Science Center right up the road in La Jolla, and she oversees over 300 researchers and support staff and several field stations in California. Works closely with Scripps and others on seafood, sustainable seafood issues, fascinating aquaculture research, important work on surveys from Antarctica to coordinating with Mexico and Canada.

Please get the chance to speak with Kristen. We're so thrilled that she's here, at least today. As I did an all staff yesterday with her staff, one of the comments that I wanted to share that's stuck with me from that was one of her scientists who said how -- who said do you think people understand what the NOAA scientists, the NOAA Fisheries scientists do, and do you think they know why it's important and how it's related to things that they care about?

She asked the comment out of frustration, feeling that we're not doing a good enough job of

communicating what we do, why it matters and I think it's something you've grappled with before, but we could really use your advice and your ambassadorship on that score. So I'd love to have some informal conversations about that.

I also am excited to share that we recently announced the hiring and the addition of Jennifer Quan. She is the new head of our west coast region. She comes to us from, directly from several years working for the Majority in the Senate Commerce Committee. She started her career as an observer, working out of the La Jolla Southwest Fisheries Center.

But she's had a really rich career, focused on salmon science and policy, and she started about a month ago. We're very thrilled. She fills the shoes of Barry Thom, who's been almost a year in his new position, and so gosh, we couldn't be more thrilled to have her on board.

I also would like to note, although she's not here, that another senior team member, Katie Westfall, joined us from the Environmental Defense

Fund, her most recent assignment, where she worked closely with the fishing industry, and she is working with me and Sam and Jennifer on offshore wind, focused entire on policy, outreach, engagement, permitting surrounding offshore wind.

Katie started her career at NOAA long ago as a Sea Grant Knauss Fellow, and she worked for the Office of Representative Jared Huffman in that capacity. Super-excited that we're hearing about Future Seas later also.

So Dr. Elliott, he's in -- who introduced himself, is also from our Southwest Fisheries Science Center, and that interdisciplinary effort surrounding the impact of climate change should help set the stage for your discussions and be very informative and hopefully provocative, as we look at the challenges surrounding climate change and the work that you're doing on exploring how science-based fisheries management can adapt to and predict and explore approaches to management that are part of what we're terming climate-ready fisheries.

And so the panels that you all have put

together on that are just fantastic. We hope with your work to put more definition around that, again in a way that people can relate to and to attract more funding and to identify regional pilots where we can demonstrate the tangible impact.

So that's to me one of the things that you've taken on that I think is extremely consequential and timely for us at NOAA Fisheries.

Okay. I wanted to go over quickly some of the top priorities of NMFS that relate to MAFAC's agenda. So again, offshore wind. That's a pillar of President Biden's climate change mitigation strategy, and as we move aggressively as an administration to reduce emissions, CO2 emissions and to slow the rate of climate change that's affecting our ocean health, one of the ways that we're approaching that is expanding offshore wind.

We discussed this at the last meeting, to determine this amount of pressure and work on NOAA Fisheries as we work on the regulatory pieces under the Marine Mammal Protection Act, the Endangered Species Act, the Magnuson-Stevens Act, as we try to do

all of that and seek a responsible, sustainable approach to offshore wind development.

It's moving quickly. We're working hard to have feedback loops and identify research information that is missing as we move forward to review and permit these facilities. The 30 gigawatts of offshore wind energy by 2030 goal, and the 15 gigawatts of floating offshore wind energy by 2035 are paired with a commitment to protecting biodiversity and other ocean uses.

So we've been working very hard with BOEM, with the White House, across the U.S. government, to inform with our science the siting of these projects, to work hard to avoid and minimize impacts and then to work on mitigation strategies involving our surveys, involving impacts to marine mammals, involving impacts to the fishing sector.

There is increasingly, as offshore wind expands to the other coasts, more folks from the fishing industry who are seeking us out and asking us to be advocates and work with them, and we have a challenge on the statutory policy front, as well as a

big workload associated with offshore wind. So it's had an out-sized, I think, impact in terms of the resources and the attention needed from NOAA Fisheries.

To that extent, and Sam may speak more to this, you know, a huge focus has been increasing staffing and working really in the statutory context that limits or prescribes, I should say, what we can do to do that as effectively as we can, and to be forward-looking in terms of the resources that are impacted and the mitigation measures that we need to look at cumulatively, not just project by project.

We have been successful at garnering more resources. This fiscal year, we have an additional 13 million to both work on the survey mitigation and to hire more staff. We've had two projects completed through to fruition. We have ten projects in the permitting phase right now.

We've been working on the Marine Mammal Protection Act permits. We've been working on the NEPA documents and we have been working very hard with BOEM to improve the coordination and the forward-

looking aspects of their program. You know they held 11 offshore wind lease sales already. We anticipate there could be four more in the next couple of years in Gulf of Mexico, Gulf of Maine and off the coast of the Central Atlantic and the Pacific.

We are having a challenge across on something you discussed, across NOAA Fisheries on hiring at the pace that we need to. So we've brought on so far this fiscal year approximately 20 new employees, but we have active recruitment going on to fill an additional approximately 50 vacant positions around offshore wind.

The two more things on offshore wind. One is our survey mitigation strategy, which is really important and Cisco will address more some of the ways that we're looking to calibrate and use new technologies to augment and ensure we can move forward with our long-standing surveys.

That does not come with funding. We have to request that funding each year. So that's an area that it's important to explain the importance of those surveys to optimizing sustainable yield. We have a

right whale mitigation strategy that's in a draft format, and we've had lots of comments that we're finalizing, with hopes on having on the Atlantic coast a more comprehensive take, a comprehensive prescription in terms of what you need to do to mitigate impacts on endangered North Atlantic right whales.

We are working closely with the Ocean Service on the marine spatial planning aspects, and feel that, as we look to the future of offshore wind, that working together with BOEM on that siting aspect is the most fruitful in terms of both minimizing impacts and having a smooth, regulatory route.

The impacts on the fishing community. We've given technical input and information to BOEM on some draft guidance that they have that they're continuing to consult on. That's an area where we would like to see further policy development, to make sure that the impacts on fishing that might be displaced or effort that might be reduced due to offshore wind is fairly compensated.

I can say from my experience in my

previous jobs, but with the fishing industry, nobody wants to be bought out. They want to have an opportunity to continue to fish, and there are -- there's hopes that fishing will happen in and around these wind farms, but that is unproven. So the community engagement aspect through the Councils, through the fishing community is an area where we're interested in seeing if that can be more meaningful in terms of having an impact on the outcomes.

But the bold ambitions around offshore wind are something that we're part of, and it is a fascinating and complex area. I think we've made a lot of headway in the last couple of years, including improving our working relationship with the Bureau of Ocean Energy Management.

Okay. That was a lot on offshore wind. Another area that Sam's going to speak to that's been a focus of this administration and certainly a passion of mine is the work that we're doing on equity and environmental justice. We appreciated so the input from MAFAC, the really thoughtful input. I hope you'll see your fingerprints on our final strategy

that was released last week.

PARTICIPANT: Last Monday, Monday a week ago.

MS. COIT: Oh, Monday a week ago, and Sam will be speaking about it later. But I did want to point out that relatedly, we also earlier in May released an advanced notice of proposed rulemaking, an ANPR around our national standards. We talked about this at our last MAFAC meeting, because it was something that was kind of in the works around some of the national standards that haven't been updated, one of them for 25 years, on the others for 15 years.

If you read the Federal Register notice, which I commend to you, it talks about the impacts of climate change. It talks about our interests in proving equity and access to fisheries, and asks for feedback around three specific national standards for, which is in regards to discrimination and allocation of fish.

Eight, which is in regard to supporting coastal communities, and nine, which is in regard to reducing bycatch. Certainly in my mind, those are

integrally related to our EEJ work.

I want to thank you Sam, because he's been a tremendous leader empowering others to do this work, and the staff people that he would definitely recognize and commend. When he speaks about this, he did a really great job. Having said that, it's kind of the end of the beginning. We have a strategy that we need to implement it, and we expect it to change and grow as we get more input and ideas.

I wanted to just mention that our meeting last week, our CCC meeting, Council Coordination Committee meeting, there was a lot of interest from western Pacific and the Caribbean in not just talking the talk but walking the walk, and they're -- they feel that they've already been on the vanguard of these types of issues and need more attention, more resources to gathering science, to listening to the voices of people who don't have the same representation in Congress.

And it's a place that they appropriately call their attention to as saying we've got a lot of work to do.

Next, I just wanted to mention -- so shifting gears here, the National Seafood Strategy. Super-excited to have that Strategy issued, which will probably be -- I'm pushing Jim on that, to do it as quickly as we can. But we did get more, a lot of great input when we were at the Seafood Expo in Boston in March, and an explicit ask for more time for people to comment on that Strategy.

Some of you may remember, it's the second time we were talking about the Strategy. The Strategy is intended to underscore our commitment to the seafood sector. It aligns with the administration's goals. It also aligns with what we're talking about, you know, climate-ready fisheries, aquaculture.

I won't get into the Strategy because I know we have a session on it, but it does incorporate some of your thinking and suggestions. To me, back to the comments I mentioned from yesterday, it offers us an opportunity to talk about how we're doing at NOAA Fisheries.

It has an impact of putting food on the table of American families, of supporting communities,

of promoting healthy, sustainable, wild harvest and grown seafood that I'm looking forward to.

We're doing it anyway, but we could do it better, and the pillars of that Strategy are primarily things that are right in our wheelhouse, with some interest in working with other U.S. government entities and expanding, expanding the role of NOAA through our leverage and through our influence, and by that I'm thinking of USDA and food programs, USTR and trade programs. So more to come on that, but excited about working with you on that.

The climate-ready fisheries, I can't say too much more than one of the things coming at me right now is we hope to be announcing our plans for the Inflation Reduction Act spending next week and that, you know, the opportunity through the Congressional action supported by the President to have additional resources at NOAA to put towards science and climate-ready fisheries, the management and focusing on some of the species of most concern is kind of a dream for us.

So I think a lot of my colleagues are used

to a scarcity mind set, and we suddenly have resources to put to priority areas. So super-excited about the potential there, and the announcements coming next week. The work that we've done so far under the Bipartisan Infrastructure law has allowed us to fund many, many significant projects to restore habitat, to reconnect rivers, to build capacity in urban areas, and that's been -- is also part of promoting climate-ready fisheries.

And all the themes that we're talking about, the IRA announcements are coming next week. We're also about to embark on the second round of the big Bipartisan Infrastructure law funding notices of availability, and Carrie Robinson of our Office of Habitat Conservation and her team have been the lead on that.

I mention that in part because it's been a real bright spot. So find it exciting to work on these conservation projects, and so important that we get the word out and make sure that folks are benefitting from the opportunity to have these grant programs at levels at which we've only dreamed of

before, and potentially can put even additional funding into them through IRA.

So I'm talking about habitat restoration, I'm talking about fish passage, I'm talking about helping communities build the capacity to do these types of projects. And the -- all of those funding mechanisms are focused on our equities. So they have to be connected to fisheries, they have to be connected to -- or protected species or the things that we're responsible for.

We've been trying to -- this year marks the 50th anniversary of the Endangered Species Act. A few, maybe a month or so ago I was up in Cape Cod Bay with the head of our Office of Protected Resources. I'm able to see for the first time a mother North Atlantic right whale and her calf, which was very exciting for me. That was the first North Atlantic right whale day celebrated by the state of Massachusetts.

But we're trying to use that anniversary of ESA to talk about its successes, and the importance of protecting imperiled species and habitats upon

which they depend, and how our science and our work with states and our work with partners has helped us prevent species from going extinct.

I'm interested in talking further about ways of, you know, promoting the importance of that and the successes that we've had, because they're very challenging conflicts around listed species and I think it's important that we recognize the commitment that this nation has made to conserving biodiversity and the successes that we've had working with industry on all sorts of measures to reduce and mitigate impacts on, and working to hold the line here.

In California, the work that we're doing around salmon recovery is a major focus for Kristen in the Southwest Science Center for the west coast region.

And then finally, recreational fishing. This is the perfect place. Thank you so much, Donna, for all you've done working with our staff to put this meeting together, and to make sure that some of our recreational activities or site activities allow us to learn more and to meet people.

I really appreciate that. I know from the time you came on MAFAC, you wanted to get us to Dana Point. You talked about us coming out here, and I know that we've talked about the legacy of your father. I just feel that we're honoring that somewhat or hopefully as we are here with you in California, yeah. Thank you.

So we'll have some more talk. Donna has just a short time on the agenda, but to talk about our work and Tim Sartwell, who's also working on recreational fisheries, are here and I want to thank the Recreational Fisheries Subcommittee, and we have some time to talk about our policy update around recreational fishing.

And on Saturday I'm going out to help launch the recreational or the National Fishing and Boating Week. So that's all year round I'm sure for many of you, but it's an official national week that launches on June 3rd, June 3rd to 11th. I'm excited about the ways we can use that to spread the word. I'm excited to go out on a research vessel and do some fishing on Saturday morning.

All right. So in closing, I want to thank Jennifer, our Designated Federal Officer, and Heidi and Katie and the team for all you do every day in putting on this meeting. A lot goes into putting on these meetings and Megan, our talented chair, thank you so much for all you do to make, make this a very inviting place for people to share their thoughts and to advise us.

The diversity of this group is really important as a venue for us. I want to acknowledge that this is the last meeting for two of our important MAFAC members. We are very appreciative and very sad to see you go. So Roger Berkowitz and Sebastian Bell.

I believe this is your last meeting. We can't say enough about our gratitude for your contributions.

I am going to hand it back to Megan, and I look forward to the discussions over the next three days. Thank you.

CHAIR DAVIS: Janet, thank you so much for that great comprehensive overview and for all your work that you do for NOAA Fisheries and your staff and leadership team. Thank you so much. That was very

comprehensive and very informative, and we have about five or ten minutes to have some discussion and yes, just like Joe did, putting up your tent. I'll be also looking virtually. So Joe, go ahead and start.

Thanks.

MEMBER SCHUMACKER: Thank you Megan, and thank you Janet. I appreciate it very much. The reports are always so enlightening for us to catch up on what's going on at NOAA Fisheries. Offshore wind, I'm going to bring it up.

You know, fishers around this country, fishing people, fishing industry, tribal, non-tribal have been searching for forums to be heard on this issue right and left, and you mentioned you're hearing a lot more since the offshore wind proposals have come out here to the west coast.

And I think I'm just going to ask a direct question here. What can NOAA Fisheries do to better facilitate hearing fishermen's voices being heard to the administration? Because the administration has these, this full speed ahead, go get offshore wind in place, get it done priority.

How do we and the fishers out here, tribal, non-tribal again, get heard and understand what we see as an incredible threat to our livelihoods, to our resources and to, you know, just our future? So I appreciate that, any enlightenment you have on that. Thank you.

MS. COIT: Thanks, Joe. So the ambition of the administration is to expand offshore wind while supporting other ocean uses, and the hope is that they can be compatible. However, there's great concern over that and really not another example around the world of where that's done successfully.

So we've talked a lot at NOAA Fisheries about there's a lot of input, but not as much structure around how the input from the fishing communities, from tribes, will affect an outcome. So I think there's two things that we're working on, which is to improve the engagement and BOEM's leader, Liz Klein, is very interested in doing that, but also to look at ways where that engagement can better inform an outcome.

So for instance, on the Pacific coast

there's a lot of talk about marine spatial planning and working with us and the data that we have about where fishing occurs, so that ideally you avoid those areas. I know from talking at length regularly with BOEM that when you overlay all the different uses, it's difficult to find an area.

I think in the Gulf coast we felt very pleased and we had done a lot of marine spatial planning around the aquaculture opportunity areas, that the areas they identified for offshore wind didn't seem to be in conflict with fishing the way that I know you're concerned about here on the Pacific coast and they are on the Atlantic.

So working within the laws and the authorities we have, you know, we want to strengthen that engagement in regard to the placement of these. We also are concerned ultimately about the mitigation, the compensation and we've been working to influence BOEM and to talk to many members of Congress who are interested in that.

I would say finally I'm happy to have you address this Sam as well, that I think it is so

important that through your associations and through your relationships that you keep talking to members of Congress and the administration about the jobs and the value and the cultural aspects of fishing. I do have a lot of conversations with the leaders in the White House on those issues, and I think people are striving to do better.

MEMBER SCHUMACKER: Very quickly a follow-up on that. I'm very pleased to hear you mention marine spatial planning again, because it's been lost for a long time now. That process was, you know, a lot of good work went into that process many years ago, and it's been forgotten in this planning process for offshore wind in our minds. Thank you very much. Appreciate it.

CHAIR DAVIS: Jocelyn.

MEMBER RUNNEBAUM: Yeah, thank you for that report Janet, and I just want to follow up with Joe, and something that you mentioned was the end cost modeling work that they're doing for BOEM, and hopefully going through the mitigation hierarchy and really trying to avoid some of the most sensitive

areas and the highest fishing areas and cultural resources that exist.

I guess I'm wondering, there's been a little bit of frustration of the transparency, the overall transparency of that process, because it is or feels a little fast with how some of the modeling is going. I think that NCCOS is learning a lot and BOEM is learning a lot where they start making data available.

But NOAA Fisheries has a particular niche with decision-making under high uncertainty, and I guess I'm wondering how, what that relationship looks like and how well those NCCOS and NOAA Fisheries are sort of communicating, because it seems like from my experience in the Gulf of Maine, there's been a little bit of communication breakdown in some of the data gaps.

And so to Joe's point of how do we address this, like really figuring out how to utilize NOAA Fisheries' expertise in this modeling feels critical.

So I guess I'm just curious to hear your thoughts on that, and it's very specific. I apologize.

MS. COIT: No, thank you. So to both you and Joe, agree that the marine spatial planning, it's an area that requires more focus and we had a meeting yesterday that I was late to because I got stuck in the elevator. But so I have a few more gray hairs even today.

But there talk about that additional funding promise to us at NOAA Fisheries by the Federal Permitting Council for marine spatial planning. So it's something we've been pushing really hard from a NOAA perspective, that we need more of that and we need more resources into it.

With the Gulf of Maine, it is very difficult for our staff to deal with the pipeline of projects and have the time and resources to do the work to both not just identify the data, but then to analyze and work with NCCOS and BOEM. So that's something we've identified as a need. Things are moving at a pace at which it's been difficult to do that and everything at once.

So it's interesting to hear your question and your insight. That's a bit revelatory in terms of

maybe relationships. But we've been talking to BOEM about trying to give more time for us to do that important work, because it often involves the same scientists with the same, you know, expertise in geography as those who are working on the reviews of the projects.

So I agree that it's an area that needs more attention and more input from fisheries, and we realize that. But the pace issues, the importance of moving quickly to meet the administration's agenda is making it difficult for us to have the resources to engage on many, many fronts at once in the --

An area called the New York Bight, which is kind of heading south, southeast off of -- out of New York City, is an area that they're working in a programmatic approach, looking at doing the NEPA work for six projects at once. That's another area where we have an interest in putting more resources into, because identifying mitigation measures up front for six projects is a much smarter approach than doing it project-by-project. So we're stretched thin.

CHAIR DAVIS: Thank you. Meredith and

Matt. We have time for two short questions, and then we'll take a break after that. Thanks.

MEMBER MOORE: Thanks. We'll certainly get to talk more about climate-ready fisheries, but just first I wanted to say like we've really enjoyed the Subcommittee getting to know more about the work that the agency is doing and the science, and really appreciative of all that, and hopeful that our work can really complement that and help express the importance of it and get more people involved in it and help accelerate the uptake of that science in the management sphere. So we're still working on that, and hopeful to work with you more on that.

I wanted to ask a quick question, though, about -- so you know, the funds that came in the IRA, fingers crossed for next week, I think helped kind of indicate at least some more support from Congress on funding some of the priority issues that you all are facing.

I'm wondering if you feel like that's carrying over into any of your educational efforts or communication efforts around like the regular

appropriations process.

Are you feeling like Congress understands the importance of the agency's work broadly, and are you given enough opportunities to talk about that?

MS. COIT: Thank you. First, I think we could always do better at -- and it was hard during COVID, because some of the field trips that got people out to actually experience our work and connect in a way that's more meaningful just kind of all shut down.

I'm trying to -- it was the language in the IRA bill talks specifically about stock assessments. It mentions Pacific salmon. It talks about fisheries and marine mammals in a way that I think does indicate that the key players are supportive of and allies with NOAA.

We've been doing, trying to do more work getting everyone up on the Hill, so that the people who work in the regional offices are developing stronger relationships and really focusing on that. We had a meeting about a couple of months ago and everybody went up and did Hill visits, some with multiple delegations, and we're trying to keep a

drumbeat up on that.

I think it's -- we don't know what's going to come out of this -- hopefully the debt ceiling is solved. It looks like there will be, it won't be -- it looks like we're probably at sort of flat funding in the next couple of years. So but I think that sometimes even more effective is when, you know, folks like you are talking about how our work relates to the economy or your agenda.

And so we want to work together with you, but we have -- we are really focused on doing a strategic approach to continuing to be proactive with working with Congress.

MEMBER UPTON: Thanks. I was hoping you could speak a little bit more around some of the challenges that you're seeing around explaining why the science that NMFS is doing matters, and how to kind of get more buy in, because that's really important to me. I think that is an issue and that it's a struggle.

I'm not sure if it's so much on the communications side or if it's educating folks about

the science that's happening.

But where I experience and maybe other people do as well is through stock assessments, where you'll go to these meetings and the range of different models are anything from no fishing to an increase, and how to kind of break it down both for folks attending those meetings, what the stock assessments are doing and then also maybe nudging the folks presenting information to kind of unpack in a way that's more accessible, because I do think that's one of the big issues.

So I was wondering if you had any more thoughts on that, because it really got my attention when you mentioned it, because I agree that's a big issue. Thanks.

MS. COIT: Yeah. I was thinking about -- we had a presentation at the CCC about MRIP, and many of the testimonials coming from people who've been through that amazing week were twofold.

They were one, I really didn't understand the stuff until I spent an intensive week learning about it, and two, to your point Matt, it's so

complicated that it's not accessible to a lot of folks.

So I think part of our challenge is communicating more simply around these complex issues.

I commend that MRIP program, but it hits, you know, 30 folks at a time and has a ripple effect, but it's not, you know, hitting the whole, the whole group of stakeholders or public involved.

I do think that for some of your areas, that the members of Congress are very understanding of how stock assessments and science supports fisheries.

So I think we can learn from the Seattle and the Alaska industry and the approach to Congress, because I feel like that's where I see the most support and understanding for the work that we do, where science supports management.

But I've been struggling to just find a simpler way to talk about the science and the surveys and its value to optimizing our opportunities in the fishing sector. And again, I would welcome input on that. I think that when people spend time with us or on it, then they understand that they're effective

advocates.

But I'm not sure that we're reaching beyond, you know, beyond that. I'd be interested for the fishing industry, it's so helpful to have that support for the science and the understanding of how it underpins our sustainable management, to get more input about, you know, how you could work with us on that.

CHAIR DAVIS: Great. Thanks for the questions and for your answers, Janet, and we really appreciate you again coming and being with us whenever you can throughout the meeting this time. We're going to take a short break now. If we can be back by ten after 10:00, that would be perfect. Okay, thanks.

(Whereupon at 9:55 a.m., the above-entitled matter went off the record and resumed at 10:12 a.m.)

CHAIR DAVIS: Okay. Let's gather together and start back up again. I don't know if Tom and Sebastian are still with us. Okay, good.

(Off mic comment.)

CHAIR DAVIS: And Sarah? Good, great.

Welcome Sarah. Would you like to do a quick introduction? Okay, all right. So now we're going to have report-outs from the state directors, from the Fisheries Commissions, and so I asked them who would like to go first, and they told me I could choose.

So what I'm thinking of is we'll start with the Atlantic States, go through the Gulf and then end up here on the Pacific. So how does that sound?

MR. BEAL: Alphabetical order got me again, but thank you. No, just a quick update and, you know, we've provide these updates at these semi-annual meetings, and at the last meeting I talked about three drivers that were, you know, pushing things on the east coast.

Those really haven't changed, and those three drivers are climate change. That's obviously, everyone knows a lot of the stories along the east coast about, you know, fish moving north and eastward, and affecting at the state level and the federal level allocations and overall productivity of those stocks.

We're adjusting management programs and frankly trying to play catch up with, you know, a lot of the

impacts of climate change along the east coast.

The second driver was marine mammals. Janet talked about this a little bit earlier. The North Atlantic right whales are affecting things from Georgia all the way up through Maine. There's obviously impacts to fixed gear fishing in the lobster industry, Jonah crab industry, the gill nets in multiple industries are being affected, and fish pots and other things.

Then also there's a proposed speed rule that NOAA has out, that would affect the speed of vessels for a number of months over the winter season for all vessels 35 feet and larger. So that's, you know, has a potential to impact some of the recreational fishing and commercial fishing along the east coast as well.

And then the third driver that I talked about at the last meeting is still a big one, and Janet touched on this as well, and that's wind power.

It's, you know, impacting a lot of things that we do along the east coast, and frankly it's occupying a lot of the states' time, just trying to keep up with all

the changes and all the proposed activities.

It's impacting the existing surveys and the footprint of those surveys, and we may have to adjust how fishery-independent work is done along the east coast to, you know, if we're no longer able to sand point some of the footprints of the projects along the east coast.

Habitat impacts are obviously there, and now there's a fair amount of conversations on Capitol Hill about compensation and mitigation for commercial fisheries and for-hire fisheries along the east coast.

A couple of offices have some draft legislation that really hasn't seen the light of day yet.

But they're -- we're trying to figure out kind of how you do it and where should this money live. If the energy companies and developers have to pay into a fund, where does that -- where does that money go and who makes the decisions on how much each business will receive or individual will receive.

So there's a lot of conversations around that on the east right now, and trying to figure out who -- who's the best, what's the best vehicle to move

that money around. Is it through an interstate commission? It is a third party entity, and there's a lot of different ideas out there on the east coast but they'll take a lot of time to sort that out.

But we don't have a lot of time, because these projects are moving along pretty quickly, so we'll work through that. In addition to those three drivers on the east coast, there's a couple of emerging issues that are worth talking about.

One is just -- one is a growing concern by the states on the east coast about just general, basic, fundamental data collection and stock assessment work. You know, there are some signs or signals that there are resources available to do basic fishery-independent survey work and stock assessment work is diminishing.

We're trying to again, do more complex stock assessments and deal with climate change and, you know, in order to characterize climate change impacts we need those fundamental fishery-independent surveys along the east coast. Those are, a number of those are being impacted.

The biological sampling, for example, in the northeast is down by about 50 percent, and as everyone knows, when the robustness or uncertainty in your stock assessment changes, as uncertainty goes up, oftentimes quotes go down.

So you know, there's a lot of concern that that decrease in fundamental stock assessment work and data collection is going to have a negative impact on, you know, the fisheries along the east coast.

There's reduced resources available at the Northeast and Southeast Fisheries Science Centers to conduct stock assessments, and ultimately that means some of the work isn't getting done and some of the work is being shifted over to the states, and the states don't have the resources really to keep up with that either. So we're, you know, just playing catch up there.

And then in the, you know, southeast, the vessel that does a lot of the state and federal survey work is very old. We're trying to find resources to get that vessel, to actually retrofit a new vessel that has been purchased. So we're looking for

different ways to get that retrofitting done and continue the Southwest Fisheries independent survey.

So you know, that's a growing and emerging issue along the east coast is that, you know, it's not really an interesting or not very sort of sexy and dynamic and easy thing to sell to Capitol Hill when you go up there. Hey, we just want more money to do what we've been doing. But that's the reality of what we need.

We just need that fundamental data and no matter how boring or unexciting it is, it's what drives all of this, and we can, you know, set up any structure we want. But if we don't have that most fundamental data, we're in a bad spot.

And then the last thing I quickly want to talk about was striped bass, because I have to, and Dave's going to talk about red drum, I mean red snapper next.

MR. DONALDSON: Because I have to.

MR. BEAL: Yeah, because he has to. But yeah, the Atlantic States Marine Fisheries Commission passed an emergency rule on striped bass at our

meeting in May. The Commission very seldom does emergency actions. This is the first one in about a decade, but the landings on striped bass doubled from 21 to 22, and we needed to take action.

That doubling of the landings decreased -- we're trying to rebuild that stock. It's in overfished condition right now, and the goal is to rebuild by 2029. Prior to this doubling of the landings, we had a 78 percent chance of getting there in '29. But once those landings doubled, the projections were rerun and we only had a 15 percent chance of getting there in 2029.

So the Board took emergency action and the primary management measure for striped bass right now is a slot limit for the ocean fishery. It used to be 28 inches to 35 inches, so you have a seven inch slot.

But it was reduced to 28 to 31 inches, so only a three inch slot for that fishery.

That slot limit is designed to protect the 2015 year class, which is the last big year class that we have in that population. So we're trying to husband that 2015 year class through, and give them a chance

to spawn and rebuild and hopefully meet that 2029 goal.

So you know, that's a big issue on the east coast, and as I said we seldom do emergency actions. But this one was close to unanimous at the Commission and we needed to take that action to hopefully hit that 2029 deadline. So those are some highlights from the Atlantic coast. There's a lot more than that going on, but just in the interest of time happy to answer any questions and turn it over to I guess Dave is next.

CHAIR DAVIS: Yeah, thank you Bob, and we'll have questions at the end after you've had a chance to report out. Thanks.

MR. DONALDSON: Thank you. Before I get into my report, it was pointed out at the break that I've messed up the series, and that we've got a Barry, and we've got a Bob and then Dave. So from this point forward, I'm going to be -- you need to refer me to as "Bubba." Since I am -- since I am from the Mississippi, I thought that was appropriate.

So just to keep, just to keep the series

going. So like Bob, we've had the similar issues that I talked about at the last meeting. We continue with our long-term data collection. That's one of our main, main focuses in the Gulf of Mexico.

Appreciate the support that NOAA's, NOAA Fisheries has given us supporting these programs. However, similar to what Bob was talking about, there's some frustration that there seems to be increased demands on this money and there just doesn't ever seem to be enough to support these ongoing activities.

In the Southeast Region, we've got a large number of species and fisheries, and a high demand for stock assessments and routine monitoring. Historically, there's never been adequate funding for the Southeast Region to support those. We've actually had five different management entities in the Southeast, and we have once Science Center to support that.

So there's just -- there's frustration amongst our state as well as federal partners, in trying to address all these needs. Unfortunately, it

seems like it's probably going to get worse before it gets better. But as Bob needed to mention striped bass, I need to mention red snapper.

We continue working, working on that issue and there's been a work group that was developed to develop a path forward on how to move, move past the calibration issues between the state specialized surveys and MRIP. There's -- it's been, it's been a slow process. There's a lot of frustration that it's taken so long, but it's an important issue, and we need to get it right because it has impacts on future assessments and allocation and a variety of different things.

So I'm hopeful that this group will provide some guidance on how to, how to get to the ultimate end of having, having the surveys calibrated so we can use it in stock assessment and the management of this resource.

The last issue is wind, as Bob mentioned. That's an important issue. The Gulf of Mexico's, we're kind of new to the game. We're still trying to figure out how it's going to impact our fisheries and

the other oil and gas industries and the other industries in the Gulf of Mexico.

To that end, we're bringing our state directors up this summer to do a tour of some wind farms and talk with folks. We're trying to learn from both the east and west coast on how, what kind of lessons learned. So one of our state directors mentioned it might be useful to go up, and I think we're going to the Block Island facility.

We're going to tour the facility and talk with a bunch of agencies that are involved in that. But that's again in the interest of time, that's kind of a brief overview of what's going on in the Gulf.

MR. THOM: Thanks, and I'll bat clean up here. So a couple of things I was going -- a lot of similarities between the three commissions on some of the priorities in areas, and then a few key differences. Over the past year, well first of all I'd just say, you know, it is good to hear they finally got somebody in the regional administrator job that's better than I would have ever done that job.

So it's great to have Jen in that spot, so

it's good to see you. I'm happy where I'm at right now, and it's great to see her in that position.

In terms of just a few internal things over the past year, I have been focused internally in sort of getting, making sure that the Commission's house is in order and doing a few key hiring.

We're going through and updating our goals and objectives documents, some strategic planning work with the Commission similar to what Janet says sort of what do we do and why does it matter, you know, that kind of an approach within the Commission itself. So that will be happening over the next six months to finish that up for our annual meeting.

A couple of key hires we've made over the past month or so. Our finance position, which is really the sort of key position within the Commission, making sure the money moves. Ngu Castro joined us from -- she came over from Sustainable Northwest, so happy to have her in place to keep us moving on the finance side.

And then Caren Braby started as a senior program manager with us. So Caren came over from the

Oregon Department of Fish and Wildlife, where she was the marine lead, and she has a lot of good experience in both wind on the west coast, as well as crab and whale entanglements, which I'll talk about as priorities.

So definitely some changes there as we shift a little bit of directions to address some of the high priorities.

You know, from my time, I probably spend an inordinate amount of time working on fisheries disasters and CARES Act and funding and those kinds of things in our Commission. So several key disaster funds are coming through. A lot of focus on Alaska disasters, as well as Northwest tribes and Washington in this most recent round, making sure those are moving through.

We still do, are processing some CARES Act funding. So I can see the light at the end of the tunnel on the CARES Act funding, but definitely a lot of pressure to just get that out the door and keep that moving as well.

Just in terms of priorities, so we did

have a meeting with our state directors and NMFS region lead, Science Center and regional leadership about a month ago, and just talking about those surveys. So similar to the other commissions, those base surveys, stock assessments, base data collection programs really are the key priority for the states and continuing to move that forward and to advocate for resources there and keep that moving.

In terms of other areas though, marine mammal management really, you know, dealing with expanding pinnipeds on the west coast tends to be a continual issue and trying to figure out a way through that, a path forward there for Klamath, in making sure between Oregon and California, the Commission's actually doing a lot of work in helping facilitate, pull people together, making sure the Klamath dam removal and that whole program, the sort of the after-effects monitoring as some of those programs stay in place and get moved forward.

And then I'll hit on, you know, whale entanglement, crab and whale entanglement, so continuing action there. You know, crab is not a

federally managed fishery, Dungeness crab by keeping those permits going, advocating, to make sure that NEPA gets done on those permits for the west coast states and moving that forward and we're staying engaging.

And then offshore wind. Like I said, you know, and this is maybe to Joe's question on marine spatial planning. At the Commission, both the Fishery Management Council and Commission has made it a high priority to make sure that fisheries data gets into the planning process with BOEM.

We have been doing some work directly with BOEM, interacting with the NCCOS work as well as our own work, to make sure the PacFIN database as well as other data streams are incorporated, and doing some really cool spatial analysis of that information. So looking at VMS data, AIS data, fisheries data, just to extrapolate where fishing's occurring, where the high priority areas are and making sure that gets into the process.

So some really cool work, and I think you'll see that at our annual meeting as well, some

presentations on that moving forward, just to make sure that information is getting into the system. And then I just wanted, and many people may know, but I just on a sad note, since our last meeting I did want to just note the passing of Michele Longo Eder.

Michele was just a great leader in fisheries on the west coast, and she left us in March of this year. She passed from cancer, so we lost her.

A great leader on fisheries in the west coast. She was influential in MAFAC and a lot of other forums across the country. So I just wanted, you know, just to publicly recognize how much she contributed to fisheries on the west coast.

Knew her in Newport and just a great advocate for fisheries and really helping her family stay engaged in fisheries, you know, in the small scale fisheries on the west coast moving forward. So that's all I had for that. Thanks.

CHAIR DAVIS: Thank you to the Commissioners for updating us, and we have a few minutes to have questions and discussion. Stefanie, and then Donna.

MEMBER MORELAND: I just want to thank and compliment these gentlemen for their record-building the communications discussion we're going to have around strengthening the budget and data acquisition priorities. So thank you.

MEMBER KALEZ: Thank you all. That was great reporting, and Barry, I just want to thank you so much. I want to continue to thank you for your support on the descending devices for our rockfish and for the hats and the promotion of the fish ID cards. All those things help California to promote the safe release of rockfish with those descending devices. So thank you so much, and I hope you keep that program going.

MS. COIT: Thank you. So interesting to hear from all three of you, the commonalities as Stefanie mentioned for instance, around the fundamentals of doing our science and our surveys and the differences.

Bob, for the striped bass, but for MRIP, would you have had information to determine the doubling of the catch? And I have a follow-up.

MR. BEAL: No is the simple answer. So yeah, you know, and that data on striped bass, you know, I'll back up. You know, we took the emergency action and usually when there's emergency action or something drastic like that that happens, the first thing people do is question the data obviously.

Do we really need to do this, or is this sort of just overreacting to an anomaly in the data? We've heard very little of that in this instance, you know. What the folks out on the water, the recreational fisheries saw in '22 was that there were a lot of fish available and, you know, they believed that number.

When you look at striped bass in particular, it's a coast-wide number on an annual basis. It's a really solid number and without that, without the MRIP number, we wouldn't have anything to base that on.

MS. COIT: Thank you. So Dave, you talked about going beyond MRIP, and I think it's interesting and I know Barry on the Pacific used something different, just that whatever the beep with data, if

you're doing it consistently you can have a comparative data set, that even if people see flaws in it, they see how it changes over the years.

When you think about like beyond MRIP or whatever term you used, what do you -- can you articulate a little bit like what your thoughts are around that in terms of catch and effort data consistent across the way that Bob was able to use that consistent across the Atlantic coast?

MR. DONALDSON: So the -- I mean what we -- ideally, what we need is one number, but unfortunately we're past that point and we just need to be able to reconcile, reconcile the various, the various data sets, although Texas has been doing their own survey for a number of years, and we've piecemealed it and red snapper has just made it even worse.

So it's -- unfortunately it's a complicated, a complicated issue and that's why we've got that group of scientists from the different states to be able to put together. So I'm not sure I can -- I'm not sure I can answer that question. But

ultimately we want to be able to at least have comparable, comparable data so we can do the assessment Gulf-wide.

There's been talk about well, let's do a state by state assessment. I just don't think that's the right approach. So we need to, we need to be able to have that calibration of all those data sets so we have one number that fits into the assessment. But I don't, the group that we have together, they're the ones that can answer that.

I just don't, I don't have that knowledge base to be able to answer.

MS. COIT: Thank you. I think the continued work towards improving public confidence in that data collection, the data set kind of fits in with even Matt's question and what we're talking about, you know, why it's important what we do and the amount of recreational fishing effort, and how that plays into a sustainable management really requires us to keep working closely on that towards a better, to get to a better place. So thanks for your work on that.

CHAIR DAVIS: Any other comments, questions?

(No response.)

CHAIR DAVIS: Okay. I want to thank Barry, Bob and Dave very much for your reports, and look forward to having more discussions over the next couple of days.

So now we're going to switch gears to having Sam Rauch give us an overview. He's the Deputy Assistant Administrator for Regulatory Programs, and he's going to give us two short presentations, and then after that we'll open up for discussions and question. So thank you very much, Sam.

MR. RAUCH: Thank you, yeah. So I'm going to go through both of these. They are related, so we'll do that and then we'll have questions after both of them. Let's see if this works. Perfect.

So as Janet mentioned, we released the final National EEJ Strategy a week ago Monday. It has been a long process. I've got a team of great people working on that. One of the EEJ that we've talked about is the importance of change in the internal

culture of this, and all these people that I have working on it is not an isolated ivory tower group working on EEJ.

I've got representatives from all of our major offices around the country, and really are building something that is enduring in terms of staff embracing the whole structure of that. But we released it, the final national version, and I encourage you that if you've not looked at it to look at it.

We're going to talk a little bit about comments, but I do want to reflect at the outset, as Janet did, the importance of the comments that we received from this body. Those were very helpful in guiding the final strategy, and we appreciate the work and the thoughtful work that you guys did preparing that for us.

So this is the National Strategy. As we have talked before, it sets a national tone. It sets a way for us to discuss this. It sets some expectations, but it is still national. A lot of the questions and comments that we heard through this process are about issues that are very important on a

reasonable or more local level.

There is a -- we are going to get to those issues. This one by its very nature is intended to be broader. So some of those issues, this should set the framework for assessing those, but it doesn't solve those or address those directly. This does guide us in how we're going to work on these things, and it does reflect a lot of the input in this process.

Let me see if I can change that. So just as quick reminder, there's three overarching EEJ goals which were in the draft. We did not basically change those, to prioritize identification, equitable treatment and meaningful involvement of under-served communities; provide for the equitable delivery of services; and to prioritize EEJ work and our mission work with demonstrable progress.

Those are the same. The core areas are largely are the same, which talks about setting an overarching and empowering environment where we basically release all the latent effort and excitement of our employees, of our partners to work on these issues.

You can't make any progress without doing that. I hope that we have done that through this whole process. It seems to me that we are doing that.

It's still a work in progress, as all of this is, but we have laid a good, solid foundation for that.

The first one then is to look at the policy and plans and to make sure there are not any structural barriers in our policies that may perpetuate inequities and disparities in access to resources or regulatory burdens. So look at issues with research and monitoring. It is hard -- we are a very data-driven organization, very science-driven.

Sometimes it's very difficult to get data and to make informed scientific, objective determinations about this because our data collection systems were designed to get the kind of information that we need to do that. And so there's an important part about diversifying research messages and knowledge sources, to collect the right kind of data to be useful to decision-makers.

Outreach and engagement is obvious. We know that we need to work on relation-building, both

to and from communities, identifying -- working with the communities themselves to try to identify who the communities are. Language issues are really important. Improving our translation services has been something that we have focused on.

This came out in both Spanish and English and the executive summary came out in ten different languages. But there are more that we need to do, more that we can do with that. We're looking at how we can do that.

Looking at benefits, we've talked about the regulatory burdens, you know, trying to get rid of the artificial barriers, but also ultimately trying to make sure that the benefits are distributed equitably.

That's not something that can be done overnight, and there is often a process that we have to go through, working with the councils and other partners, that there are a lot of issues with going into that.

But we need to be more mindful and do a better job about trying to equitably allocate the benefits and inclusive governance, bringing people into the process. These decisions are better made

when there are more voices at the table where we're actually discussing things.

There are some barriers to doing that, and we're trying to eliminate some of those barriers, bring more people into the process. That's important if we're going to achieve any outcomes here.

But all of that is basically part of the draft strategy, and it remains largely unchanged. In the final strategy, some of the measures, some of the details around that are changed. I will commend you to -- there's an appendix in the National Strategy which outlines what I'm about to say, and then our responses, where we -- where we were able to address many of these concerns.

So we did take a -- we got a lot of public feedback on the draft strategy. I think I had presented, the last time I was here, some summary of that public feedback. Some of the highlights. We were asked to take a more bottom-up approach to fisheries by aligning our work with the needs of under-served communities, which also includes co-development and co-production of science and

management.

There are some things we can do there, there are some things we cannot as a federal agency. But we can do a better job trying to be more inclusive. Identify in cases groups that have not historically been included.

Include humans as part of the management considerations by considering, characterizing the people that make up the fishing communities by better understanding, quantifying the multi-faceted benefits that people get from fishing and fish.

Which includes not just economic benefits but things like food security, culture, practices of reciprocity and other kinds of things. Lots of requests that we promote equity and the distribution of access to fishing and aquaculture, and equity in protected resource management.

Support the autonomy of tribal and territorial governments. Diversify our workforce and members of the councils so that they reflect the diversity of people we serve. This was an important part not just of our equity strategy. This was an

important part of NOAA's overall approach to diversity, something that we are trying to do.

This Strategy firmly states at the outset that we cannot achieve the objectives that we want without a more diverse workforce, that we need to look more like the people that we are representing. That's how we can get better, make better decisions. And then we need to measure success not by the number of meetings we held or other kinds of procedural inputs, but by actual output and feedback from the fishing community.

So more overarching recommendations. As I said, they were often specific to local and regional issues. A couple more broadly other requests, that we communicate early and often, that we coordinate among ourselves so that our work is aligned, but also so that communities are not overburdened.

So that when we're going to a community and talking about it, we're not having different elements of NMFS coming at the same time, which can place a lot of burden, particularly on an under-served community that doesn't have a lot of the

infrastructure in place to deal with it.

It might be that these are very beneficial things that we would like to engage, but we can't just continue in a dysfunctional way or an uncoordinated way, just keep repeatedly asking them for participation.

And to do other things to support our capacity for EEJ work, like hiring the local place-based staff, investing in cultural and language expertise, and researching the social impacts of management decisions on communities. So all these things are things that we have heard, and they went into that.

And once again, I would commend you to that appendix, which outlines in more detail the comments we got and how we modified parts of the overall Strategy to address them. So for more information, this is the link to the actual Strategy.

It's on our website. We did, as I said, it's in Spanish and English and the executive summary is in over ten other languages.

And so we're very happy about that. We

rolled that out, and we are working on the next step, which is public engagement. So meetings like this, as Janet also mentioned, we went to the CCC, the Council Coordination Committee last week. We are going out to lots of different people to talk about the National Strategy.

But then the next step beyond that is the local regional strategies. So I'm going to talk about that more in just a minute. But this was always intended to be the first part of the step-down plan.

I think Janet called it "the end of the beginning," which is true, right? There's a lot of issues that need to be addressed on the regional and local level.

So our regional offices, our programs are engaged -- first are doing what we did nationally, which are engaging with partners, partner governments, stakeholders, other kind of entities on how to step down from this national approach to a more regional implementation plan, and we expect those to be out by the end of the year.

So that is a process we're engaging in

right now. Twofold, right? Engaging on the National Strategy, doing things like this with MAFAC, and then the regions are gearing up their regional engagements leading to a regional implementation plan, and this is just a slide which does what I just said, because I didn't advance the slides. I'm sorry about that.

So that is the -- that is the last slides on this one. So we can take comments on that one in a minute, but let me first do my other PowerPoint if I can get that one teed up, on the national standards. Is that next? Yeah, okay.

So as Janet said, these two are linked in part. They're not completely linked, but they are related efforts and so it makes sense that we talk about them somewhat together.

Earlier in May, not last month but earlier, I think on the 15th or something like that, we rolled out the Advanced Notice of Proposed Rulemaking to look at potential changes to the national standard, guidelines for National Standards 4, 8 and 9.

And just for those of you who are not

steeped in regulatory process, this is not actually a proposal to change 4, 8 and 9. We are soliciting comments about what changes people might want to see and then we will decide whether or not we are going to make changes to 4, 8 and 9.

If we do, we will put those out as a proposed rule and do outreach on that and take comments on those. But this is basically, to use NEPA terminology, this is to scope that, to get the list of things that people are interested in seeing or that they're not interested in seeing in potential changes to 4, 8 and 9.

We've got guidelines that have existed for over a decade for all of these, and we've been implementing those, and some of those implementations go well and some of them have problems that we do think in some areas better clarification would be appropriate. But we're not proposing anything at the moment, but if we -- our plan is to look at these comments and then decide what if any we would put out as a proposed rule.

So that is the goal of what we call an

ANPR, but I'm going to go a little bit in more depth.

Janet gave you a very high level overview; I'm going to give a little bit more depth on that in this presentation here. So the four national standards, these are not verbatim about this, but these are summaries of the national standard.

National Standard 4 deals with allocations, which are very important to our fisheries management. They have to promote conservation, not result in excessive shares, but also be fair and equitable. This one has not been changed in a very long time, and it underlies some of the other things that we want to do.

So it makes sense to look at these together, because as you're considering like impacts to communities, you might need to look at allocations.

There's some other things, particularly as we talk about climate change, that we want to look at that.

National Standard 8 is the one which explicitly talks about communities and provides for their sustained participation, minimizes adverse impact to the extent practicable, and 9 is bycatch,

minimizing bycatch and bycatch mortality to the extent practicable.

These are all interrelated. In certain areas of the country, they are really critical. But they're important nationally everywhere.

So when we laid out the ANPR, we highlighted two issues in particular that we were seeking comment about, in terms of how these current ANPRs relate. One is climate-related impacts on fisheries, as we've talked about before and I think Cisco may talk about again.

We are seeing changes in many of our fisheries in terms of where the fish are located, in terms of the health of the fish, the sustainability of the fish. The communities that participate in the fisheries are all potentially changing. So we wanted to look at these ANPRs with that in mind, and we're going to go into that a little bit more in detail.

The other one is our new environmental justice policy. As we look at sustained participation of communities, under-served communities, there's obviously a linkage between those two concepts, and we

wanted to figure out how, how our current approaches are or are not working with some of the places we'd like to be in our EEJ Strategy.

All right. Okay. So a little bit more detail. So I'm going to talk first about the climate-related issues and then about the equity issues. So for National Standard 4, that's the allocation one on climate issues, we asked for specific input on looking at the historic allocations.

We do have an allocation policy. If you are not familiar with that, it basically requires us to revisit whether -- revisit the allocations on a certain time period, and the councils dictate what that trigger is. It doesn't mean that we have to redo the policy. We have to ask the question, should the policy be redone because these allocation policies are supposed to be in the national interest, and that interest can change.

So an allocation decision we made in like the 1980's may not be appropriate today in 2020. And so there is already a requirement to periodically revisit that and make sure that the existing

allocations are consistent with the national, the best interest of the country. But as we are doing that, should we look at more than just a trigger under the old standards, but should we look at different ways of looking at historical users, given that, as we said, the fisheries are changing?

The current users might, may be very different, and the current drivers driving those uses may be very different than the ones used historically.

Marginalized individuals. We do know that one of the -- some of the effects of fishing allocations can be that certain users who may not be -- may have been excluded from the process for various reasons because of the way it was set up, and there also is an issue with new users.

The allocations tend to help people in the status quo have more certainty, and we can make a lot of good, sustainable and economic decisions. But they can also, if not done well, present a barrier to new users. New people who wanted to go into the fisheries may have barriers to it that their grandfathers did not have.

So looking at that as we look at the ways that we do allocations are something that we want to take comments on, particularly in terms of climate change, because climates where the fish stocks move, all of these factors can change. So we're looking at that, particularly in the ground of climate change and how these things affect with shifting stocks.

And then the next one is the National Standards 8 and 9 with climate issues. So we know that there are communities that have been reliant on fisheries in the past, that may be struggling as stocks are moving out of their area and new places where the stocks are moving to may be having fish that they can't catch on their shores.

So how do you adapt to those changes in conditions, both good and bad? When we're looking at the sustainable participation of fishing communities in light of changing conditions from climate, something we want to look at. That also may create bycatch issues where there weren't bycatch issues before.

As stocks are moving into fisheries, you

may -- you may not -- they may not have allocations to target them, to land them and may create a bycatch issue.

You may be impacting different communities than you were before because of the nature of that. So we want to look at all those things in terms of climate change and those drivers, and do we need to adjust our guidance to account for that?

All right, equity. So go back to National Standard 4. When we were looking at this, many of the same issues we were talking about in terms of climate change and the changing participants, also think about whether they should have been excluded in the past, and whether there are ways to avoid that in the future as we're creating new allocation systems, and as we're looking at what is an under-served and under-represented community.

If you look at the executive orders, the list of the communities, they're quite broad and it's not necessarily the same list that we use for the Magnuson Act. And so when we're looking at issues of allocation, we'd like to look at those kind of issues

as well.

And this may -- you know, I would, I want to reflect that in the Magnuson Act fishing process, these allocations are set through the council process.

It is very difficult to go back and change historic allocations because people have relied on them. It is less difficult to make sure that you don't repeat those issues going forward.

We want to do both, but we need to be mindful that this is a council process, that we are only one vote on the council, and that what we need is a transparent approach to these things. So we'd like to encourage the councils to look at, and in many places we are trying to do that, but that's a lengthy process to go through when you have to go through them with our partner councils and all the entities that are on that.

Similarly for National Standard 8, this is the one where communities clearly is impacted. National Standard 8 uses the term "communities." We need to look at the definition of fishing communities.

We are particularly interested in the current

guidance.

Our current National Standard 8 guidance says "National Standard 8 does not constitute a basis for allocating resources to a specific fishing community, nor for providing preferential treatment based on residence in a fishing community."

That's in the current guidance, and one of the questions we're asking is should that remain in the guidance, given if you can otherwise account for the requirements of the Magnuson Act, do we need that.

Do we need that prohibition on allocating to specific communities? There are a number of things that we have that are community-based.

This may present a barrier that may not be needed, and that's one of the explicit things that we're asking for. We're also asking to update sort of the definition of communities and how things like must the members reside in the specific location? How does that really affect? That is one of the criteria now, and how does that affect going forward?

So all of these sort of detailed issues about communities may present a barrier to do some of

the more, the more ambitious actions that we'd like to undertake. And so we'd like to look at that.

Are there ways that we can encourage more equity and environmental justice concepts? Are there ways that we can prevent the national standards from being a barrier where they don't have to be?

To some extent, the national standards cannot deviate from the statute, so to the extent it's in the statute we cannot change that. But within that, there are ways to interpret this and maybe we've created an unnecessary barrier.

And finally, oh no, this is not finally. Maybe I've gotten it -- I think this is finally. Yeah, okay. I'm doing sort of two different things. We talked about that one. We talked about that one, and in bycatch, we have looked at ways --

The issues of bycatch traditionally have looked at bycatch of a specific industry. We are required to minimize, to the extent practicable, the effects of bycatch.

But one of the things that we're seeing more often is bycatch in one fishery affecting another

Magnuson Act fishery or affecting communities that are dependent, that are more directed on that species, or have more dependence on that species, and how do those two things interrelate is something that we have been trying to address, or that the standards don't really address very well right now.

So this is one of the things that we would like comment on, is how those two, where you've got two fisheries, one a bycatch fishery, a very important bycatch fishery and the other one a direct fishery, how that -- how that works across the Magnuson Act and how we're supposed to look at that within our statutory mandates.

And then this one, I think, is the final one out of the substantive ones. So the addition to that is practicability standard under National Standard 9. So we're supposed to minimize bycatch to the extent practicable. What does that really mean? If you look at the current guidance, it's that's not - - there's not a lot of guidance in the guidance about practicability.

This has been an issue for many councils

who are trying to struggle with what it means to reduce bycatch, where that practicability line is because it clearly involves a degree of economic, there is an economic aspect to practicability. It's not to the extent possible. It is something less than possible, so it involves is it economical for the target fishery that we're looking at.

And also we want to look at ways to revise the guidelines to incentivize reducing waste. That seems to be part of the Magnuson Act. Should we look at that, should we not? We've gotten some input that we should that would seem to go along with National Standard 9.

All right, the time line. So we published the ANPR May 15th. We made a presentation to the CCC and to you all, and we are going to each council through the June to August timeframe. We're also doing several tribal and one national webinar in June and July, and the public comment period will close on September 12th.

So after that, we're going to consider all that comment and decide whether to go forward with a

proposed rule on some or all of the things that are in either our ANPR or are in the comments that we get, and they'll be a full rulemaking on that if we do decide to go forward.

And that really is it. Okay. I'm happy to take questions on either the EEJ Strategy or the ANPR.

CHAIR DAVIS: Thank you Sam, and congratulations again on getting out the EEJ and so excited that MAFAC could help play a role in that as well. I know that you have next steps coming up with the public engagement, with the implementations.

I'm hoping MAFAC will continue to engage on that, and then hearing more depth on the national standards and seeing maybe how we could also provide some public comment on that as well.

So thank you for that overview and more in depth, and thanks to Janet too for giving us the overview on those two important topics. So we do have time for more comments and questions for Sam, so please feel free. I see Matt. Go ahead, thanks.

MEMBER UPTON: Thanks for the

presentation, Sam. I'm going to have to remember that great line with "here's a slide with words I already said." So I'm -- that cracks me up. It's like every presentation I've ever done.

So my question is about the EEJ aspect around these community liaisons and the additional funding. I guess that's -- the concern I have there is that I think that's a really good idea. But any time you see additional funding, I just feel like that's something that might not happen.

Are there other ways to get there, for example, by just hiring people with remote stations or locations, to try and not have it be dependent on additional funding? I know that sometimes it's a challenge within the federal government on not requiring college degrees, because I agree with the conclusion that's really important to have folks who are from communities, particularly rural communities that are sometimes not that involved.

But I just am worried that if we're waiting for additional funding, it might not happen. So I was wondering if there's an interim step to just

have remote spots and then maybe not even have it just focused on just community liaison, but just get more people in rural communities who have knowledge about fishing working for NMFS, and not having to commute to a larger city?

MR. RAUCH: Yeah, thank you for the question. I mean there's a number of aspects to that.

We have had, for the last several years including this year, Presidential budget request for many of our EEJ activities which -- so the President is asking for -- Congress for some of these funds to do this. So there's that availability.

But as you said, that's always uncertain as to whether we're going to those things. And so we continue to look at ways within our existing budget, as we do new hires, as to whether or not, you know, where we place them, what our opportunities are. It's not unlimited what we can do, and it is more evolutionary as new hires come on board.

But we've done that, you know, should we place one in Puerto Rico? Should we place somebody, a new employee out in the Commonwealth of the Northern

Marianas or something like that? In rural Alaska, yeah. The other part of that is we are trying to take more advantage of all of the virtual tools that came through the pandemic, and looking at that.

We can't place, particularly like rural Alaska, we can't place a person in every community. That's impossible, but how can we be efficient at that? I mean these are the kinds of things that we're looking at doing.

We're trying to do it without resources, new resources, but that's as we get new employees, when you hire them you've got to go through this process of trying to decide where you're going to -- where they're going to sit and what are their criteria going to be.

But there is a request for funding from Congress if Congress passes the President's budget, which will allow us to do some of the things that we've laid out to do.

CHAIR DAVIS: Thank you for that. We have Meredith, Tom and then Pat.

MEMBER MOORE: Hi. My comments are also

on the EEJ Strategy. So wanted to thank you all for adding the, I forget whether it was a goal or an item, but on hopefully looking into the feasibility of financial assistance for under-served community members traveling to and participating in advisory bodies and councils.

That's so important, and we recognize it will be funding-limited. But trying to establish that kind of ability for the community to get there and be there. We all know the benefit of being in the room for those conversations. I just wanted to really emphasize that.

I have two quick questions. One, if you could talk a little bit about how you see the NAS study interfacing with your time line and process, the one that's looking into benefits and maybe what that looks like, if that's still ongoing.

And then I was wondering if you could talk about the response of the CCC or councils to how they are going to be ideally inspired and good partners on moving some of these things forward, and finding places in their processes to move some of this and

what that collaboration between the agency and councils might look like going forward, as you make the implementation plans?

That one's probably not a quick question, but sorry.

MR. RAUCH: In terms of the NAS study, that is ongoing and we've given several presentations.

We did provide a little bit more detail. I'm not, I don't recall the exact schedule. They're in a, I think the fact-finding stage of that, and it's -- for those of you who don't, I think I had mentioned that last time I was here.

It is a study the National Academy of Science is doing on broad-based issues of equity in some of our allocation decisions. So those are usually very high level and lengthy. So I imagine when they get that done, they will give us a series of recommendations that we will then work through the councils to try to work at, and it might --

It might come out in time for a National Standard 4 or these guidance looks. It might not, but we could also look at other ways to address those

impacts. So not knowing what their answers are going to be, I can't tell you how that's actually going to fit in.

But it is -- one of the things that we did when we started this whole process, so they are very related. It's just we don't want to wait for that to be done before we move out on some of these other activities.

And then the other question was how the CCC or the councils responded, and I think that they have been very excited about the concepts. We've given, I've given this presentation to many of them and received very, large support for the ideas. I think there's general trepidation about looking at allocation decisions for any reason.

I mean I've been dealing with allocation decisions in the councils for a long time, and they are really difficult to do, even if it's for the best reason because you're talking about people who are very concerned about their current allocations.

It's easy to talk about allocations for the future, but if you're at all talking about

allocations for the past, it creates a really difficult issue, and it's really difficult.

I mean even where people are willing to go do that, it's been really difficult. So I think that there's some concern about the workload and the effort, and you know, do we really want to reopen that box? But there's been excitement to go do that, and at least to start that conversation. We're seeing around the country that conversation is starting in many ways.

And then in terms of participation, I think that was also part of your thing. You know, we're seeing more efforts of the councils to try to increase participation. Recently, the North Pacific Council created a subcommittee, an advisory committee spot for this. I think there's more work that needs to be done, particularly on like actual decision-making members on the council.

But the -- but these are the things that I think the councils are trying to move forward with, and we intend to continue to encourage them to do so.

CHAIR DAVIS: Thank you for that. Tom,

then Pat, then Clay. Thanks.

MEMBER FOTE: Yeah, I really would like the NMFS and the administration for looking into environmental and justice issues on a lot of fronts. I've been dealing with environmental issues for about 30 years between the two organizations I belong to. One is Clean Water Action and one is the Jersey Coast Anglers Association.

When I got involved with Jersey Coast, I says we've got to look at the shore-based or the poor, because I grew up fishing on docks and piers in Brooklyn.

The same thing with the environmental Clean Water Action. But most of the stuff we do with Clean Water Action is to look at healthy people, you know, basically the power plant is always in the poor neighborhood. We're not going the proper work on lead pipes and things like that.

But fishery has become very difficult issue to deal with, because the organizations have so many problems dealing with questions of environmental justice. The health issues that are near under-served

communities, they don't look as fisheries as they do ports. I've been trying to figure out how to do that for about 25 years. As you know, a lot of people sitting in the room where I'm not going to get into my problems. But it's really a difficult situation.

Now I could talk to a party boat and charter boat captain from 30 years ago, where they used to get the churches in the under-served communities that would come down, hire a bus. They used to take all their parishioners along with them fishing, and they could basically bring home food for their families.

It made the justification for the day on the water, but also that they could bring enough food to actually make a difference, and fresh fish, which they can't buy in the fish market prices because they're so high.

Well over the years that has stopped, because when you put limits in on stuff like sea bass and a number of other species, that eliminates where you could actually, you know, instead of crossing a dollar a pound or 50 cents a pound, now my wife chews

me out that every pound of fish that I bring in the house probably costs a thousand dollars, the amount of money I expend on fishing tackle. So it's not economically feasible for those people.

The ones that do continue to fish, they fish in areas and they wind up being forced to be poachers if they ever want to take fish home to eat. I mean the areas I fished in are the Canarsie Pier, Eagle Chase Pier under the Marine Parkway Bridge. You never saw a fish bigger than 17 inch when it came to scup.

So when we moved to size them to 9-1/2 inches, we eliminated all those people from all those areas. It's very difficult to look into that.

I think the best way, one of the best ways it to look at those church groups, and I would like to be helpful in any of the ways you could do this, because as Bob can tell you, I've been fighting this issue at the Atlantic States and the Mid-Atlantic Council for years.

They're not at the table. They're not at the table of the Commission. As a matter of fact, one

of the discussions was how, is how do we get more commissioners that come from those backgrounds. Because of the cost and the time involved, it allows only people like me that are retired or have a lot of income to be able to do those jobs, even on the Mid-Atlantic Council.

I know you get paid \$550 stipend. But sometimes you can't really do this on something that strict. So we need to find a way of better getting those people involved. I'll be happy to help somewhat on those issues. Thank you.

MR. RAUCH: Yeah. Thank you Tom for those comments, and you raise an important aspect which we've talked about before, and I did not raise in my discussion, but it is in -- it is in our policy, is the interaction between recreational fishing and a form of subsistence fishing.

That is an important part of the, or has been, may still be an important part of the diet of many under-served families, the need to get healthy seafood from the ocean. We don't deal with that aspect very well. We don't have a lot of data on that

aspect. But it is something that we understand happens in concept, and we want to work with the states.

A lot of that is state fishing, not necessarily federal fishing. But we -- it is an issue where we've had a discussion. It is part of our policy to try to figure out ways to better account for that, in terms of an important use. It's not just recreational fishing; it is an equity and an EEJ issue, and we don't always realize it to be so.

So we're trying to identify that and trying to figure out how best to integrate that into management. It's not easy in terms of trying to figure out data on when that's really happening. But that is something we definitely want to work with the states and other partners on trying to get at that aspect of the situation.

MEMBER FOTE: Well, can I do a little follow-up to that, because in the Atlantic States Marine Fisheries Commission, we have conservation equivalency, and so Connecticut and New Jersey basically looked at summer flounder and realized that

each fisherman here and each fishery didn't have a great opportunity to catch 17, 18, 19 inch fish, and we were allowed to do this in the conservation where you can allow certain areas to get 16 inch fish.

We do it at our beach; we were going to expand it but we never did because of the complications. But Connecticut has a few areas where they can say summer flounder two inches or smaller because that's just all that's available to them at those beaches. But through the council system, you can't do anything like that.

MR. RAUCH: Sorry, it was a little bit hard to hear. Was there a question at the end of that? I mean the Atlantic States can do more on that, and what -- did you ask about the councils?

MEMBER FOTE: Yeah. I mean what, how can we get the councils to be more adaptable to do something like that in certain situations, because when they put a policy in, the states are no longer -- the states have very little say in what the regulation of the east coast, about the regulations are in fisheries.

We just rubber-stamp what the Commission sends us or what the council sends us. So there needs to be decisions like this made at the council level and the Commission level, and not at the states level most pieces.

MR. RAUCH: Yes. A fair point, and that is something that I'm sure that we're going to be addressing in the regional implementation plan, which we're going to be talking with the, you know, Atlantic States Commission, the various entities at our Greater Atlantic Regional Office, about what those opportunities are.

I know that those are something that the council continues to look at. They're not a lot of solutions on that, but that is something that we will probably be looking at in the coming months as we try to work on that. I don't, I don't envision the implementation plan to have necessarily solutions, because there's a lot of entities and processes involved. But it should identify certain issues that we want to collectively work on and try to address.

CHAIR DAVIS: Thank you. Okay, Pat and

then actually Brett, and then Clay. Thanks.

MEMBER SULLIVAN: Great. Thank you, Madam Chair. Thanks Sam very much for the presentation. It's really nice to see some openness with regard to the national standards that are great in terms of interpretation. I obviously am quite interested in National Standard 2, which needs some tweaking as well.

But my question for you today is are the slides available for us to take a look at? Yes, excellent. And that would be nice, and I wanted to ask you more about the communication part. You kind of emphasized this again, reaching out to the councils and so forth. I of course was aware of the different standards that were being looked at.

It's nice to hear what National Fisheries Service is worried about in that context, and I'm taking it that that's part of the communication that will happen when you go out, will be communicated more broadly because I thought that was really insightful.

MR. RAUCH: Yeah. Thank you for the comment. We've already started the communication,

right, with the councils last week and with you all this week, and it is the same sort of presentation we're going to give out. We are going definitely through the council process, but also recognizing that the councils are only one set of entities that are interested.

We are looking for other opportunities. There's a public comment period that goes through September, so we have a lot of opportunities to do outreach. But yeah, our outreach and I would encourage you, like Janet did, to read the ANPR, which lays out probably more eloquently than I did, that basic thinking that I just went through with you all.

That's all in the ANPR, and that will all be in our outreach as we go talk to various entities that are interested.

MEMBER SULLIVAN: Great, thanks.

CHAIR DAVIS: Thanks for that, and just so you all know, the slides are linked in the agenda. So you'll be able to access those. Oh okay.

(Off mic comment.)

PARTICIPANT: They're on the website.

CHAIR DAVIS: On the website agenda maybe.

Anyway, we'll look into that Pat, but thanks for bringing that up. Okay, we're going to have Brett and then Clay, and then I just want to let you know that we have a hard stop at 11:30, so but we have time for those questions. Thanks.

MEMBER VEERHUSEN: Sam, thank you for the hard work and to all of the agency staff, and to the members of MAFAC who served on the EEJ Subcommittee. This work starts with hard conversations, and it's tough. And so any time things are uncomfortable, you kind of know you're doing a good job.

So I just wanted to thank you for starting these hard conversations and commend you and Janet and the agency for opening this door, and ensuring that communities are heard. But also the difficulty in recognizing that, I guess, what communities are asking for, or at least some communities that I'm familiar with, are not coopted by better resourced stakeholders.

That's going to be difficult, and I'm troubled and saddened that certain Alaskan communities

are surrounded by some of the world's most profitable commercial fisheries, that also face potential extinction from a lack of access to these resources. But that's just one community.

That's certain communities, and I know that there are other stakeholders and communities around the country that are impacted by the interconnectiveness of the final EEJ Strategy as well as the ANPR. This is -- to be frank, this isn't an Alaskan-only issue.

You heard a lot of public comment, I'm sure, from across the country, and there are other stakeholders that are certainly impacted, recreational fishing, distributors, processors, retailers, food service and in the end, the consumer, whether it's American or international.

And so my question is just broad, and it's probably from a lack of understanding and being kind of a greenhorn to this process, is how can we help you as members of MAFAC?

MR. RAUCH: Yeah, thank you for the question. I mean I think you already did help us with

the comments on the draft Strategy, and I do anticipate -- MAFAC being a national committee, it's up to you. But I anticipate you will continue to provide us advice as to whether, how we are implementing this program nationally, and whether you think that that is -- we are going in the right direction. We would appreciate that.

I don't know that MAFAC will be involved necessarily in the regional implementation, although many of you might be as you're individual members, and that that would be fine. We encourage that, you know.

We've heard a lot about the individual issues in the particular regions.

So that's how I do believe MAFAC as an organization already has provided some helpful input, and can continue to provide us helpful input on the national program. I certainly welcome your individual participation, although maybe not through MAFAC, in terms of the individual regional implementation plans as they come along.

CHAIR DAVIS: Thank you for that. Clay.

MEMBER TAM: Thank you Madam Chair, and

thanks for, you know, the presentation on EEJ and bringing some equity to under-served communities. With that said, I think that a problem that we have in the Pacific is trying to mitigate between different national initiatives. You have EEJ on one side; you have sanctuaries on the other. One is dealing with a community and allowing under-served communities to fish.

On the other side for sanctuaries, you're closing off allocation, access to fisheries with no science base. And so I pose a question, is how do you mitigate against those initiatives and what we've been faced and fighting? In American Samoa, if that cannery shuts down, you pretty much put the whole island on government subsistence because it is a vital part of a community, for what we do here and what we say in these meetings and sanctuary.

I mean three minutes to speak our mind is not enough time. We sit here for three days and we talk. When it comes to sanctuary, we've got three minutes? That's pretty difficult and, you know, I think the fairness of the policy and I thank NOAA for

having these meetings and discussions because it is important to our communities. Hopefully, we'll see more of that on some of these initiatives that come forth. Thank you.

MR. RAUCH: Yeah, thank you for the comment. It is certainly not lost on me. I've been to the to the cannery, I've been to American Samoa, I've been to all of our territories, and just how important fishing access is to those in ways that we don't often calculate and don't often go through that national equation.

And we've heard repeatedly, we heard at the CCC some very outspoken concerns about, you know, is the administration speaking in one voice when it articulates the importance of many of these underserved communities, and then is, at least the perception is that they are going -- they are establishing other policies like you indicate which are closing off access rights.

That's a fair point. I don't have an answer to that, but I can -- I certainly understand where people like American Samoa are coming from.

That cannery is critically important and if it goes away or there's not enough fish coming in, it is hard to see what's going to happen to American Samoa since that is the lifeblood of that community.

So I don't have an answer, but I do recognize the issue.

CHAIR DAVIS: Matt, did you have another question?

MEMBER UPTON: Yes.

CHAIR DAVIS: Okay, thanks.

MEMBER UPTON: Thanks, and I want to second what Clay just said in terms of the other statutes and obligations that we have to deal with.

My question is around the national standards, and one of the concerns I have is that some of the terms equity, practicable, dependence, they seem to me to be really subjective. Whether or not you view a council as following them might kind of connect with how close is it to the outcome that you're advocating for.

So I was wondering if that's just an inevitable part of having to deal with this, or is

there some idea that these changes will somehow improve the subjective aspect of it?

MR. RAUCH: Certainly in terms of practicability and dependence, which are statutory terms, we don't -- practicability in particular has very little guidance in terms of the -- of the existing national standard guidelines.

I think it would benefit all of us if we could get to a more objective approach to practicability, so it is not quite so subjective. That would be one of the goals. Can we get there? I don't know that you can get there with a term like practicability. Practicability exists in many different statutes around the government, and there is a wealth of experience of agencies, much more so than ours.

I mean we -- practicability has not been something that we have dealt with frequently, but it has really been important when we've dealt with it. I imagine we'll be looking at some of the other agencies that have employed the term "practicability," and see whether we can learn any lessons from that.

We'll be learning from the stakeholders and the people that comment and our partners about practicability. But the goal would be to be more objective and less subjective. Can we provide some more clarity to these issues, which all these issues exist now and are somewhat subjective now to the extent that we don't have clear guidance. The goal would be to provide more clarity on some of those, if we can.

CHAIR DAVIS: Okay, Sam. Thanks again so much for the presentation and discussion that you had with MAFAC, and you've given us lots of things to think about and how to continue to advise as you move forward. MAFAC, thanks for your discussions and questions. So we are now going to break for lunch.

We have a good hour and a half. There's lots of great restaurants in the area, and we'll look forward to coming back, and then starting off with science updates from Cisco and his group, so we look forward to that. So have a great lunch. See you all back here at one o'clock. Are there any other announcements? I see Heidi looking at me. No, we're

good? Okay.

PARTICIPANT: Can we leave our stuff here?

CHAIR DAVIS: You can leave your stuff here, yeah. Okay.

(Whereupon at 11:25 a.m., the above-entitled matter went off the record and resumed at 1:03 p.m.)

CHAIR DAVIS: Okay, good afternoon everyone. Hope you all had a good lunch. There's so many good restaurants here, it's amazing.

So we're going to start off the afternoon with a science update, and it's really exciting to be in California, in this area, because we're also going to not only have an update from Cisco, but also from the staff that are here from the Southwest Fisheries Science Center.

So we have a few presentations that will be coming up. Barb and Elliott will also be providing us some updates. So we'll go ahead and lead off with Cisco. Thank you very much.

MR. WERNER: Thank you Madam Chair, and thank you again for the opportunity to speak on this

topic. I'm going to be speaking about something that I think you've all been -- you've all heard about, you know, the Climate Ecosystems and Fisheries Initiative, and the things that have led to that.

But before I start off, I know that you've been working very closely with Anne Hollowed, who's sitting back here, and I just -- Anne's name is going to come up a number of times, because Anne is responsible has led a lot of this work. Anne and I, you know, worked on these things back when, I was going to say, when the internet was in black in white.

But there was no internet back when we started working on things like this. And so it's been really a pleasure to work with Anne for several decades now. I mean she's a true rock star in all of this, and again her name's going to come up a lot.

So I'm totally nervous with Anne sitting behind me, so anyway, so I wanted to give you a little update on where we are and where we're going, and I'm going to start with basically the messages, and then I'll walk you through it. So we all know climate change and variability is happening and it's impacting

our living marine resources.

We've all moved from wouldn't it be nice to know to we need to know, in terms of how we approach our understanding of climate on marine resources. Within NOAA and also more broadly in the academic community and internationally, we've made notable advances in being able to predict some of these changes. I don't want to get too far ahead. But we've made progress, and I will talk about the climate and fisheries -- Climate Ecosystems and Fisheries Initiative that will, you know, lead up to this thing.

The idea is to provide sustained provision of regional ocean and climate information, you know, across living marine resources in various time scales, and also working on how do we translate this information to improve management and stakeholder decisions? So it's not just getting the better answers, but also how do we translate it.

And so you've seen this before, and this is one of the slides where Anne's name comes up because she was one of the leads on that document down

there that was put out by the IPCC, the SROC document.

It's a very compelling and complete document on the changes in the ocean and the cryosphere under climate change.

And the things I want point out is that, you know, for a long time we thought well, you know, climate change is something gradual and things are warming up. And in some ways that's a result of how some of these things are reported, right? Everybody talks about well, is global warming is one degree or two degree and so on. Yes, I mean that's an accurate measure of global warming, because it's an enormous amount of heat that you translate into a number, two degrees globally.

But I think what's more important is yeah, okay. So things are warming up and things are changing, but we realize now that perhaps the more relevant questions to what we're doing is where it's happening, because it happens uneven. That picture in the bottom right, you know, is an example of marine heat waves that you've probably seen before.

When things are happening, how long

they're happening, how often they're happening, and how extreme some of these events are. I think these are all things that now we're quite used to thinking about. That when, where, how often, how frequent is perhaps that measure of -- that we refer to as shifting from stationarity to non-stationarity and the picture here is actually the last thousand years of northern hemisphere temperatures.

What you see here is how stable it was say the previous, you know, from say 1000 to 1800, you know, when the Industrial Revolution took place and then that's that blue part. And so yes, there were fluctuations, but on average we had an average.

And what we've seen now is that we don't have that. We have moved to a time when the averages aren't average. Everything is changing. We live under conditions that are trending. So those are the three, you know, the things on this side, you know, the wiggles that are now about a trend, the wiggles about, you know, different magnitudes of the wiggles and also how frequently those wiggles happen.

So this is a pretty fundamental shift in

terms of how we think scientifically, how we measure things, how we analyze things, etcetera. This is sort of a profound change in our approach.

This picture here is a nice picture, and I'll try to summarize it. It's the same idea, this is the last one with wiggles I think, where the green line above is, you know, the long-term wiggle as I say, the frequency of El Niños or other things like Pacific decadal oscillations and things like that. So things that happen every N years, you know, five years, ten years, things like that.

Then you have some, you know, that little red line which is, you know, extreme events and such and you have that gradual blue line that's increasing, and that would be like well slowly temperature is changing or something. Then you have the sum of all of them, right? That's that black line, and what you see there is well, sure enough, you know.

The wiggles are still there, but there's an underlying trend that if you look now at that sort of pinkish and yellow bars, horizontal bars, it talks about extension events and so on. But it doesn't have

to be all about extension events. What you see there at the far end of that black line is that we begin to bump up against thresholds, and the thresholds could be extensions, the thresholds could be shifts in distribution, the thresholds could be changes in ecosystem structure.

So the point is that we are bumping up thresholds more than we did before because we are -- we're getting to that point, and the picture in the bottom right is something that was produced from -- by our folks here in the Southwest Center, Andy Leising, Steven Bograd and others, which if you look at sort of the spikiness of it, there's also a change in that frequency of occurrence.

So that original paper from 2018, which is the top part, I'd have to say has to be corrected, that those spikes now are occurring more frequently and we're bumping up or exceeding thresholds more frequently than what we did before. It's a way of thinking about how all these things come together, and why these things are so palpable, if you will, right now.

This is a very quick thing. I was going to take just examples from Four Corners, starting with Alaska. I think we've all heard about the shifts in Pollock, and that had to do with a change in what's called the occurrence of the cold pool, which is that pinkish -- the pinkish hue in there.

You see in 2010 it occupied a good part of the Bering Sea, and then it shrunk and then in 2018 it was not present, which resulted then in a shift, those purple. The purple-colored areas is the location of cod, and it basically shifted 800 kilometers in eight years. I mean it's an enormous shift that we haven't seen or we hadn't seen before.

We talk about gradual shifts. This is, this is a huge shift. On the northeast side there is, you know, the example of the North Atlantic right whale and again, you know, changes in the Gulf of Maine resulting in changes not just in temperature, but also where the food is for the North Atlantic right whale is.

So it follows the zooplankton, which is that little thing up in the top right. So that's a

change in ecosystem structure, and if you go down to Florida or Gulf of California -- sorry Gulf of Mexico, you saw the occurrence of red tides. It's not unique there. It also happens out here in the west.

But those things, you know, the frequency of their occurrence, and remember there was one what, two years ago that lasted about eight months or something, you know, are things that affect the recruitment of some of our populations. And if you go completing the corner, you know that you can go down to, you know, where the corals in the Pacific and the bleaching events that we saw, again associated with the warm blob and such.

The west coast is going to be talked about by Elliott and Barb in the next talk, so that's not in here. But they'll explain a case there in terms of what we see. So in some ways, so what do we -- how do we put all this together, and this picture is one that I borrowed from Ava Plaganyi, who basically said how do we, how do we manage in the future, right?

And you know we -- sort of the dashed line is where we are now, and we used to think that there

was something that we could aim for, you know, something stable that we could aim for with oscillations but stability, and I think her message here is nicely captured, that we have to start thinking about how do we manage for variability as opposed to stability.

All of these things are changing that I talked about before, and they're occurring at different rates. So it's not -- how exactly things manifest themselves ultimately is something that is tricky and might have multiple outcomes, and I'll talk a little bit about that later.

So we start saying okay, if we have to think about trends, we need to think longer term. So we're not just talking about what's going to happen next year or the other year, but maybe we need to start thinking about what happens a number of years out. The term here is seasonal to sub seasonal to decadal. So we need to start thinking about in terms of two years, five years, ten years, so that we can begin to see how it is that we plan.

Those colored bubbles there talk about how

do we -- how do we think about in this longer term about monitoring enclosures, you know, annual catch limits, etcetera, but really thinking about them in terms of the longer time scale than we do now.

And sort of the grayish colors there are different processes that we normally wouldn't have included when we -- when we think about how we provide the underlying physics and such that is driving our living marine resources. So the problem gets a little bit complicated, and it's also one where the picture on the bottom right talks about how good, how good are we in terms of our ability to forecast at those scales?

So the blue line is basically the weather, and we know that we're pretty good, you know, sort of the days to weeks with the drop-off in terms of our skill. In terms of the purple, the right-most one yeah, you know, we're okay. But we kind of know where we're headed. There's just like an inertia in system that we know where we're headed.

So our prediction is not great at some level but it's -- we have a sense of where we're

going. We're faced with a harder problem, which is that orange line. The orange line is that in between.

We're neither it's the long term nor the short term; it's somewhere in between.

That is perhaps that sub seasonal to seasonal time scales is the one that we have to deal with, and yet it's the hardest one to deal with, and there's reasons for that.

You know, it's not -- it's not like an initial condition and let it go and or what's called a boundary condition that we know what's happening far afield and how that's going to evolve. But there's a lot of internal issues that we have to -- that we have to resolve.

So again we're thinking about longer term, and so this next picture is the last sort of geeky picture like this I'm going to show. But it I think illustrates nicely how things get complicated. And so you can sort of see the continents there. You see South America, Asia, you know, the United States and so on.

The red things, the red blotches are our

ability to predict chlorophyll sort of three months out, you know, basically primary production. How much chlorophyll is out there? At the Equator we do well; there's something called the Equatorial Wave Guide and we're pretty good at dealing with things, at least on these time scales at the Equator.

If you look at the North Pacific, which is in the blue or the North Atlantic which is in green, the circles there, you know, there is a level of skill. The darker the red, the better we are, okay. And so what you see there in the North Atlantic it's a darker red than the North Pacific.

So the question is well why? Why is it that one is better than the other one, and the answer is that at these time scales, you need to start thinking about dust that comes from the Asian continent, right? So all of the sudden you're thinking longer-term, and you say well, it's not enough just to think about what happens in the ocean.

I have to know what's happening on land as well.

In this case, what's the -- what's the dust, the Asian dust outfall that actually provides

iron and such, you know, to that primary production?

So the complication comes in that as you start getting longer time scales, you have to take on what's called an Earth Systems Approach. It's no longer I can look at the ocean or the atmosphere or the land; I actually have to look at all of them integrated.

So it's challenging. So I was going to make a jump here to the CFI, but just last week, we were at the CCC and we had a presentation from Diana Stram, who quoted a document that was chaired again by Anne. Anne, are you sure you shouldn't be up here? Anyway, and I stole a couple of slides from Diana.

Again, this is a symposium of the what's called the SCS, the Scientific Coordination Subcommittee of the councils, right? And they met last August and they have this report that's available up there in the top right, you know. There's a website.

But the point is what did, what did they conclude, you know? What was, what were the four main things that emerged from that? So for the councils,

the key findings that this document says is councils need to start preparing now for increasingly complex management decisions climate change. Okay, we kind of got that, you know.

Investment is needed in the development of new data collection and analysis tools. This is the whole idea of we need to measure more in more places in different ways. But fortunately we do have analysis tools that we didn't have back when.

We need to prepare to transition to more sophisticated toolboxes of models. Somebody said why are there so many models, and it's -- there's a reason for why they might be there, and of course the stakeholder engagement is critical. I mean we can't, we can't -- first of all we probably don't understand the ocean as well as we would were it not for the stakeholder engagement.

And on the bottom right, I just highlighted some key words, you know, where this document talks about needing to look at the future non-stationarity of the environment, moving you know, towards ecosystem linkages, risk assessment, and

preparing to transition from just reliance from indicators to perhaps more dynamic simulations of the ecosystem, which is the modeling approaches that we would bring.

So that's kind of where the CFI comes in and the CFI, you know, in summary, you know, we proposed to build this end-to-end operational, just modeling decision support system for the climate-ready fisheries. You know, the idea is to provide NMFS and other decision-makers with forecasts, risk assessment and enable climate-informed living marine resource management.

And so to that double Mobius strip there on the right just says that, you know, yes it starts with the science. It goes to the operations, it goes then to the management and the extension, but then it loops back, you know. This is a constant evolution in terms of how we have that conversation.

So I'll just -- the last three slides, how are we going to do it? So this is within our approach that we're taking within NOAA, and this is in cooperation with the Oceanic and Atmospheric Research

line office. So the idea is take these climate models and do what's called a downscaling, you know. Just take a cutout of these models that are global. As I said, you know, it's important to ensure that everything is connected and these are system models.

But then take these outputs and perhaps make them more refined or more focused, and so in this case this is an example of a grid, what we call a grid that goes say from basically Central America all the way up to Alaska, or something that we would look in the Arctic or something that we would look along the west coast, I'm sorry, the east coast.

These things then would be taken in by teams that would then do the following, and I'll just tell you what the following is. So the idea is -- it's a busy slide, but it's - - it's pretty straightforward. So you start on the top left with different climate scenarios, and those climate scenarios are exposed to say different responses that ecosystems could have, and I gave a couple of examples of why ecosystems can respond differently.

These multiple possible responses of the

ecosystem can then result in different impacts on, you know, the fisheries, higher trophic levels. And so depending on which scenario you look, you can have a number of different responses. And then in the bottom right, you can then construct possible scenarios in terms of how you think forward.

And so it's a hugely computationally challenging thing, and the science and everything that goes behind it is enormous. But it's something that we kind of have a handle in terms of how we do it, at least as next steps that we want to do under the CFI.

The bottom and the top right cartoon is just that process again of, you know, you start with scenarios. You bring in the management and the stakeholders, and you come up with perhaps these red light, green light, yellow light, possible outcomes that allow you to make decisions for how you were to manage, you know, your system.

So that's in a -- sort of at a high level how the CFI could proceed, and this is an example of the Alaska Climate Integrated Modeling Program again, and was the lead of it for a long time. Now it's

Kirstin Holsman and others, that it's a large group that has made this possible. And so two more slides.

This one is just how we're going to do this, and this is looking a little bit under the hood.

What we see is at every science center, you know, there would be a group of folks that would be set up, what we refer to them as decision support teams that take these ocean predictions, and can look at a number of things.

They can look at things on short time scales. As I said, you know, things are happening more frequently and more extreme. They can provide, you know, habitat distribution maps and such that Elliott is going to be talking about in a little bit.

Then there's ultimately the how do we, how do we do this, the kind of people that we need in terms of we need anything from population modelers to assessors to, you know, all the way out to how we then perceive with the applications, which are the scenario planning, risk assessments and management strategies and advice to management.

So this is my last slide. This is the summary slide, and I tried not to put too many words on there. But the idea is what we're doing is taking these evolving conditions that are there, quantifying them as best we can, conduct you know, these scenarios where we evaluate the likely outcomes that come up with these possible outcomes, and again the different scenarios as we evolve our thinking in terms of managing for variability and not for stability.

So that was it. That was a quick run-through of what the CFI is. I think hopefully it gave you a high level discussion and what we thought was then -- I'm not sure, Madam Chair, if you wanted to take questions now or dive a little bit deeper into examples from the west coast. Yeah, okay. So dive deeper, okay, all right. So pass it on to Barb and Elliott, all right.

DR. MUHLING: Should I sit here or go up front?

(Off mic comments.)

(Pause.)

DR. MUHLING: All right, excellent. Thank

you. I'm going to be talking a little bit about the Future Seas project, which is a really big team of people, just a few of which are listed on this slide here.

Basically Future Seas is asking what will happen with climate change on the west coast, how will that impact fish and fisheries and how will that impact communities that rely on fisheries for their livelihoods?

Our fisheries focuses so far have mostly been pelagic, so for highly migratory species and forage fish. The science revolves around end-to-end modeling frameworks. So combining everything from climate models through ecological models, all the way up to socioeconomics.

We're a really diverse team, ranging from climate scientists to ecologists to economists and social scientists, which is really essential as you'll see in a minute.

We're concentrating on the California Current ecosystem. Most of you are very familiar with it, but the main points to note that it's a productive

upwelling system, and a really key characteristic of it is that these small forage species like sardine and anchovy are really key for transferring this primary productivity to higher trophic levels, including species targeted by commercial and recreational fisheries and protected species as well.

So Future Seas Phase 1 ran from 2017 through 2021, and this is a schematic of that whole project. So it's an end-to-end modeling framework. We started with outputs from global climate models, which Cisco touched on briefly, and then we downscaled those to the scale of the California Current ecosystem.

We then took those projections of the future state of the ecosystem and applied them to a range of different ecological models. Then we did management strategy evaluation for different aspects of the management of sardine, albacore and swordfish in the California Current, and used those to inform socioeconomic models.

So the main take away for Future Seas 1 is that it's end-to-end, from physics to fisheries, but

it ultimately has a single species focus, so one species at a time. I'm not going to attempt to summarize everything we did in this project, but rather just take you through a few sort of sound bites of our main results.

So what did we find? Very unsurprisingly, warming and changing oceans. This study at the top by Mercedes Pozo Buil looked at how will the California Current system change between now and the end of the century. This shows the projected warming by the end of the century, from three different climate models. Just for ease of use, we call these climate models after the institution that produced them.

So GFDL is NOAA GFDL in New Jersey; IPSO is in France; and the Hadley model comes from the UK.

We picked them because they sort of bracket the range of potential futures represented by these climate models. But and you can see that all of these models project warming unsurprisingly, but the scale of that warming is variable across the models.

And we can use these projections to look at the point at which conditions in our study area

become novel; that is something we've never seen before. So the study at the bottom by James Smith used not just temperature, but all of the different variables that we traced in the California Current, to ask at what point will each location in the California Current become something we've never seen before?

And you can see in the maps at the bottom that by the time we get to the end of the century, really the whole region, this is maps for August, are really conditions that we haven't seen before in our system. So we're really moving outside the range of what is normal fairly quickly.

And what does that mean for the biology? This study here from Stefan Koenigstein looked at the future abundance of sardine. The results are shown across those same three climate models. The black series on the left is the historical predictions from the models, so you can see it in context.

The top row is the biomass of adult sardine and the bottom is the survival of the early life stages. You can see that there's a lot of uncertainty as we start to get towards the end of this

entry, but the main take home is that all three models predict an eventual increase in sardine biomass.

A completely different model, an individual-based model in the study at the bottom also looked at changing abundance and distribution of sardine, and they show this steady northward shift in the distribution of sardine from mostly off the coast of California to really being more predominant in the Pacific Northwest.

And unsurprisingly, this would lead to shifts in landings. So here I'm showing across those same three models changes in landings at three ports:

San Pedro, Moss Landing and West Port, green being increasing landings and orange being declining landings. If we see these distribution shifts, unsurprisingly we start to see West Port become more important for future landings of sardine.

Moving to our second species, we also looked at changes in the distribution of albacore, and here we're just looking at change from the recent historical past through to the end of the century, with blue being less probability of albacore fishing

grounds and red being higher probability.

You can see quite easily that what we have here is not so much a northward shift as we saw in sardine, but more of an in-shore contraction, as the offshore waters start to become more like what you'd see in the tropics, very warm, very oligotrophic. The habitat we associate with albacore starts to become pressed up against the coast.

Moving a little bit more into the management and socioeconomics, these are two studies by James Smith looking at swordfish in the drift gillnet fishery. So many of you are probably familiar. The drift gillnet fishery has a static, closed area to protect sea turtles. Elliott will talk a little bit more about this next.

And so it's been proposed that using dynamic closed areas, depending on where swordfish are and where protected species are, could allow more efficient prosecution of the fishery, and again Elliott will talk more about that. But what James did was he looked at a few different ways of doing this dynamic ocean management, and said what happens in the

future?

So all these graphs show is two different ways of enacting dynamic closed areas projected forward into the future. So you can sort of see here in the top left two strategies that look fairly similar during the present day, actually start to diverge as you move forward in time.

At the bottom, James took a step further and he looked at the environment of the California Current in terms of economic opportunities for fishermen. So not just where are the fish, but how much would it cost for you to go out, catch those fish, come back and sell them. Like what, how much money would you make?

And again, not doing justice to the complexity of the study here, he found that how you enact closed areas and how much of that habitat is accessible to fishermen changes how much money they can make, but also that those equations change through time, as the California Current itself changes.

And just lastly for Future Seas 1, we also had a bit more of a look at the social-ecological

connections. This study by Tim Frawley, he looked at -- unfortunately this is hard to see -- he looked at participation networks amongst fishes. So depending on what's available, depending on markets, fishes can switch between targeting different species.

The blue dot there is the albacore troll fishery; the yellow dots are other fisheries. If I font this a little bigger, you can see that the biggest spots are for the chinook troll and the Dungeness crab pot fishery. In recent years, as both of those fisheries have been intermittently closed or had other issues, the albacore troll fisheries become sort of an insurance fishery for fishermen to fall back on.

Tim also conducted a lot of interviews with folks from the industry, and I just put a couple of quotes there. But you can see that they're very aware of how environments change, species change and markets change. And taking those characteristics that Tim defined, this last study at the bottom also showed a potential future northward shift in albacore landings across ports.

Not as driven by the species themselves shifting, but by the, for example, the infrastructure available for these ports, the other characteristics of the fishery and the infrastructure.

Okay. So now we're up to Future Seas Phase 2, and that's running from 2020 through next year. You can see here that our plan of attack looks quite a lot like Future Seas 1. We're starting with these downscale projections, moving into ecological models, and starting to look more at socioeconomics at the bottom.

Our main aim here is to try and define climate robust management procedures. A big change here is the inclusion of the Atlantis model on the right. And so we've moved away a little bit from this single species framework, and we're now -- we're focusing mostly on fisheries for forage fish such as sardine, anchovy and market squid. But we're trying to consider them more in the context of the whole ecosystem.

So most of our products are in progress at the moment rather than published, but we have an

amazing array of work mostly done by our early career scientists. One of the things that Pierre-Yves Hervann has been doing is rebooting this Atlantis model for the west coast.

Atlantis is immensely complex. It includes, for example, all of those processes that I've listed in the top figure within each of those spatial boxes in the map. So each of those processes happens within the boxes, and each of the boxes can talk to each other. One of the ways he has been working with others to improve the model is by incorporating statistical models of species distribution into Atlantis, to inform where species are and at what time.

With these tools, we can start to think about projecting future species landings. So this work at the top led by Owen Liu out of the Northwest Center is combining historical footprints of fisheries with projected changes in the ecosystem within the Atlantis model, to start to think about predictive landings changes of a portfolio of species. So I've shown an example here for sardine, anchovy and market

squid for a series of ports from Mexico up to Canada.

Something else we've been starting to think about is model ensembles. So this is sort of analogous to when you see the predicted path of a hurricane. It's not one model; it's relying on an ensemble of models. They have different parameterizations; they might have different initial conditions.

By looking at the differences among them, you can learn a bit about where your main uncertainties are, and what might be the most likely future scenario. This is the first attempt at looking at sardine landings in the Northern California Current system.

And just lastly, more of the management and socioeconomic side. Felipe Quezada has been looking at splitting the vessels that target CPS into smaller groups, depending on their characteristics. These vessels aren't monolithic. They target different species, they're based in different places. They might have different ranges. And so he's

dividing them almost into communities which will respond differently as the ecosystem changes and species shift their distribution.

And lastly, Robert Wildermuth has been using management strategy evaluation to start to examine some harvest control rules for sardine. If you're not familiar with MSE, I'm sure most of you are, essentially you're building your simulated world, what you think the system is. You apply your management strategies to your simulated world, and you see what happens.

So we can try this HCR, we can try this HCR, and then we feed the management back into the ecosystem to see what happens. I'm not going to talk about these in detail, don't worry. But I just wanted to point out that we have a lot of other products and work in progress from this project, mostly due to our amazing early career scientists.

These range from ecosystem models, socioeconomics, and all the way up to management strategy evaluation.

Just lastly, most of you already have

these things in your minds, but if not just to plant the seeds of I guess why would we care about this? In terms of shifting distributions, we know this will impact the accessibility of fish to fisheries. But it can also impact things like survey planning. We have surveys that go out and sample particular stocks to help determine their biomass.

If the footprint of the survey doesn't match the stock anymore, then we need to adapt them. We have several species that are managed between nations, between states, between other entities. If species are moving, we may need to think more about how to effectively do that in the future.

We've already talked a little bit about changing bycatch, predator-prey interactions, and summing up we're starting to look at more is the vulnerability of fishery-dependent communities to all of this change.

In terms of changing stock productivity, that has implications for effective stock assessment as well as management strategies, as well as impacts on the ecosystem itself, particularly with these

forage fish which are so important as prey for top predators and other socioeconomic impacts.

Okay. So finishing up. I thought it might be useful to talk a little bit about the lessons learned from these two really large projects. I made the modeling framework look very simple with my schematic diagrams, but it took a lot of back and forth to try and figure out how to get everyone's rules to mesh together.

We put a lot of emphasis in making sure our models can capture past dynamics. I think Cisco mentioned someone said "why so many models?" Well, I guess that's our way to look into the future. It's the only way at the moment. So we need to make sure they're plausible.

We need to capture and communicate uncertainty, and there is a lot of uncertainty from a lot of different sources, from climate models to ecological models to just uncertainty in how people will respond. We're continuing to engage stakeholders, mostly through the Pacific Fishery Management Council and other avenues, and we really

found that multi-disciplinary teams are necessary. There's no one person that can do everything from physics up to socioeconomics.

This is the broader team. Thank you very much for listening. All of the publications I mentioned are available on our website at the top here.

(Applause.)

PARTICIPANT: Hard act to follow.

DR. HAZEN: A very hard act to follow. Thank you. So my name is Elliott Hazen. I'm from Monterey visiting here just for the day unfortunately.

But I'm going to be presenting a lot of research not just from me, but from many other folks in the Northwest Center and the regional office too.

But really talking about how we're trying and a lot of this work is also in prep, to use climate-ready information in the decision-making process to meet the needs of multiple stakeholders.

So the first thing I'll talk about is the IEA, which stands for the Integrated Ecosystem Assessment, Ecosystem Status Report. This has been

delivered annually at the March council meeting for over ten years now. But we have had two kind of major changes through dialogue. One is we incorporated monthly status. So we were looking at not just what happened last year, but what happened every month of last year, which was really valuable to the Pacific Fisheries Management Council community, as well as now we have a climate change appendix.

This is trying to look at indicators of climate change, but also some of the predicting, the predictions like Barb just presented. Why is it important? Because what we expected from 2022, a lot of the broad scale indices things, we're basically saying it was going to be a cool year, it was going to be a productive year.

The heat wave was very far off the coast and very looking good. Upwelling was just right, Goldilocks scenario. But then what we got was quite different, and that happened particularly later in the year, where we had stronger atmospheric pressure systems that changed things, as we were all familiar with on land and sea, variable upwelling and down

welling, and then a lot of these marine heat waves that were incredibly disruptive to the system.

So have these more reactive reporting of ecosystem conditions is important, but we know that data can take time when it gets off of a boat to then be QAQC'd and get in the right hands. So that's something that will be even more important moving forward.

I did one particular case study of how this Ecosystem Status Report was used for the Council this year, is about the sablefish. I don't know if folks are familiar with it, but it's a very tasty fish, shelf and upper slip Groundfish, very valuable, one of the most valuable on the west coast, and they also have these very episodic strong year classes that are linked to climate variability. So you need those large year classes to really sustain the population.

Well, also these juvenile fish are leading indicators of future sablefish harvest for the bottom trawl and fixed gear fisheries, and they can be incidentally caught as juveniles in the Pacific whiting or the hake fishery and the Pacific salmon

fishery.

And so this past year, there was unexpectedly high juvenile sablefish bycatch in 2022.

You can see from the Joint Technical Committee quote on the left. They were reported by all sectors, and the right the commercial fishermen just said we've never seen them here before in these numbers. So we were able to present on this in the ESR, but then relate it back to some of our indicators, the ecological indicators of the oceanic conditions.

They matched this qualitative accounts, and you can see in the plot there that sablefish age zero biomass was much higher than previous years, and that corresponded well with the sea services size index shown below.

Altogether, as we presented this Ecosystem Status Report to the Council, this is a little bit of hearsay but I heard that there was someone that ran down the hall and said "Hey, this is a good sign for sablefish. We should have a rapid update on the sablefish assessment." So in response, NMFS has agreed to take on the west, I guess it's really the Northwest

Fishery Science Center, an updated sablefish assessment this upcoming year. So it's a great example of how this status information can get into an updated assessment.

Maybe not running down the hall, that might not be the desired way we want to do it moving forward, but there's a lot of potential in National Standard 8 outcomes, particularly adjusting the sablefish quotas can help keep the fisheries open due to bycatch, reduce costs and hopefully balancing the conservation of the new year class for the future sablefish catch.

And then this additional information, both qualitative validation from the stakeholders, from the fishery, and additional information as it comes in from our cruises as well can give us the information to do our best job kind of with this updated assessment.

So I want to talk about another initiative. It's also really butting this Ecosystem Initiative 4. It's part of the Ecosystem Working Group and these slides from Yvonne deReynier in the west

coast regional office, where we're targeting particularly Petrale sole, partially because we know there's an oceanographic driver to their recruitment from the papers shown here.

But they're also a pretty data-rich system to study, and they're up for a stock assessment in the next year or two. So it's very timely to be exploring how we can bring climate and ecosystem information into their assessment, or into their management in particular.

So the new ecosystem initiative would review the incorporation of how ecosystem and climate information is coming into the Council's harvest setting and fisheries management processes. We don't think that getting the information into a stock assessment should be or is the only way to include climate and ecosystem information.

So we want to be creative and determine the need and appropriate timing for when a new fisheries management plan or specific ecosystem and climate information can be included in that. Identifying needs for these additional pathways of

ecosystem information, and clear pathways where it can be used, as I mentioned, beyond just a stock assessment of incorporating scientific uncertainty and harvest policy moving forward.

So I'm going to dig into this a little bit more and I will zoom in on the figure on the right so I don't try to read it too much here. But this is how the Pacific Fisheries Management Council, with the EWG, is reviewing this incorporation of ecosystem climate information, and can review it moving forward.

This is a figure from Desiree Tommasi at the Southwest Fisheries Science Center, where our Ecosystem Status Report or innovative ecosystem assessment team.

We suggest the new indicators, things like juvenile sablefish analyses, models that can be reviewed to the Science and Statistical Committee. That gets reviewed by them, iterated over multiple years potentially, updated and then delivered as part of the next year's Ecosystem Status Report.

But also there's methodology reviews as

you have new techniques that come out to have these particular supports. Then once you have kind of a coherent message here, you can use that to look at during the fishing season on the left, annually or biannually, or even longer term.

So on the left, I'll talk about some examples where you can look at bycatch mitigation, impact of extreme weather and fishing safety, and near-term revisions as needed for harvest or bycatch measures. But all the way out to do you need to have an FMP amendment based on various ecosystem conditions?

So this is just one example. This was actually shown, I think, on one of the slides previously, of a salmon stoplight table, where it's trying to take all of the ecosystem information and just say is it going to be bad, medium or good for that species. You can see in the case here there's some years, the 2015 warm blob was particularly bad.

But this is again, one of those examples of how you can create a stoplight table that then can be informative to the harvest-setting process.

I'm going to jump to another one of my favorite topics, this concept. Again, everyone in the room here is probably very familiar with this concept, but I think it's important still to think about. We know that the oceans, shown by a developing El Niño in temperature on the left, are highly dynamic, as are the species that use those ecosystems.

Or if I could show an individual vessel, which I can't due to PII, you'd see the same sort of migration throughout the California Current to get, take advantage of maximum productivity and ideal kind of thermal windows. But a lot of the tools that we have and a lot of the processes are more static.

So I'll talk about one example where we're working closely again with the West Coast Regional Office, to kind of provide update maps of essential fish habitat. Those who are familiar how essential fish habitat works, often there's a single map drawn up once every five to ten years, I think, and that's what's used for any statement down the road if you're doing an environmental impact statement, etcetera.

But this is a slide from Barb that shows

now we're using models for market squid on the left, and then sardine distributions before and after this kind of a regime shift in their response, to get a better understanding of where essential fish habitat might move.

We have a similar example from swordfish.

This is the current essential fish habitat for the entire U.S. west coast to EZ. Not necessarily very, you know, fine-toothed comb there, but what we also can do is we can use statistical relationships between swordfish and their environment, to predict where they're going to be on a given day.

And we're not at the point yet where maybe the daily predictions are the most useful, but we're going to and we're funded this year to summarize these daily predictions by season, and by these regimes. So if it's a warm regime or cold regime, so you can get an idea for different management actions.

The same tools if built right and in a common framework with reproducible code can be turned into climate projections. So they can fit directly in to the CFI initiative that was just presented. They

also can be integrated with additional species and downscaled using the regional ocean modeling systems.

So going from quarter degree on the left down to a tenth of a degree or a ten kilometer on the right, and we can then look at multiple species and say in areas of blue, that's an area you should fish if you want to catch swordfish and avoid bycatch, or an area of red you want to avoid, where you're not going to catch swordfish and you might interact with something like the leatherback sea turtle.

So by building these dynamic tools, you can be a little more responsive to the changing conditions as they happen.

I give one protected species a callout since I know Sarah is going to be in the room here in particular, but Whale Watch is a tool that we've developed luckily with partners from the academic community.

But because we had tags, 104 historical tags on blue whales, and we are very lucky to also have access to satellite, ocean satellite collected oceanographic data on a daily time step thanks to NASA

and NOAA, we were able to use those relationships to predict in time and space where blue whales are most likely to be, largely for the regional office again to make decisions on where and whether the Navy was going to do a training exercise, was it going to have an impact on the whales.

But what's been really cool about this, we built the tool originally. You can see on a monthly time step simply because cloud cover limited our ability to go and find our scales with the original tool, but have since again downscaled it to the regional ocean modeling system, which again is CEFI-ready, to predict where these whales are going to be now on a daily time step throughout -- basically we have historical all the way through present day.

What was really nice about this is by doing that downscaling and then making the data public, it's now getting integrated in multiple decision-making pathways. So the bottom left is a tool called whalesafe.com. It's not run by NOAA, but they ingest, if you see that background layer, they actually ingest the predictions directly from our

Whale Watch model.

They also have little flukes that represent the sightings from whale watch vessels, and a hydrophone that gives you real time information on where these whales are present or not, so that ships can be informed and hopefully adhere to the voluntary slowdown rules.

I heard a little bit about Dungeness crab earlier in the day too, so the top left we're using the same approach, giving this data directly to the risk assessment and mitigation program to be able to allow the best information on where blue whales are likely to be for any Dungeness crab gear closures or delays in the season.

So if you build these tools in the right way and you make the tools transparent and the data available, they can be used for multiple management applications, which is really exciting.

So in summary and synthesis, we have hopefully all convinced you that climate variability and change are increasing the need for these climate-ready tools and management approaches. Being able to

report the ecosystem status at finer temporal scales can help the Council and other decision-makers make more targeted and responsive decisions.

But there's a lot of very fine-scale barriers to that like I was mentioning, getting the data into the pipeline, getting this into prediction frameworks. So that's something that's critical to move forward.

Ecosystem Initiative 4 for the Pacific Fisheries Management Council is looking at these novel or unique or previously maybe not thought about ways to get ecosystem and climate information, including Future Seas directly into the Council process.

So do look for more Future Seas results in the upcoming climate change appendix that we'll present. And then the last point is these dynamic tools can inform multiple management decision targets, and because they're predicting on a changing environment, they can serve as climate-ready information as species and the humans that depend on them shift as well. So with that, I'm happy to open up for I think discussion next.

(Applause.)

(Pause.)

CHAIR DAVIS: Wonderful, Cisco, Barb and Elliott. Thank you very much. That was great to have so much in-depth on what you all are doing and incredibly fascinating. And so hopefully I'm sure there's lots of questions and discussion. So we're going to go ahead and start off with Matt and then Brett, then Pat, and I'll keep going down the list. Thanks.

MEMBER UPTON: Thanks for the presentations and all the work that went into getting them ready. My question is focused around what happens when I think, as someone put it well, when there's what we thought was going to happen and then what we got is different, and then how is that kind of feedback loop changed up?

Because I think all these predictive models are great, but then I think you also, I assume, are ground truthing. For example, if that whale wasn't where you thought it was going to be, how do you take that information in?

And then the second part of my questions is on the management implication, which I think was -- as someone who works with boats trying to catch fish, what we're concerned about is when what was thought to happen is different from what is happening. There doesn't seem to be a way to have the management adjust.

For example on sablefish, I think that's a great example because if everyone thinks the sablefish is going to be at this level and then the annual catch limits are set, and then they're much higher, I don't really see where there can be a lot of management flexibility outside of an emergency action. So I guess those are kind of the two related questions I had. But I did really appreciate the presentations.

DR. HAZEN: So the first one of validation, I mean the long-term goal would be essentially biological, ecological and even, maybe even socioeconomic assimilation, right? So we're assimilating oceanographic data in real time, to come up with the latest and greatest models.

We could do the same thing. So if you had

a -- here's a whale that we didn't expect, we could have, again in theory, the model automatically ingest that and come up with the best, you know, adjustment as these new sightings and new data come in.

In reality, because we're not quite there yet, I would say this is why continued data collection, even if you had almost perfect models as critical, because we use the new data as it comes in to validate the models and say are they working the way we expect them to, and we've been engaging more, particularly for the swordfish example with the fishers to say hey, we're telling you this is a bad place to fish, do you agree?

Because we know they're the ones out on the water seeing that, not us. But the point about -- the point about the, kind of the rapid response is something that is, you know, Amazon can do it with your wish list based on what you bought yesterday. They can tell you exactly what you want to get tomorrow.

So and I would say the same, the same thing is true, not to bring up the dry side of NOAA,

but you know the Weather Service, they'll tell you it's going to rain tomorrow and they might be wrong, but we still rely on those predictions, right?

So it's really having those multiple scales of prediction where you have what's happening right now, what's the prediction out maybe in a week, what's the long-term projection so that you can, you know, the human brain can do a good job kind of assimilating that information better.

You know, the second part on the sablefish that is a great question that I think tomorrow would be great for one of the panel discussions, because I don't -- you know, I think Merrick Burden from the PFMC is here. I don't know of a quicker way, like you said, other than emergency action and what we did with sablefish, and that we what --

I saw it done with sablefish this year, to get it, you know, the assessment more rapidly adjusted than those two approaches. I mean it's a really good point, and one that's difficult to answer, yeah.

MEMBER UPTON: Thank you can I ask answer that?

DR. HAZEN: Yeah please.

MR. WERNER: So good question, Matt. One is grappling with uncertainties, right? You said what if it's not where it was or what if it's higher or lower than we expected? So I think we need to make sure we translate what this variability that I talked about that we're seeing. How do we translate that into -- it's uncertainties that are -- that can lead to management actions in some ways, and Barb talked about that.

And so that's something that, you know, the IPCC has, you know, most likely, least likely, you know, unlikely kind of ways. I think those are things that, you know, they might seem blunt instruments, but it's a way that we need to start evolving how we communicate this, this science that's emerging into something actionable.

But the other part, and when Elliott talked about, you know, Amazon can you tell you what you think you're going to shop for. Well the idea there that Amazon is working with artificial intelligence and machine learning. I think that's

something we didn't talk about here, because we can --

I think one of the things that we need to start thinking about is not just making the models infinitely more complex, because unfortunately the computers aren't going to be fast enough to include the added complexity and we're adding, and unfortunately on top of it I think that what we're seeing in nature is outpacing our ability to really keep up, you know, computationally with what's happened.

I mean who would have predicted, you know, whatever it is, 30 atmospheric rivers, you know, last year off the west coast or this year, whenever it was, right?

So machine learning and artificial intelligence, what that can do is, and this is a difficult one, you know, for us who are always trying to understand and try to be mechanistic and explain everything, is actually beginning to look at patterns.

And a pattern might actually, you know, through machine learning/artificial intelligence give you the ability to predict something quicker than say

your ability to explain it. So I think this is a challenge that we're looking at in terms of data-driven science and hypothesis-driven science. Not or but, and I think this is -- I think also Barb talking about the need to evolve our analysis tools.

This is a different -- this is I think something that we do need to take on, whether it's in fisheries or weather forecasting or other sort of or such, and this is actually a partnership with industry, Google, Microsoft, Amazon, whatever, in terms of how that is working and something that we might actually include to help answer your questions about how uncertain were we and why didn't we do better? So it's an open field.

MEMBER UPTON: Thanks. I guess the only follow-up I had is just that folks work on the water are just so suspicious of predictions and what will come out of models.

So I don't know how you get beyond that, because oftentimes people have been told who are doing a different fishery that this is what we're going to see, and then their experience is so different. So I

think that's the struggle that you all are trying to face.

CHAIR DAVIS: Very good. Brett.

MEMBER VEERHUSEN: Thank you for your presentations. I kind of feel like after all three, I'm like (sounding), I don't know where to start. Super fascinating and I'm not a scientist. So this is all really helpful. What I heard also is, you know, really around helping, how the agency is helping itself be a value-add to industry, to other stakeholders, to the ecosystem, to the supply chain who relies on access.

And so what I'm also hearing is a huge opportunity to -- for the, you know, when proven right and when some of those Amazon best picks you've got to buy happen to be the right thing you wanted or you got targeted on Instagram and you did like what you bought, you know, where can the agency --

Where is the agency partnering with other agencies in an effective manner, so that we as members of MAFAC can help communicate that value of the agency and communicate the need for increased funding and

capacity?

Where is it partnering successfully with other agencies or other, you know, kind of councils outside of maybe what we're seeing? I heard, I heard NASA, and where is that value being felt? Not just economic value, but value to culture, economic value of course, within coastal areas or non-coastal areas?

I'm just curious, because there's some work being done on a subcommittee on how we help NOAA communicate itself better, and I'm blown away and fascinated by what you are presenting. I think Matt is right, like where is it -- where is that correct, so that we can really show the value?

So I'm curious, where are you partnering with other agencies or kind of committees effectively, and where is that value being felt and heard and seen in real time, whether it's coastal or inland?

DR. MUHLING: Yeah. I guess I'd start out selfishly by saying academic partnerships. I work for the University of California, I'm a NOAA affiliate. So Future Seas for the most part funds

affiliates like myself to do this work. So the cooperative institutes, the academic partnerships I think are the only way that we've got a lot of this work done.

We have been working on trying to partner with -- well obviously with all the line offices, trying to work, trying to get the folks and OAR and NMFS to work close together because initially, I think we were just speaking completely different languages.

DR. HAZEN: Yeah. I think you brought up the example, Brett, of NASA, which is a huge one, and they've been really supportive of this work, because they've asked the same questions of where is NASA, which is a huge one, and they've been really supportive of this work, because they've asked the same questions as where does NASA data actually get used in management?

And so they love these examples, at least I've been told by the program manager of EcoCast and Whale Watch because it is providing a direct utilization of these satellite resources that we have,

in a use that can affect the fisheries on the water, for example, or the shipping industry on the water.

Other partners, we've been trying to work more with BOEM. I mean the area of offshore wind just comes up huge, and if we have the ability to predict again multiple time scales, so that if you're going to put a wind farm out for 33 plus years, do we know that the species are still going to be there that we're trying to protect with our mapping?

So that's one that hasn't been realized yet, but it's something we are trying to work very closely with. I think those are probably -- I mean the academic partnership has been critical as well.

MR. WERNER: And I'll just say on top of that, recently we have CRADOs with the big companies like Microsoft and Amazon and Google and so on, for a whole host of reasons. You know, whether it's cloud computing, whether it's actually the things that I talked about, machine learning and such, whether it's data storage or data hosting that might make the data more available.

I think our partnerships with industry

are, if anything, growing in terms of the things that we need to do. Next month I hope to be, you know, meeting with folks up in Seattle, you know, with the Microsoft folks on several projects. They're interested in anything from omics to ecosystems to all kinds of things. It's really exciting to see that partnership.

The other one that I think is really important, that just keeps growing and growing is the partnership with the fishing industry, in terms of understanding what's out there, in terms of helping us sample what's out there, you know, developing --

Whether it's, whether it's like with fishing industry or with, you know, there's nice examples of citizen science that have come up as well, that have affected the way that we do our science and the way that we provide our assessments.

So these are all areas where it's changing the way that we do business. These are all game changers in terms of how we're proceeding, and we move forward, as we realize that we need to collect more data in this evolving situation, evolving condition,

we honestly need all the help we can get. But it also is how do we, how do we deal with all of this.

So this is, this is a beginning of a really intense but good conversation in terms of how the agency is working really broadly with all kinds of folks.

MEMBER VEERHUSEN: That's really helpful on the data center pieces, and I'd be curious to know where those are located, whether there's value add in, you know, non-coastal communities where those data centers are located.

I know that can be true in certain parts of the country, you know, where there may be migration that can be predicted that, you know, recreational charter fishermen, and the impact on that infrastructure value in those coastal places, and value on culture to the people who rely on those, harvest for subsistence and then value to the supply chain.

Whether it's a restaurant or a retailer, whomever is having different access to different species now, being able to predict that in the future

and where they're sourcing from. To me, that could be hugely beneficial to package up, so that it is understood by people who may not know what they're already benefitting from the agency from. So thank you for that.

CHAIR DAVIS: That's great, great discussion. Next we'll have Pat, then Janet, Meredith, Richard, Jocelyn and Stefanie.

MEMBER SULLIVAN: Thank you, Madam Chair. I want to thank you guys for this really great high level examination, and it's very exciting to actually see this little transdisciplinary thing. I recognize, I want to comment on a couple of sort of structural things.

One is well, I want to make one comment, is 20 years ago I used to provide the halibut population assessment to Anne, to put into the Pollock assessment to determine mortality, natural mortality happening there. So these things are evolving, but not quickly unfortunately. It's challenging.

In terms of the transdisciplinary stuff, in the North Pacific it's challenging. We're getting

a lot of information from ACLIM and a lot of those other things. But the stock assessment scientists are so busy, you know, one scientist doing five different species of stocks, right, that there's really no chance to sort of let the data soak in.

And so we've been trying to deal with that there and it's a difficult thing, and then in New England, it's a little bit different thing. Maybe it's a lack of communication between the ecosystem group and the popped-eye group that needs to be resolved somehow. These kinds of things are there that are structural, right, in terms of time and of course money, of course, is the thing too.

I mentioned to Sam earlier the National Standard 2, which I think about a lot, and of course there's legal and management things there that will need to be worked out relative to all of these other things that we're talking about. There's a lot of discussion of dynamic MSY, and I think mathematically we can talk about doing that.

But like it creates holes that -- gaps that we're not really -- black holes that we can kind

of fall into and not get out of that we have to be aware of, aware of there. So I wanted to look at that. In terms of the transdisciplinary stuff, I am thinking of Kevin Friedland's work. He's using these classification regression trees to see where the zooplankton are likely to go.

And I love the guy. I'm not sure he understands the statistics fully, but he understands the biology. So he's running the models and the biology is coming in, and he knows, right, the validation part is actually happening real time. That's true to the transdisciplinary element. So I want to give him a shout out in terms of that.

It was mentioned Atlantis and management strategy evaluation, and how long does it take to learn Atlantis? It takes a long time, right, and management strategy evaluations too are difficult to do that.

So looking to simpler systems might be helpful in addition to doing all of that, and I have been fortunate at Cornell to be able to work not only in marine systems, but lake systems as well.

And they've been doing the ecosystem management approach for a really long time, and making a lot of advances, of course. They're focusing on the forage fish. That's what they do. One of the things that's happening now under the SUSI student, Kimberly Fitzpatrick, was doing a sort of intermediate model. It wasn't including all the species, it wasn't just one species. It was like three or four species, and that sort of worked. So some things like that where you're using something simpler would be useful.

AI, I appreciated Cisco, what you were talking about that. AI is very complex. I mean basically it's all the parameters all interacting all at once, and the thing is you don't know what's going on. I was disappointed in running into the AI folks at Cornell, who didn't seem to know anything about statistics.

I think the impression was you didn't need statistics to do AI, but you still need to understand what bias is about. So if you're trying to predict heart attacks and all you have is information from old white men, you know, it's going to give you a

different impression when you're trying to predict for other folks about what's going on. So please keep that in mind as you're going through this.

And then finally, I was curious about, you know, the multi, the multi-fiscal models. Right now, we're just using the extremes really to sort of bound it. But presumably, we have some understanding of which models might be better than other models and maybe weight them, and I was curious if you had done any of that.

Anyway, those are my comments. I could continue talking for hours, as some people have reminded me here. So but --

(Laughter.)

MEMBER SULLIVAN: But I just want to say thank you very much for the presentation. I really liked where this is going, but there's a lot of places to watch where our footing is going. So thanks for that.

DR. MUHLING: I started writing that down way too late, but I'll have go. The first point you brought up about stock assessment scientists being too

busy to fuss around is a problem that's been, I mean I've been hanging around with the NOAA folks for like 15 or 16 years, and I think it's been a problem that entire time.

The stock assessment folks are incredibly busy, and if you suggest them doing more work, they look at you like you're insane. Some ways we are making progress on that front I would say two main ways. The management strategy evaluation is really great, because it lets us ask what if. You're not asking anyone to change anything. You're not asking the fishermen to put up with something new or experimental.

You can say what if this, what if that, and then take those results back. So I think that's one really good way to do it. The second is that I think we've, except in a few cases, we're doing less of the let's try and shoehorn more covariants into a stock assessment.

We're doing things like what Elliott mentioned with the Ecosystem Initiative 4. We're doing things like the ESPs, for instance --

MR. WERNER: Economic and socioeconomic --

DR. MUHLING: Ecological and
Socioeconomic Profiles.

DR. HAZEN: Yes.

DR. MUHLING: Thank you. I had that
written down somewhere, and it's a way to incorporate
consideration of ecosystem effects into the assessment
without trying to make the model more complex or
explode. So I think we're getting more creative with
ways to do that.

You mentioned model simplicity. The list
in Future Seas, we have models from the very simple,
which I do because I'm old and less intelligent, to
really complex like Atlantis. I think we have learned
a lot from sort of looking across that spectrum of
complexity.

And your last point about AI, we have used
some of that. We use machine learning models a lot.
We use the tree-based models. We use the neural
networks. They're very interesting because they have
a massive ability to be able to explain variants, but
they're usually inherently quite brittle, in that if

you ask them to extrapolate, they will be like oh no, no, I couldn't possibly.

So I think you need, especially when getting into novel conditions, you need to think carefully about what each model is actually telling you.

MR. WERNER: What she said times two. That was great. I mean the AI one is -- I think this is where from simple to complex, the same with, you know, your linear model through your neural network, is we want the whole range so that we can do these multi-model ensembles.

So not just the IPCC temperature ensembles, but the ecological ensembles and hopefully getting into some of the socioeconomic ensembles as well.

CHAIR DAVIS: Yeah, thanks Pat, and okay. Janet, please.

MS. COIT: Thank you all three of you, and thank you for everyone who has made a comment and asked a question, because you are helping raise some of the issues that were on my mind and articulate some

new ones.

Wow, yeah. This is a lot to take in, and I think my question -- I have a whole bunch. I'm trying to winnow and ask maybe just one. But it was kind of along the lines of Matt's. I was thinking about what Cisco said about sub seasonal to seasonal being the hardest to manage for, and then what Elliott said about the IEA monthly data, and then the constraints under the law of our current management system.

The slide that Cisco put up from the SSC groups, who were talking about the urgency of our management being more responsive. I know this is a lot of our panel tomorrow, but I wanted you all to comment. Also was thinking along the lines of what Pat said too about, you know, we talk about ecosystem-based management, but a lot of what Barb you showed was single species, which a lot of our stock assessments are.

But then you're looking at chlorophyll and primary production and anyway, so like my head is spinning. But the question was yeah, when we think

about the constraints, emergency actions, closures of the system we work with, Elliott you gave some examples with the Pacific.

You know, how do we, as we develop better models and better science and take the real life input from the fishing community who's seeing what's actually happening out there, you know, how do we make that relevant to management decisions in the seasonal context, and not have there be a lag of three or four years?

DR. HAZEN: Yeah. So one good news, and I'm not an oceanographer but I did stay at a Holiday Inn last night, I should care, is that the ocean does a better job with memory than the atmosphere. So I think that the seasonal to decadal, there is some work being done that because we have these large ENSO events, they do carry some sub seasonal skill above and beyond some of the more like global discouraging information that was presented by Cisco.

So that's just one glimmer of hope. Sorry about that. That may have come out wrong. But then, you know, the point you brought out, you know, with

the data is a -- it's amazing how data rich we often are but it is -- you know, it is difficult for our data to be used in rapid ways.

Like you said, some of that's management structure, some of that's the way the data are collected and the way they're housed. And so I think things -- I mean even if we can't get to the models we want, if we can get to getting the data in the right place as quick as possible, I think that could help some of these more rapid decision-making.

There was another, just another quick example. There's a great example with, I think with Shortbelly Rockfish and Pacific hake, where there was a large catch of Shortbelly Rockfish because of this warm blob again, and the fishery was at risk of being shut down because they didn't have quota for it.

And the Pacific Fisheries Management Council had an emergency meeting to adjust for that. And again, is that the way we always should be doing it? You know, hopefully not. Hopefully we can be a little more adaptive without the emergency meeting. But there are, like you said, there's a lot of

movement, a lot of structure in place there too. I don't know if that helps. You want to add?

DR. MUHLING: Yeah. I don't have much to add, and this is easy for me to say because I'm not a fisheries manager. But I've become more interested and more excited about the ways we look at scenarios, sort of what-ifs. I think if people are waiting for us to have a prediction of what the air temperature is going to be nine months from now, they're going to be waiting for a long time.

But perhaps I mean all of us in all of the spaces, if we just get better at being more imaginative and saying what if, what if this happened, how would we react and trying to build more foresighting and scenario planning into what we do and how we think, it could be a way to make some progress. But I acknowledge the enormity of the problem.

MS. COIT: Yeah. Just as we -- I think, yeah I mean this is a foundation for the conversations tomorrow. I'm sorry you can't stay Elliott and I don't know about you, Barb. But it's important, and I think if we can find some regional examples where we

can put this to use and demonstrate how to do it, it would help the whole enterprise, make it more tangible.

CHAIR DAVIS: Great discussion. Next will be Meredith, then Richard, Jocelyn, Stefanie, Roger.

MEMBER MOORE: Hi. I'm like live mentally editing my question, since part of it overlapped with Janet's. So we're going to do -- we're going to do a piece of my question, and you'll have to forgive me a little bit if I'm a bit messy asking it.

So thank you so much for the presentations. They were so good, really appreciate it. I love seeing all of the science. So I'm also coming from the perspective in this question of that same sense of urgency that you see reflected in the SSC's presentation, and their outcomes and then also just what we are seeing on the water and how things are changing.

So and my -- like my driving thing you'll always hear from me each time I get on the microphone is trying to figure out like how we better spark the creativity and inspiration for new management

approaches from the fishery management councils.

I'm interested in what the, kind of what the science side of that need for creativity is, and now I'm going to say a bunch about that, but I'll promise I'll be quick you guys.

But and then I'll give it back to you. But I wanted you to know where my question's sort of going before I got into it. So I think it's really good and we're starting to see fishery management decisions like the ones you talked about, that are responsive to current conditions. That's going to be really important.

But what I'm keenly interested in is how to find good pathways through that kind of management to that tricky middle time scale area, and then thinking about the longer-term productivity as a whole.

So like there may be situations where quickly reacting to on the water conditions is actually counterproductive for the long term sustainability or resilience of the stock, and I don't know how we know when we're there, and I don't know

how managers know when we're there.

If we just put together a bunch of if thens for current conditions without knowing the direction of what we want to head to and how to navigate that kind of midterm thing, I'm not sure how managers can make those decisions. And so right now councils are really used to just saying like put it in a stock assessment and then it will come out later.

But there's that messy middle piece we haven't figured out, and I think they're also not ready for their current management approaches to be less effective and less predictable and less useful in their outcomes. And so what I'm wondering, now I promise I'm getting to the real question, because like I'm a huge nerd and loved all that science.

But that's a lot for councilmembers and y'all know that, because I know you're used to trying to communicate those things. So what I'm interested in is like what do the conversations look like between the science and management side on how, like how do they request, how do they know what they should be looking for? How do they know what they should be

managing to, and not just sort of ping-ponging between reactive things?

Like what does the science side of the agency, like what is sort of your, I don't want to say necessarily responsibility, but what is -- what can you bring to sort of narrowing in and helping managers figure out like how they think about sustainability and resilience, and not messy timeframe and how they should, you know, navigate sort of all the near-term challenges that are coming at the same time? Okay, good luck.

MR. WERNER: Can I phone a friend and ask Anne?

MEMBER MOORE: This can be a group project.

MR. WERNER: Can I ask Anne Hollowed to make --

MEMBER MOORE: Yeah sure.

MR. WERNER: I mean the reason I'm talking about Anne is because this is, I think this conversation is one that was initiated by Anne and others with the North Pacific Council, right, and I

think that this -- how do we think ahead while we are still doing what we are doing is something that is -- needs to be on the table, right?

And so you're right. This is a lot to absorb even, you know, for those of us who are doing it, and so I -- it should be a deliberate process in terms of how we do this. It's not a turning on a dime necessarily.

I've referred to the term "shadow assessments," you know, can we do parallel assessments? You know do business as usual, as you will, in terms of how we understand the communication with management and the management decisions, but at the same time do a parallel and here we're talking about the stock assessments being overburdened already.

But do a parallel assessment that includes some of the things and some of the thinking that we're talking about here in terms of likelihood, uncertainties and so on, and other factors that come in and say well, this is what we would have said had we, you know, had we included that, and have them side

by side and have it be a learning process.

Until we get it right or better, if you will, not right but better, not just in terms of the science but in terms of how that science is communicated.

So I think this is a -- to me this is one of the key areas that we have to do is all of the science that you saw in these last three presentations, we kind of know what we're doing. But the translation to actionable management, that's really hard.

And so I totally, I totally agree with you. So I don't know if my friend is still here or if she left or if she wanted to add anything to it. You want to come up here and just -- yeah, yeah.

(Off mic comment.)

MR. WERNER: I did.

MS. HOLLOWED: Okay. Yeah, a great question, and Cisco's right, that we have been struggling with this. Pat knows. He sits on our SSC, that this is really the direction that we're going with the North Pacific, and the approach we took in

terms of the communication side of it was sort of a three-pronged approach.

First, we did these simulated storylines that you've seen examples of. That really set the stage so people could begin to understand what we were doing with these scenarios, you know. You could say the word scenario, but that's -- it doesn't really sink in any time you see that we're going all the way from climate and including fishing alternatives in it.

The second piece was that parallel to the effort of when we were -- our project's called ACLIM, but parallel to that project, we also adapted an FEP.

That Fisheries Ecosystem Plan realized there's a lot to take on in a Fisheries Ecosystem Plan.

What are we going to really focus on in the near term, and one of the things they decided to focus on was climate change. And so they created a climate change task force, and they endeavored to really map out how these products that we were all working on, whether they were -- you've heard this term, ecosystem socioeconomic profiles.

That is gathering together everything we

know about a particular species and trying to make sure we all agree or disagree which variables are good candidates for a stock assessment for scientists to even consider. Whether it's an ESP or the ACLIM scenarios or the ESRs themselves, all three of those products have different entry points into the management decisions.

So they map that all out for us. So now the Council understands where these products fit when the time comes for them to start thinking about it. The other piece of the FEP that was just critical on all of this was that we early on said look, if we're going to change our management and, you know, fundamentally change it, have a whole new alternative -- we're going to change the two million ton cap, or we're going to change the slope of the harvest control rule, that is going to go through a regular FMP.

What we're doing in the FEP is to explore what possibilities the Council might, you know, what is a candidate group of reasonable alternatives that we should explore. But the public still gets a chance to intersect, and if someone doesn't like it, they get

their standard FMP amendment process to talk about it.

And then the last is that we have established a suite of rotating workshops, and we just had one in June of last year. We bring those together and it's been so fascinating, because the first one we ran, the most pressing issue was halibut bycatch caps that the Council was dealing with it, and that was their -- the major issue.

So the scenarios we were drawing up were, you know, more halibut catch, less halibut catch and Phase 1 -- we had a Phase ACLIM project just like this one. The second time we came around there had been a marine heat wave, and the suite of things people were interested in was really different.

So it just drove home how important that communication piece is, that you've got to come back regularly and often. Otherwise, the scenarios that you're running, and they take time, heaven knows, Barbara can attest, you know. You don't want to try everything. So you want to make sure that your scenarios are bracketing the right world.

And so I'm not saying we're perfect or

anything like that, but that is -- Pat, if you have any more to add on how we approached it. But that's, that's sort of the three-pronged modeling, you know, having a clear pathway through the FEP and then having regular workshops where people can weigh in on what scenarios they might want to see, seem to be at least the way we're doing it now. Anyhow, thanks.

CHAIR DAVIS: Thank you, Anne. That was great input. Yeah, great. Richard.

MEMBER YAMADA: Yeah. So this is more for Cisco, but I'm at the International Pacific Halibut Commission, and we've, you know, we focus on just one species, have a long history of science and management of that fishery. So we have an MSE team that works, and we also have a MSAB, which is a Management Strategy Advisory Board, which is stakeholders.

So the MSE works in the directions of, you know, they're commissioners, and we basically have them help us in making, you know, this is where the science meets the road, where we have to determine catch limits along the whole coast. So we want to know how do we apply all of this modeling.

So what I heard today was very fantastic.

I mean we're just beginning to study, you know, the impacts of how we're going to incorporate climate change into our models and our assessments, and so a lot of information. But one thing was a little bit concerning to me was, you know, we give the MSE the objectives, because you can't just have MSE just going in blind.

So our objectives in the past have been to bring stability and predictability to the fishery. So based upon those fisheries' objectives, they run these models and we have models upon models and ensembles and everything, and they give us a risk table.

So based upon the risks of certain decisions we make, we can look at what kind of risk stakeholders are willing to take or the commissioners are willing to take to -- for certain fisheries outcomes.

So now we've kind of -- you've brought in this term of we're not going to, we're not going to -- our objective wouldn't be necessarily stability, which is our objective now and predictability in our

fisheries, but now we're going to manage for variability.

So that is a, you know, what I hear here is going to get down to our level in two or three years. We're at the -- you know, we can barely understand it here, but to get it down to really the fisheries managers, it takes some time to percolate and understand.

So if this concept is something that we're going to be going forward to -- you know, we need to change our management objectives to go no longer to -- maybe we don't have because of climate change too many variables, so we cannot really have a fishery that is predictable or stable. Now we're going to be managing for some kind of variability.

So do you have any ideas in your mind what that might mean for a fishery, managing to variability?

MR. WERNER: Yeah, I'll take a stab at it.

Thanks, Richard. It is a real good question in terms of what does that mean, you know? It's a nice graph, but what do you do? How do you do it? I think it's

part of the thing that we were talking about, is the scenario planning I think is important in terms of --

And I know that there was a scenario planning exercise along the east coast over the last year, and I think there's a published report on that.

I think there's scenario planning efforts going along the west coast.

It's also what Anne was talking about, about how that conversation needs to happen in terms of understanding what are those possible outcomes that can come about in this point of transition, in terms of all of this variability that's happening.

So I think it's also important to realize that we won't necessarily have all the answers, but that's why the what ifs are important in addressing that management for variability, that we're no longer aiming for one answer, but we're trying to see what possible outcomes can come out.

And again like Anne said, you know, one year you were doing something and then all of the sudden you get, you get a signal like the warm blob or something that all of a sudden changes your thinking.

It's part of that variability that in some sense is almost like it's a live thing. You have to constantly adapt to it as you learn more.

So I think it's a new approach that we have to look at, and I'm not sure if you guys want to add anything on how do you manage for variability. It's really looking at a pallet of possible outcomes and trying to make decisions based on that.

And then it's really hard, right, because that variability will have so many different impacts on so many different components of the socioeconomic spectrum, if you will.

So how do you optimize that variability decision? I don't know. But that's part of the conversation.

MEMBER YAMADA: So would a better word term be like you mentioned adaptability? So if you were trying to manage for adaptability in a future scenario, you know, some fisheries and some communities have more tolerance to adapt, and like a fishery like halibut is long-lived, right? So you know, versus a very short-lived species.

So maybe it's better to adapt to a more varied, kind of more flexible management plan because it's got a long history, versus you know, doing kneejerk reactions every time you get some data from the fishery. You increase, you know, catch limits one year and you decrease them the next year.

Maybe you project like having stable catch limits for three or four years, because no matter what happens in three or four years, if the future is like 40 years, you can make an adjustment and be able to adapt to that and be more adaptable to these variability in the future. Would that be kind of a thought process?

MR. WERNER: That's a really good recommendation. I think, you know, variability can have a connotation of too much uncertainty, and I think we're beyond that and adaptability might actually be a better word. So thank you.

MEMBER YAMADA: Thank you.

MR. WERNER: Yeah.

CHAIR DAVIS: Great. So we have Jocelyn, Stefanie, Roger, Tom and Natasha.

MEMBER RUNNEBAUM: Great, thank you.

Thanks for that presentation and I have had a long time to sit here and think about a question, and I'm still finding myself processing and actually feeling a little bit emotional. As you were presenting that really incredible research, I got a picture of this gorgeous Atlantic halibut that my sister-in-law and her partner just caught.

And so it sort of makes all of this very real, and makes me almost want to cry because they're young fishermen just starting out, and they don't -- they don't engage in these processes. I really appreciate Cisco, bringing up the need for listening to industry and hearing their perspective, all fishermen that are on the water, hearing their perspective and including them in the modeling process and including that information.

So I guess I would like to hear a little bit more about in the CEFI, in Future Seas, what are the actual steps you're taking to reach the fishing industry, to get that information incorporated? So that we're actually really making this relatable as

the way Janet eloquently demonstrated, the frustration of the scientists that she heard yesterday.

I think that Anne brought up the communication piece, and that helps make it relatable.

From my own experience, the relationship that an agency or an individual scientist has with the fishing industry makes it relatable. So I would just like to dig a little bit more into that, and I promise I won't cry. But I'm feeling pretty close to it, and I appreciate you being here.

MR. WERNER: I'll take a stab at it, and I'll start by relating something that came up again at the CCC last week, the Council Coordinating Committee, where there was a discussion on different regions being either data poor or data rich, right, and you know some saying well, you have a lot of data that you can build on.

Bill Tweit, you know, from the North Pacific Council said well, you know, with all of these changing conditions, you know, a lot of the data that we had isn't valid anymore, so we're all data poor, you know, in some ways, right? We're all starting

from a different point in time.

And my answer to the question then in terms of how to partner better and more, you know, more deeply with industry is the folks that are out there on the water actually seeing what they're seeing, collecting the data that we can't collect and helping us out in terms of starting from this new data-poor condition that we all find ourselves in given everything that's happening, and helping ensure that what we're seeing is included, that we're ground truth.

There's so many things that are changing that, as I said earlier, are hard for all of us to sample, that I think if we develop say, you know, a systematic way of communicating with industry in terms of what's out there, or can we even ask for some data collection to happen.

I'll relate a quick story with a meeting that we had in Norway maybe six weeks ago, where there was a combination between, you know, them, the Norwegians are basically our counterparts at the Institute of Marine Research, using these uncrewed

systems, you know, these gliders and things like that, to acoustically sample the ocean.

But then they have something worked out with industry where they would give them a phone call and say look, I need such and such data to be collected, and there's a worked out protocol. How many, you know, what's the weight, how do you freeze it, etcetera, etcetera. It's all worked out, and that partnership of the eyes on the ocean which the industry has always had, right, and then -- and helping us combine that, what they see with what, you know, we're sampling incompletely and together making it a more complete whole is I think a way that we need to progress.

Because I think it's not going to be possible for us to do things the way we used to, and I think this is a very, very important and exciting actually part of I think how we should evolve. It's a short term, but we need to make sure that we get the data right now, and as much of that as we can, and I think industry would be a hugely important partner and necessary partner. It's just one way of answering.

DR. HAZEN: I'll just add a quick one. Like, you know, when I was trained in science, it was you do the science and then you present it to the stakeholders. And that's not the way we've been doing these projects, is the stakeholders are engaged from the beginning of the product, to make sure are what we're building what you guys need.

One example, we were planning on building a Smartphone app for the drift gillnet fishery, and to tell them where these things were, and they all came to me and they're like "we have flip phones." So that was a good one, where it was like engaging with them before we build that app was the right way to do it, and has been really integral to what we do.

DR. MUHLING: Yeah, I guess kind of similarly, I have heard of a case where some scientists put an amazing model together, wrote the paper, took it to the fishermen, and the fishermen said "well duh we know that". So yeah, ask the stakeholders first. We have been having some stakeholder workshops as part of Future Seas.

It was difficult with COVID, but we got

some online ones done. It's interesting because the folks who are really switched on are often engaged with the Council process.

We don't end up reaching all of the folks that we would like to. The ones who are really more with the process are the ones that we keep reaching out to. It's better than nothing.

I think along the lines of what Cisco said, building trust is really important, because if you go to a fisherman and are like hey, tell me a little bit about your fishery, they will be like well why should I tell you? What if you use that information, turn around and restrict my fishing, which is a fair question.

I don't think we ever lose sight of the fact that what's a model running on my computer is indirectly related to someone's actual livelihood, to the health of their communities. I think it's really important to keep that in mind.

We do have some good examples of partnerships within industry. One that comes to mind is at the Southwest Center, we work with the

recreational and commercial fishers to get the carcasses of the tunas that they catch and other HMS, and we look inside their stomachs to see what they're eating.

And then we present those data at their association annual meetings and that sort of stuff, and we use those data for a lot of things, to parameterize ecosystem models, to even sometimes sort of ad hoc backup what we see in stock assessments and recruitment indices.

But I think starting from a place of trust, you're going to find it much easier. Otherwise, you'll plan this fantastic fun day workshop and you'll just harangued for the entire day, because they're so suspicious of your intentions, which is understandable.

CHAIR DAVIS: Thank you for this discussion. We have about 20 minutes left, and we have five cards up. So I just want to suggest that if we want to get to everybody, that maybe you keep your comments and questions a little more precise.

The discussion is really great. I wish we

actually had another hour, because it's such a valuable discussion. I just wanted to give you a heads up on the timing. So we have Stefanie next, then Roger, Tom, Natasha and Sara.

MEMBER MORELAND: Thank you for the presentations, and I appreciate the recognition of Dr. Hollowed, who has long been talking about this, and pushing work on ACLIM.

We knew stock assessment authors and the process was already overtasked, and we also were generally concerned about modeling, displacing the value and the investment and data collection, and the experience has been that there's a recognition that these are parallel paths and appreciate that.

And so it's been incredibly helpful to see the structure that this process brings, to actually make what is an overwhelming situation something that is more tangible, and something that we can build on and gather information into. So I think there's been fantastic value coming from this.

Just my personal observation is we need to build large vessels. It takes six years and more than

\$200 million to build one in our region. We're competing in areas that others are producing vessels at less than \$100 million and can do it in two years.

So we need 30-year time lines. We need very long horizons to be able to decide what is practical for reinvesting, in order to support fishery participants in remote and coastal areas, and this is the best information we have.

And so there's great value. So I want to assure that and I think we need to capture and recognize this is the best we have to be able to make these long-term decisions, and it's really helpful and need to keep feeding them.

And then I also just am concerned that the agency is underplaying the value and recognition of how this promotes inclusion and the greater relevance of work product in NOAA science to more stakeholders.

It is interdisciplinary, and it's much more interesting to a broader set of stakeholders and communities than talking about scientific and

management uncertainty is explicitly accounted for in setting a TAC.

That is of interest to a fisherman at the end of the day, that needs to know how much they're going to be allowed to fish. These projects are just really relevant to a broader community and it's, I think, what has spawned more interest in Ecosystem Committee, the Climate Task Force that was referenced in the local knowledge and traditional knowledge work in the region that I'm familiar with. Thanks.

MR. WERNER: Perhaps I think Stefanie, just a quick question on the matter of the ships. Were you talking about building these ships that are for industry ships or for -- yeah. So the investment is and then the certainty that you need going forward, whether it was the right-sized ship, etcetera, etcetera, is what you were highlighting; is that correct?

MEMBER MORELAND: Correct, bracketing risk and this provides a framework to do that.

MR. WERNER: Yeah, great. Thanks.

(Off mic comment.)

MR. WERNER: I'm sorry?

PARTICIPANT: You're building the ships.

MR. WERNER: We're building ships too, but our -- the reason, the way we're going and also comparing whether the country is actually going towards smaller ships, right.

Things that are more nimble can be in -- can be in -- and perhaps having more of them, rather than the model that we have with the FSVs that worked for the question of the time.

But the questions have evolved in terms of the tool that we need to bring to the table in terms of the ships that we need. Yep, thanks.

CHAIR DAVIS: Roger.

MEMBER BERKOWITZ: Thank you. I'm not sure I have a question, more of a stream of consciousness. If I go long, I'm going to blame Brett because he mentioned something, a frustration I had. So please forgive me, but so one of the things that you said, and I think it's pretty accurate. Why don't different government agencies work well together? Why don't they cooperate?

And generally speaking, and Pat you could probably attest to this, universities work in silos, hospitals work in silos, businesses work in silos. They're not used to sharing, and you know, it takes an emergency sometimes, 9/11. You know, you had the FBI, you had all these different security agencies that weren't communicating with one another.

Then all of a sudden they started pooling information and they become terribly effective. I think this is something that we have going on in the fishing industry right now, and I'm not a conspiracy theorist by nature, but about ten years ago there was some scientists out of MIT that did some sonar research in Massachusetts, and they were able to show that there were fish where no one said that there were any fish. None of the assessments or surveys were able to show that.

And so in working in concert with our Congressional leader and state legislators, we put some money aside to do sonar research as an experiment, and we were certainly going to feed all this into NOAA, and the partner in that was MIT, and

MIT agreed to participate and help us gather the information for this.

And but all of a sudden, we were hitting some roadblocks, it wasn't happening. And so I called Sue Hartfield, who was running MIT, and I said Sue, I thought we were going to get cooperation. Oh no, no, no. You are, and so she sent me to one of their deans who was in charge of sonar.

And you know, he told me some nice things and yes, they were going to cooperate, and lo and behold nothing happened. Well this is crazy, and then about six months later, someone in the legislature came to me and said you know why it didn't happen? I said no. Department of Defense shut it down. They didn't want anyone participating, and they didn't want to share any information.

So you're doing some great stuff on modeling, you know, stock assessments and everything, but it's not getting to the fishermen. They can't do anything with it. One day, you know, they can catch as much haddock as they want, and the next day we're going to shut down the fishery.

So to, you know, what you're saying Stefanie and Matt and others have brought up, you know, we can't -- you know, the fishery can't operate in a vacuum and that's essentially what's happening. So we need real time data, you know, in order to, you know, affect what's going on.

And so the frustration is I think, you know, the country has the information. How can it get shared? How can it get translated? How can it get communicated so that the industry survives, because in business you can't -- you can't forecast ahead if you don't know what tomorrow holds. That's crazy, and so it's going to really shut down the industry.

So I don't know what the answer is. It's really frustration, I think, that many of us have here.

MR. WERNER: Yeah, a lot to unpack there.

The need for data obviously is critical, and like I said earlier about, you know, all of us in some ways starting from a data-poor condition given how much things are changing. So I think that, and that goes back to the question also and the conversation with

Jocelyn, is that that data that can be provided in real time from the folks who are on the water, from the industry, is something that we need to incorporate and ingest right away.

It was interesting, and I don't know if Jim, you're still here. There was an article in the Washington Post a couple of days ago where they were talking about following ships, you know, where they were fishing, right, and actually they found out where the fish were by when the boats turned off the satellite trackers, you know, because they didn't want to be known.

So you know, in this case it was a case of, you know, doing an analysis based on where the data wasn't, you know, but that gave them something. So I think all of your point -- your point is spot on in terms of, you know, being data poor, needing more data given everything that's happening, and I think --

I know I'm repeating myself, but the importance of this, of getting this information real time, like you said, is something that is part of what we hope to do, you know, in the near future with data

modernization, development of advanced technologies and such, so I couldn't agree with you more.

The matter of working with DoD and such is also one that we are working in terms of how do we share the wealth of information they have with ours, and still make sure that, you know, matters of national security and things like that are followed.

But that's -- it's a conversation that is also ongoing and we make strides a little bit at a time on that. But it should be part of the data set somehow. So thanks.

MS. COIT: Roger, I appreciate your comment, but saying the industry's operating in a vacuum seems so hyperbolic in that I've never seen a management regime where there's more transparency. The council process, you know. I think the data that we have we're sharing, and then we're talking about how we can do that better. But I just wanted to react to that.

CHAIR DAVIS: Tom, Natasha, Sara and Donna.

MEMBER FOTE: Can you hear me better now?

I changed my microphone. It's Tom. Can you hear me now?

PARTICIPANT: Turn it down Tom.

MEMBER FOTE: Oh okay. I'll come back and go change the cord.

CHAIR DAVIS: Okay. We'll come back to you Tom. Natasha.

MEMBER HAYDEN: Thank you Madam Chair. So I was -- I had full intentions on just listening and trying to learn as much as I possibly could during the discussion, and it had occurred to me that part of the reason why is because I genuinely feel like a fish out of water on this topic, because my background isn't marine science-based.

And so my question is, and I don't really -- I don't really expect you to have an answer to this so I apologize in advance. But is there any indigenous science incorporated into this process and the traditional ecological knowledge in this process, and that's my first question.

DR. MUHLING: Unfortunately, a brief response. Far, far too little. We have in the work

that we're starting now to try and extend some of what I talked about in my presentation, we're starting to try and reach out to those folks. But it's really just been way, way too little I would say.

So it's something we really hope to improve on. It's the best thing I could say.

MEMBER HAYDEN: Thank you. Again, I apologize. I don't mean to make you uncomfortable, because I mean I figured about as much because otherwise -- I mean I think that it probably would have been highlighted, you know, front and center if it had been.

But I did see in the presentation that there is a time history of going back 1,000 years for temperature data. So that information comes from somewhere, you know, probably some archaeological, some physical, archaeological work that's done. There's oral histories that communities have that go back thousands of years.

They're living communities that indigenous people and I'm from Alaska, so it's easier for me to refer to the Alaska Native people, that is valid data

and is valid science that is available and would probably, I'm going to use the capital P "probably," help improve this process.

And that, you know, with the fisheries management systems that we have now, going back decades, you know, and we're in these period of, you know, hugely variable conditions and unpredictable, you know, unpredictable conditions, to expand the time series going back and help, use that to help inform how we do things going forward, you know, on the 500 year scale.

I've been totally preoccupied with my day job, which is not at all fisheries-related, so I'm feeling a little, you know, I'm trying to get caught up to speed as fast as possible.

But when I think of fisheries, I think of, you know, 7th generation, 8th generation, 500 years, 1,000 years that we've got, we've got evidence and oral stories going back thousands of years in our communities. And so I'm looking forward to seeing how that evolves. Thanks.

MR. WERNER: And in one of the -- one idea

that comes to mind is in order to validate the models going forward is understanding what happened in the past, right?

So there's this idea of a hindcast or something to try to see, like you said, the variability that happened in the past for other reasons is a hugely important part to feel comfortable about what we're going to say about the future, is seeing if we could actually reproduce the past.

So that would be a hugely valuable thing of what do we do with that accumulated history that exists out there. Understood.

MEMBER HAYDEN: Just one quick follow-up, is just also to acknowledge that dependence, you know, total dependence and management of fisheries, marine resources prior to the management systems that we have now, and to -- you know, my hope is to -- that my involvement with help to ensure that there is continued marine fisheries resources available to those people and our people in the future. Thanks.

CHAIR DAVIS: Sara, then Donna, then Tom.
Maybe you might want to consider typing your question

out, since it's difficult for us to hear.

MEMBER FOTE: Well, would you check and see if I've got the right stuff or am I still too loud.

CHAIR DAVIS: Yeah. It's difficult for us to understand. Like we can hear you, but we can't really understand the words. So if you have a chance, type it out. We'd be happy to read it. I'm going to move on to Sara. Thanks Tom.

MEMBER McDONALD: Thank you, Madam Chair.

Thank you for the great presentations and Anne's -- what Anne's discussion really kind of prompted me to ask this question, because it really seems like there's some special sauce in the North Pacific Council, that it's a much more -- it's an open, that this was so successful.

It seems like it's a great model, but we know that each council is so different, and the personalities and the willingness of councils are all so different. So I'm just wondering if or how MAFAC can help socialize this to gain buy-in among the other councils. Is that something that we can help with?

MR. WERNER: So this exact conversation happened last week almost at CCC, about how to -- the comparison across councils and the different needs and such. And so that's actually what triggered that conversation about different regions being, having different richness in data, if you will.

And it almost, you know, emerged in the conversation of how important it is for all the councils now to be in touch, so that -- so that those regions that are data poor might actually be the ones that tell the data rich people how to -- or the data rich regions how to work with.

But I think it's, you know, any way the conversation can happen about, you know, we're all perhaps on a more even playing field now, that we're all trying to solve problems that we didn't have before. I think that would be a variable conversation indeed.

CHAIR DAVIS: Donna.

MEMBER KALEZ: Hi. Mine's really quick. Thank you so very much for all of your reports. I found them really interesting, and I'm still like

looking at some of the slides.

I don't really have questions, but I have comments, and so tonight when everyone comes to the Sportsfishing Association of California, you will learn all about our cooperative management and cooperative projects that we're doing with the Southwest Science Center and NMFS.

They for the first time ever, I would say that I am a fisherman, first and foremost, and for probably a very, very long time, and I'm putting my father aside from this, but there's a huge lack of trust and nobody wants to give you information. And so I think now we are seeing a huge change in what is going on because the scientists are using the fishermen, and we are getting to be part of the process.

And so it's been really exciting for us, and I don't know if we'll get the right result, but at least we were there and we were at the table, and we were working with them and answering questions and doing the sampling ourselves on our boats with our customers. So that is like amazing and everyone is

really excited about that, and you'll learn all about that tonight.

One of my questions though is when you say that the councils need to be prepared to transition to more sophisticated toolboxes, and we're also talking about how we explain all the science to everyone, I get -- I wonder what you mean by that? So if you could just briefly tell me.

MR. WERNER: That was a recommendation from the councils.

(Simultaneous speaking.)

MEMBER KALEZ: They want a more sophisticated --

MR. WERNER: As a recommendation from the council SSCs to the councils. So that emerged from those scientific steering committees.

MEMBER KALEZ: Okay.

MR. WERNER: And so I think in part it's - - how you define sophisticated, I don't know. But I mean there was perhaps a realization of needing to consider more components and such. But it's something that is not perhaps in the report of that meeting. I

haven't had a look at it, but it's a good follow-up, and maybe I can do it before tonight and get back to you.

(Off mic comment.)

MEMBER KALEZ: Okay, I'll talk to you.

And then the -- and then the use of adaptive management wherever possible. That's like the new buzz word everywhere I go, adaptive management. And so it's exciting to hear that you as scientists are using adaptive management. It sounds like that's really good for all of us to hear, and then it's not so much in a vacuum. It's out there and being adapted.

And then finally, I just want to tell everyone that it's El Niño Year, and we have a biomassive crew out there. And today, if you had been in Dana Point, you would have seen two blue whales, because I'm so excited. So that was my good text that I got, so we were talking about whales. So they're here too. I'm just kind of biased to Dana Point.

But thank you so much Cisco, and thank both of you. It was great, so that's it.

CHAIR DAVIS: That's great, a great way to

wrap up the afternoon's discussion, and then thank you again Cisco, Elliott, Barb and for MAFAC's discussion and questions. We're going to take a 15 minute break.

We'll be back around 3:15. Thank you.

(Applause.)

(Whereupon at 3:03 p.m., the above-entitled matter went off the record and resumed at 3:21 p.m.)

CHAIR DAVIS: Okay. We're going to start back up again, and we have Russ Dunn up here. He's going to give us a NOAA Recreational Fisheries Update.

So welcome Russ. Great to have you here, and we'll open up for discussion as well after your presentation.

MR. DUNN: Can you hear me okay?

PARTICIPANT: No.

MR. DUNN: I did, it's green. Hello, yes.

Okay, I really got to get close. We're going to have a tight relationship here. All right.

So hello. I am Russ Dunn. I'm the National Policy Advisor for Recreational Fisheries here at NOAA, NOAA Fisheries, and I'm here with my

colleague Tim Sartwell, who's in the back, who I know all of you have met as well.

And we're going to give you a quick update on the status of our efforts to update the National Rec Fish policy. So parts of this will be familiar to some of you, parts of -- some of you saw this last week, and some of you in the Subcommittee have seen major parts of this in the last couple of weeks. Do I need to point at anywhere in particular? No.

Okay, so as you may recall, we are in the midst or closing in on the end of an effort to update the National Rec Fish policy. We had an extensive 150 day comment period, where we held discussions with the councils, the commissions, the state directors, MAFAC and the general public.

We received comment in person, virtually during webinars, through a dedicated email portal and through emails and through old-fashioned snail mail. And as you can see on the screen there, we had a pretty robust response to our request for comments.

So what did we hear? Well, basically the comments that came in really covered a range of topics

and issues, and you may recall this from sort of previous discussions here.

It really covered the gamut from updates that people wanted to see made to the policy, to what really seemed like people's general concerns about the marine environment and their specific fishery, as well as often there were very specific actions noted for specific fisheries.

For example, you know, we would like three fish instead of a two-fish bag limit, that sort of thing, which didn't quite rise to the national policy level. General takeaways here are up on screen. It really included for climate. It was really -- there was broad interest in better understanding of the climate change impacts, and preparing for climate-driven changes to fisheries to the extent that we can.

With EEJ or DEI, inclusivity and diversity in fisheries themselves was of interest to those who commented, as well as in the management process itself and the science process. There was a really strong emphasis from many parts of the country on better understanding, characterizing and frankly embracing, I

would say, the non-commercial fisheries, which often occur from shore. It may not be the private boat rec sector, but those non-commercial fisheries that are really helping people supplement their protein intakes.

Ecosystem management, habitat conservation, I really tried to sort of -- or I did roll essentially all the conservation and management issues into one bullet, because there were so many to cover. But essentially there were comments across the board on addressing discards to post-release mortality, depredation, habitat enhancements, improvements, etcetera. Those are all what we're trying to capture in that one bullet.

Regulatory access. In general, this came down to people expressing concerns over loss of access to the fishery or resources from regulatory action, or conversely interest in trying to gain or obtain additional access to recreational fishing resources and opportunities.

Offshore ocean uses was really a very similar set of comments to regulatory access.

Comments generally focused on concerns over potential loss of access to historic fishing grounds, fear of conflict between various sector, various sectors, and interest in having a voice at the table, and on a few occasions potential for new opportunities that may arise, for example out of the structure that remains in the water.

Science and data was pretty simple. More, better, faster and then topped off with more interest in more, greater participation by the recreational fishing community in not only collecting data but also in sort of the strategic planning of our science enterprise.

Accountability and reporting was really kind of interesting, in that there of course is an interest in having greater ability to estimate landings and keep the rec sector in accord with its ACLs, particularly for the non-hire sectors. However, it was interesting that there was -- while there was frustration that the rec community in some places was going over their ACL, there was a lot of frustration by the anglers themselves in the private boat sector,

where they are blamed when they abide by the rules.

And so what I mean is if the individual fishermen are out there and they're taking their two fish at the right bag limit and abiding by the rules, being held accountable, but there are overages nonetheless, given the rules as they were established, then they're frustrated for getting pointed out as the problem when they're following the rules. In other words, they were saying don't hate the player, hate the game.

Let's see. Engagement, education outreach. Again, this was similar to data, more, better, more in-person, more in-person regional roundtables, etcetera, and more social media. And then policy goal and implementation really included the interest in having accountability, the agency being accountable and inserting metrics into the process.

So what did we do? Well, based on the comments, we proposed two new goals, increasing the number of overall policy goals from three to five. You may recall the original goals included maintaining

-- essentially maintaining the health and the resources on which recreational fisheries depend; promoting rec fisheries for the benefit of the nation; and enabling long-term participation through science-based decision-making.

So as you can see on screen, we added a climate-based goal and a DEI-based goal, and in addition to these goals being added to the draft policy, there was additional language inserted throughout the document to strengthen these components.

So other key updates. Across the board, we strengthened the focus and the verbiage on sustainability. We incorporated, as noted in the comments there, references to offshore development and depredation specifically.

We expanded references within the document to more cooperative and collaborative data collection, increasing engagement communications and committed towards the end of the document to track and measure implementation.

So this is just as slide that shows

essentially sort of the key MAFAC inputs that we took away from the really, really helpful letter that you all put together. Climate goal, obviously we just touched on that. We incorporated that as well as the EEJ goal. We specifically included some strategies within the document to address interactions, better understand and address interactions with marine mammals.

We addressed the ecosystem interactions, like discards and depredation, by strengthening language around discards and then adding specific references to depredation. Angler engagement and education we reference, and again we strengthened those provisions in terms of trying to do more and better in person and electronic.

Data collection, again there are multiple new references to improved cooperative data collection, and the references to incorporating additional metrics. So we believe that we really have hit the primary MAFAC inputs and we're happy to be able to do so.

So following the release or so we put

together the draft. We then were asked to open up a comment period on the draft itself, rather than just soliciting input as we had done. So we opened up a short comment period from March 24th to May 1st. We shared the draft document with the councils, the commissions and you all at MAFAC.

In that five-week period, we received three short sets of comments, essentially they just indicated that they appreciated that we had taken so many of the previous inputs into account, and there was --

Three requests were to better, try to better address recreational fisheries by mode within the policy, that we do a better job of framing bycatch, less as an individual's responsibility and issue and more as a management issue, which was a really great add, and because the policy up to this point had talked about tools and practices to address bycatch as opposed to a more management entity responsibility to address.

And to improve, emphasize and improve data collection to a greater degree and trying to commit to

more specifics.

So where do we go from here? Well, that's not quite the right slide, but its close enough. So after today, we will -- we will take any additional comments you all have. We will finalize a draft in the next week or two.

We'll then enter that into what we call our policy directive system, which is sort of the formal review and clearance system for the agency, and we hope to have that finalized and released in September. We will then, during that period, we'll be working on the implementation plans with our regional offices all around the country, and they've already started -- they've been working on those for a few months.

And then come October 1, we will begin implementing the implementation plans to advance the policy. They will be three years in duration. So while all this was going on, we were not just idle. We had a lot of other things, irons in the fire.

I wanted to touch on a number of things that we've done in the last few months, that actually

speak to a number of these projects and their recommendations. First was about five weeks ago now or four, we co-hosted with the Office of Science and Technology a Recreational Economics workshop. We had about 60 folks from all around the country there, and the Gulf Council was generous enough to share, provide us office space and host that for us.

We were able -- we've been able to work in the last year with the Southwest Center on the cooperative Groundfish sampling fleet, which you'll hear more about tonight, and on Saturday some of you will learn more about it.

We were able to do a similar, get a similar project started in working with the Northeast Fisheries Science Center, where we have a new Groundfish study fleet that is going to be looking at cod and haddock issues up there, and it's the for-hire study fleet.

Cooperative tagging program. We were able to work with the Southwest Center, provide them some funding to expand their cooperative tagging program from just highly migratory species to also now include

coastal migratory pelagics. We teamed up with our Office of Habitat Conservation to solicit and identify work to advance a number of habitat conservation projects through the NFHAP Partners, which directly engage rec anglers on priority projects for the rec community.

We were able to directly, work directly with the Caribbean Council to provide them with descending devices for both the commercial and the recreational fleets down there, because the fleets are really pretty small. We were able to cover both across all of the islands.

We have been working with the Alaska region to help them with their engagement efforts and host, co-host a series of workshops this spring and then again in the fall, this coming fall in the recreational quota entity. We teamed up and supported the Pacific Islands and the Southeast Region on some protected resources engagement materials, basically turtles in the Pacific Island and sawfish in the Southeast.

And then probably the most fun thing we've

been able to do is team up with the Sanctuaries Office, our three regional offices you see there and the National Park Trust to co-host and sponsor some family fishing day events. These are focused on really low income areas like Title I schools. The first of those was held weekend before last, and Tim went down and did that down in Florida.

And then we've got one here planned on the west coast, and then another up in Maryland. So we've been quite active in the last year or so. So with that, I will stop and open it up for any questions you may have.

CHAIR DAVIS: Okay. Thank you very much Russ, for the overview, and I see Donna and then Natasha and Meredith.

MEMBER KALEZ: Thank you. Thank you so much, Russ. It's very comprehensive and I think you covered every single thing that you could have in the updated policy. I think that you showed it to so many different groups and got so much feedback that it turned out wonderful. So thank you so much.

The only thing I would say is please let

us know how we can help the implementation process. I know that you know that Kelly really wants some measurable results to come out of the policy this time, and so whatever we can do. It's MAFAC or in our individual roles would be great to help you implement the process. You said it's going to be three years?

MR. DUNN: Its three years in duration, yeah, because we figured two years wasn't enough time to really advance projects in many cases, and four years was kind of too long to go without a check or a check-in. And so what you'll see, what we're planning is that the projects or the plans will include specific metrics for the projects looking forward.

MEMBER KALEZ: Thank you again.

MR. DUNN: Thanks.

CHAIR DAVIS: Great, Natasha.

MEMBER HAYDEN: Thank you Madam Chair. Thanks for the presentation. My question's on in your slides, you've got under draft policy comments as framed, bycatch as a management issue. Could you just expand on that a little bit more?

MR. DUNN: As discards as a management

issue? Bycatch? Yeah, yeah, yeah. So it was actually a comment from Meredith and --

(Off mic comment.)

MR. DUNN: Yeah. I mean --

PARTICIPANT: You want to arm wrestle for it?

MR. DUNN: No, no, I capitulate. So in -- while we all know that it's an agency responsibility, right, under National Standard 9 to minimize, to the extent practicable. In the previous version of the policy, we really only addressed bycatch by talking about promoting gears and practices that individuals could undertake to try and decrease the mortality of such.

And so Meredith's comment was it goes, it should go beyond just the individual angler. You've put all the responsibility on the angler, and haven't focused on it as a management issue as a whole.

And so we're looking at language now to try and -- we'll leave in place that it -- responsibility for the angler or promoting those practices, etcetera, but also highlighting that as

management issues that the councils and/or HMS, Atlantic HMS should address. Let me ask you if that's acceptable.

MEMBER MOORE: That was great and yes. So there's certain fisheries where the discards in recreational catch is like the leading cause of mortality for certain stocks. And so the idea there is that the policy should think about that as a management issue, and not just have descending devices or something like that.

CHAIR DAVIS: Thank you. Meredith. Was that your comment? Sorry, I got a little sidetracked.

MEMBER MOORE: No, absolutely not. I have so many more things to say.

CHAIR DAVIS: Okay.

(Laughter.)

CHAIR DAVIS: You're up next.

MEMBER MOORE: Thank you so much. No, so first I think the revisions look really good. I'm really pleased with it. I also really like the way that you address climate and equity really comprehensively throughout. When you have cross-

cutting issues like that, I think it's challenging to figure how to add that in. So just wanted to give a lot of credit to the team in figuring out how to do that.

Now for a difficult question, which you may need to phone a friend from some answering on, so I'm warning folks on the other end of the table too. So recently the Gulf of Mexico's ELB program went through some lawsuit challenges. The ELB program in the Gulf of Mexico for the for-hire industry, the Sea Fire Program.

I just wanted to highlight one of the -- I'm going to narrow in on an issue, which was in some of the communication from the agency afterwards, there was a real discouragement of voluntary submission of data, noting that it wouldn't be covered under data confidentiality and there was other concerns there.

And so my bigger question is like how in the recreational data space, because a lot of what we want to try to accomplish I think with rec data may involve voluntary submission of data, and not just from for-hire but from private anglers.

So I'm wondering if you can like square that up for me a little bit about why the agency is thinking about discouraging voluntary data, when I think voluntary data, even with its limitations, is going to be a key part of understanding recreational fisheries going forward, and just you can also take this as a homework assignment later if you need to?

But that was something I was really worried, and I just wanted to hear a little bit more about -- I understand that ELB case is like a pretty specific thing. You have to respond to the court findings in certain ways. But the blanket discouragement, I think, of voluntary data was interesting to see, I would say.

MR. DUNN: So I'm going to do all three.

MEMBER MOORE: Okay.

MR. DUNN: I'm going to give a partial answer, I'm going to phone a friend and I'll do some homework. So in short, I think part of the reaction was the agency still was trying to get its footing immediately after, and you know, it terminated the program like that, and trying to figure out what

applied, what didn't apply in terms of confidentiality, etcetera.

I think there was a struggle there to figure out what we could do and not aggravate the judge of the situation any further. In terms of looking forward, I think you're right. I think there is a real likelihood that more and more data will become -- there will be more and more voluntary data in the system once apps really start to get a foothold, and as you know that's been really struggling.

But beyond that, I can't really square it at this moment. But this -- now let me phone my friend, Mr. Rauch at the front of the table, and ask him if there's -- if he wants to expand on any of that.

MR. RAUCH: I'm trying to figure out what you left me to answer. I do agree with you. Right after the court case, you want to avoid any appearances that you're trying to subvert the Court's decision. The Court pretty clearly enjoined the program and removed the authorization for the program.

So you do not want to be seen as going around that by encouraging voluntary data, which is not really voluntary, but we want you to do it. That's not the impression we want to give. I'm often concerned about encouraging voluntary data if we don't have a mechanism to use that.

We have -- it's a balance between, it's really good to get the fishermen involved, they like giving the data. But they get really annoyed if they give data that we then don't use. So having that, the matchup between -- this is one area that it could be really useful and here's how it gets used.

The MRIP does this a lot, right, the MREP program. Here's how it gets used in the system versus just don't just send us random cellphone pictures of the fish, right? Because people, they get really disgruntled when that doesn't get used. So it's a delicate balance and particularly with the new program, you know. The way we thought we were going to collect data got set aside. We were not going to look for a way around that.

We're going to -- we're currently I think

in the Gulf Council meeting what next week? They're going to discuss, you know, how to address this. Can we restore the program? In light of the Court's mandates, what would that take? A very deliberative process to get that done, which is the right way to go about doing it.

So those two things are going on. One, we want to be very sensitive to the Court. We're still interested in that kind of program if it can be done, but also we don't want to encourage people to just randomly give us data that they're going to get offended if we can't use it well, because it's a partnership there, right? So --

CHAIR DAVIS: We have Jocelyn and then Linda.

MEMBER RUNNEBAUM: Thanks Russ. I actually just had a question about the study fleets, and what the goals of those were. I have a very specific question about the Northeast study fleet, and it sounded like it was haddock and cod you said?

MR. DUNN: I couldn't ---

MEMBER RUNNEBAUM: What fit? I guess what

are the goals of the study fleets, the recreational study fleet just overall? And then the two species that were included for the northeast, Groundfish study fleet, recreational Groundfish study fleet hat you mentioned?

I'm kind of curious if cusk is one of those species that would be included. It's an unmanaged species that is recreationally targeted and extremely vulnerable. So curious if it fits into the goal of that program.

MR. DUNN: So in short, what they are trying to look at is, you know, cod is being divided into four new sub stocks, and they're trying to get better data on those individual stocks. And the best way to do that, they felt, was through this -- most economical through this rec study fleet.

So what I'll do, I can pull up the document and show it to you what the goals of that one are. Out here on the west coast, the study fleet was really started looking at sampling in places where traditional trawl surveys couldn't go, because there's such high relief in a number of places out here. And

so they've been sampling in places that the trawl survey doesn't work and sort of filling gaps more or less.

And they are working with different components. Out here, it's the head boat fleet they're working with. On the east coast, it's a six pack fleet that they're working with, and it's yeah focused. It's not focusing on cusk. It's really, in my understanding, its cod and haddock specifically in Gulf of Maine. But I can -- I'll get you more details on that.

MEMBER RUNNEBAUM: If I may follow up, that seems like a missed opportunity.

CHAIR DAVIS: Linda.

MEMBER O'DIERNO: Thank you for that presentation. Recreational fishing is such an important outdoor activity with so many positive ramifications. Under your educational component, angler education, do you have any provisions for youth education, especially inner city, under-served populations?

Because it seems to me that such a

positive activity, there are a lot of resources out there. If there's a way to marshal those resources, it could be a positive step and would fit in with equity and environmental justice.

MR. DUNN: Yeah. So certainly that is a component of it, absolutely, and it does, as you said, it fits well with the EEJ strategy that Sam talked about this afternoon. It also fits in very well with an effort, a larger agency effort called FICOR, the Federal Interagency Committee or Council on Outdoor Recreation.

NOAA is one federal partner among many, like Department of Interior, Fish and Wildlife Service, Park Service, etcetera, Department of Ag. And really one of the top priorities for FICOR is engaging under-served and disadvantaged communities out there, getting kids' families out to be able to partake in those, in outdoor recreation and educate them at the same time on conservation issues. So it's all part of that, absolutely.

MEMBER O'DIerno: The one caveat that a lot of those inner city kids don't have families that

are actively involved. So that's another prong of the issue.

CHAIR DAVIS: Okay, good. It looks like there's no further questions, Russ. Thank you so much for the update and for providing next steps, and for the input and questions from MAFAC members as well. Thank you so much.

(Applause.)

CHAIR DAVIS: Okay. Next I'd like to invite Sarah Shoffler up. She is a coordinator for the National Seafood Strategy, and you might remember that MAFAC provided input in the original National Seafood Strategy that Michael Rubino had shared with us over the last couple of MAFACs.

And so her and her colleagues, Ben Fissel and Doug Lipton, and they're both on virtually with us. They're going to present as well. So we'll have some presentations and then we'll have some follow-up discussion from there. So I'd like to turn it over to Sarah.

MS. SHOFFLER: Hi, thank you for that and thanks for having me. I hope you all are enjoying our

lovely San Diego weather. We call this Meg Ray. We're hoping it doesn't flow into June bloom. It's been pretty gloomy all month.

I think Katie was going to flash a slide up for me. So what I'm going to do is I'm going to do a really, really quick recap of the National Seafood Strategy, because I think most of you are familiar with it. Hopefully you've had a chance to read it. Some of you provided comments, which we very much appreciate. There we go, and then I'm going to pass it off to Doug and Ben for the bulk of this conversation.

So the Strategy arose out of a lot of conversations that we had with industry. As you all know, seafood is good for people, good for the economy, good for the planet. Yet seafood sector broadly is facing a lot of concurrent challenges, climate change, aging infrastructure, labor shortages, potential conflicts with new uses, etcetera, etcetera.

So this Strategy is our approach at putting U.S. seafood back on U.S. plates, continuing to produce seafood sustainably, and support jobs,

communities and the economy as it related to the seafood sector. You can see the four goals up there, and there's a QR code to the Strategy. It also should be linked in your, in your agenda.

So we adopted the Strategy. We put it out for public comment for about six weeks, and we got over 150 separate comments. So over 40 of those were from various organizations, fishing associations, NGOs, academia, etcetera, also four councils. We also received feedback during three listening sessions that were open to everyone, and about four council meetings, four council meetings to date.

So the comments have been largely supportive of the Strategy, which is great to see. There was a lot of appreciation expressed for identifying and recognizing the value of fish as food, and interest in putting U.S. seafood back on U.S. plates.

As we mentioned, the last time we talked about this, it was also recognized that our science and our current management process is foremost and are really important, and that needs to continue. But

also seafood sector needs more. So that's the Seafood Strategy.

So other themes that have come out of this, and I'll get to when you'll be able to see these, the feedback that we've gotten. So this will resonate after earlier conservation, and interest in more flexible management, especially given climate change. I'm just going to mention a few of the themes, because there are quite a few. Need to address aging infrastructure and bringing processing back to the U.S.

They were very supportive of expanded communications about the sustainability of U.S. seafood, and being proactive about addressing misinformation. Concern was expressed about competition with imports, especially those that don't have the same standards as the U.S.

Also concern about expanding access to foreign markets to U.S. seafood when domestic needs aren't necessarily met. Lack of cohesive permit system is really limiting. Aquaculture. We need to address reducing fleet emissions. Interest in the

agency modernizing our data systems and support services.

There were a number of suggestions relevant to the Equity and Environmental Justice Strategy, in terms of better understanding demographics of fishing communities and labor, who has access, who doesn't to fishing or fish communities and also consolidation is happening in many places. A lot of other similar themes.

It's worth mentioning that this Strategy is one of a suite of strategies or plans that we have.

Heard, talked a lot about the CEFI this morning. There's also the Equity and Environmental Justice Strategy, the Rec Fishing Strategy. We also have guidelines on using traditional ecological knowledge in science. So this is one of a suite of strategies that we have, to kind of guide us on how and what we should be doing.

So we will be more clear about that in our update of the Strategy, and we're going to use the comments that we got. We're still processing them. To update the Strategy, we anticipate having the final

one in the next few months around July. At that time, the Strategy will be available and we'll post all the public comments online, stripping any PII from that as needed.

And let's see. Oh, and we're working on an implementation plan. We got a number of comments.

We asked for those as well for implementation, and the presentation you're going to get today is an effort to provide useful information so that you can help us identify priorities in social science and economics.

So with that, I'm actually going to pass this off to Doug and Ben. So Doug is our senior advisor for economics for the agency. Did you already say who they were Megan? Okay. Then I won't repeat that. So they're going to provide an overview of the agency's social science including economics portfolio as it relates to the Seafood Strategy, and then we're going to ask for your advice on what we should prioritize in that area, as we're developing an implementation plan for the Strategy.

So if you have questions about where we

are in the process, I say maybe we can handle those quickly now, is that okay? Or should we wait?

CHAIR DAVIS: Will Doug and Ben be providing more information on what you just presented?

Then maybe we wait until after their presentation.

MS. SHOFFLER: No. They'll be talking about social science.

CHAIR DAVIS: Okay. Well yeah. Let's open up the floor to any questions you might have for Sarah in regards to where they are on the National Seafood Strategy. You gave a great overview Sarah. Thank you for updating us on that. Go ahead, Brett.

MEMBER VEERHUSEN: Well, I sure hope this promotes another moment of brilliance from Roger for the next comment, but so you know, I think that --

(Laughter.)

CHAIR DAVIS: He's laughing.

MEMBER VEERHUSEN: Well, I think this will be, you know, on the Strategy it's really getting to how they help get our seafood, you know, to more consumers or whether that's domestic or international.

I think what I've heard is somewhat argued that that

may be outside the scope of the agency.

But I would completely disagree, you know.

The agency yes, should be providing kind of the scientific background and the management and the regulatory and the policy, but without the fundamental base on who to sell or sell seafood to or who to have access to seafood for subsistence or recreational, you know, we don't -- the rest is impossible.

That again gets to some of the value of the agency. And so I'm curious if the agency is going to shop the Strategy around to other agencies or to other decision-makers on the -- on how the agency again provides value to the United States and, you know, across the globe. Is that part of the Strategy itself, is to communicate what's within it?

MS. SHOFFLER: Yes, we have been doing that to date, and part of this, what I didn't mention in my very brief overview involves a lot of partnership. We can't do all of this alone. So partnering with USTR, USDA, Sea Grant, academia, NGOs.

I don't know if Jim or Janet want to comment more on that.

MR. LANDON: Yeah, and I'd like say that the other stakeholder, if you will, is -- this is also part of our Congressional engagement strategy, to also reframe some of the really basic asks, but just kind of reframe it from a different kind of stakeholder perspective of at the end of the day yeah, it's about getting seafood on American's plates.

Whether that's providing support for surveys or a communication strategy or promoting aquaculture, whatever that is, is all of that is, as Sarah mentioned, kind of part of our strategy of strategies with our approach to this. So appreciate that.

MEMBER VEERHUSEN: Yeah. It seems like leaning into the people who directly are selling seafood or providing seafood to the customers is going to be really important in that communication strategy so we understand. I do think that the -- I hope we get more of the seafood supply chain involved in these decision-making bodies, and Roger's presence will be missed.

MS. SHOFFLER: I will make a plug for

leaving as much time for Ben and Doug and discussion about that. We really do want your advice on that. But I'm happy to take any other questions too.

CHAIR DAVIS: Thank you. Linda.

MEMBER O'DIERNO: Thank you very much, and one of the things I was really impressed about is you put a five year time line on this. One of the difficulties we've had often is sometimes the government moves with glacial slowness, and things just don't get done in a timely fashion.

A couple of comments about the Strategy. One is the emphasis seems to be in retrofitting existing facilities, rather than expanding the infrastructure, which I think is an important component. If you look at our seafood products, we're shipping product overseas to be processed and then bringing it home.

That's not good from an environmental standpoint as far as greenhouse gases go. It's not good for just the quality of the product, and it's not good for our economy.

So should there be more emphasis on

expanding our facilities, also in providing additional resources, so that all those different components of infrastructure, harvest, processing and distribution, can meet new environmental and sustainability standards. Is that another important consideration?

And lastly, when we talk about consumer marketing and promotion, we always seem to focus on nutrition and the health benefits of seafood. We've been doing that for 40 years and if people don't know it now, they're never going to know it.

Would it be useful to do a consumer survey, and find out what are the barriers, because I think you're going to find things like price might be a major barriers, things like quality at the different markets, and it just might be useful in developing a really effective strategy.

I really don't know if any consumer surveys have been done recently. There used to be quite a few of them, but it might be a useful tactic.

MS. SHOFFLER: Thanks for that. I think we would agree with you on all those points. As for infrastructure, our intent was not to say just

maintaining or just build more. We recognize that processing is largely overseas and that's a problem and inefficiency in some cases. Obviously, there must be some efficiency there if it's worthwhile for businesses to do that.

As for identifying health and safety approaches and consumer survey, I think what you're getting into is actually what we want to talk about next is actual implementation, where the rubber hits the road. What should we prioritize in the implementation?

As you mentioned, there's a five year time line. We're not going to change everything in that time line. I see this as a slight and very slow turn of a very large ship towards how we can better and more broadly support the agency. So we're going to identify what we can do in the next five years, and it won't necessarily do everything we want to do, but it will be, we hope, a darn good start. Anything else there from Jim and Janet?

CHAIR DAVIS: No. Thanks, Sarah. We have time for two more questions, from Joe and then

Sebastian.

MEMBER SCHUMACKER: Thanks. Thanks Madam Chair. I'm going to bring this up now, and maybe we can wait for an answer after Doug and Ben talk to us.

But we have an opportunity on the west coast that's going to be coming up over the next few years, and it was alluded to by Dr. Hazen this morning, an abundance of sablefish, a great abundance of sablefish that we have to generally sell in the international markets because there's no real domestic market for sablefish sadly.

Sadly, it's just not there. You know, people -- not as much as we can get elsewhere. And so it's a challenge that I just see that possibly could be worked into the implementation that you're going to be discussing here. NOAA Fisheries, we're at large. Our people that go out to talk about our seafood products out there, National Seafood Council.

Anyway, I just see that as an opportunity, one of those things that don't come along, doesn't come along very often, an abundance of fish that's

going to be available, and our west coast fishers are going to be really challenged to get, you know, to make the profit that they could off of this remarkable product. I just want to bring it up, thank you.

MS. SHOFFLER: Thanks for that. I think identifying what we could or should be doing, especially in partnership with other organizations in terms of marketing in situations like that are where our biomass is greatly exceeded, and that's why what should we do with those products, that's also part of the Strategy, exactly.

CHAIR DAVIS: Thank you. Sebastian.

MEMBER BELLE: Thank you. Just all due respect to my west coast colleagues, but on the east coast and Gulf of Mexico, we do not ship a lot of stuff to China to get processed. It is processed in the United States of America, and so I think you have to just keep that in mind when you begin to talk about how the value chains of fisheries kind of play out.

At least in our part of the world, we process virtually all, with very exceptions, of what we land, whether it's aquaculture or not, on the east

coast. We process it domestically, and so for us, that dynamic is quite different and the value chain is quite different, and I think we need to -- we need to understand that and recognize that as we begin to discuss how fisheries, whether it's aquaculture or fisheries, impact local communities or regional markets.

MS. SHOFFLER: Thanks for that. We do recognize absolutely that the challenges and the supply chains vary from region to region, state to state, county to county. I think what's needed in one place may or may not be needed elsewhere. There are certainly trends across the U.S.

But and I think you were touching on one of the big themes that we recognize and we'd like to address, is that we don't really know where U.S. seafood goes on U.S. markets. We have better information on where it goes outside, and so I think that's something that we -- this can be used to address.

CHAIR DAVIS: Great, thanks for that discussion. So Sarah, I think we can tee up your

colleagues. I'll let you take it from here.

MS. SHOFFLER: Okay. I think Doug is going to start off with the presentation. Doug, can you pull that up?

MR. LIPTON: I hope so. Hopefully you can hear me.

AG We can really well. So I guess Doug is going to provide an overview of our, of the agency's Economics and Human Dimensions Program as it relates to the Seafood Strategy.

MR. LIPTON: You see my presentation as well, I take it.

MS. SHOFFLER: We do.

MR. LIPTON: Great, super. Well thank you for having us here. I know it's been a long day and you're getting near the end, so we'll try and be brief and also leave plenty of time for discussion and questions. So as you said, I'm Doug Lipton. I'm the senior scientist for Economics for NOAA Fisheries.

I report to the Chief Scientist, Cisco Werner, who I think you heard from earlier today. He might even be in the room, I can't tell, and I put

this together with Ben Fissel, who is the acting division chief of Economics and Social Analysis Division in the Office of Science and Technology in headquarters.

When Ben isn't acting as the division chief, he's also one of the chief commercial fishery economists in the Office of Science and Technology. So I'm going to talk a bit about the intersection between the NMFS Economics and Human Dimensions Program and the National Seafood Strategy, and I think maybe relevant to this group what that intersection should be, or at least getting advice on that.

So I'll give just a broad overview of the Economics and Human Dimension Program, and then we'll hone in on the commercial fisheries component, and then talk about something we call HI-EBFM or Human Integrated Ecosystems-Based Fisheries Management Strategy, and then as I said, hopefully time for questions and discussion. So we welcome that.

So who are we? We're actually a fair number of economists in sort of a non-economic federal agency, so we have 50 or so economists, 14 social

scientists. On any given day, those numbers can, you know, jump around, and that includes the full-time equivalent federal employees, and not contractors.

So there are quite a few contractors working with our economists at the Science Centers, and in some cases in the regional office. So here on the map you can see the distribution. So in the regional office the economists are mostly supporting the regulatory actions, the management plans and so on and all the required work that goes into that, and some regions don't even have economists to do that.

So for example in the Northeast, the economists at the Science Center also play a critical role in working with the councils on regulatory actions. Other than that, they're in the Science Centers. They're doing economic research or social science research, and then you can see, you know, how they're distributed.

So while it's a large number, by the time you break it up by region, you know, it's a fair amount but not huge capacity. And what are they working on?

So in addition to commercial fisheries economics, we have a whole group of folks working on recreational fisheries. Russ alluded to our workshop we just had in Tampa about a month ago, recreational fisheries economics so you know, folks working on that.

And then the human dimensions, and you know, I go back and forth between social science, human dimensions in terms of sometimes we say non-economic social scientists.

We don't want to get caught up in the jargon, but we have, you know, other disciplines besides economics, anthropology, sociologists, political science, etcetera working on, you know, a variety of these issues and providing the unique perspective to the issues that we're facing.

And then something we lump together called Ecosystem Services, which includes protected species economics and habitat economics. So all those folks, you know, and specializing in different things. So it's a handful working in each Center, working on these topics.

So let's just hone in on the commercial fisheries part, which is most relevant to the discussion today. So a lot of what happens is getting and analyzing data that's collected by others outside the program. So all of the landing data and the revenue data that's collected and is presented in the Fisheries' FOSS database for example, is key input to a lot of the economic analyses.

Those are combined with vessel trip reports like log books; it could be observer data and so on, as well as dealer data on prices and quantities of different species. These are all getting put together in assisting the analysis. And then other data such as permit data and then the data I just mentioned, the landings revenue data.

In addition to that, there is some primary data collection by our economics program, mostly around cost of fishing. So we need to know in various fisheries the different gear types, what fishing costs are, again to inform regulatory action, management action and do research.

We might even specifically hone in on

specific types of fisheries, for example in capture fisheries there's a need to develop performance indicators, and there's usually a need to collect, you know, this performance data and cost data.

But it varies among fisheries, and but there's primary data collection both on operating cost, on the fishing costs as well as fixed costs on gear, vessels and the like. So that's combined with the other data that help with the analyses.

And the type of -- I'm just going to give an example. We don't have time where it would be fruitful to go through a comprehensive list of all the types of economic and social science analyses that we do. I'm just going to give two examples, one economic and one social science. As for the economics, I'll talk about something we call FishSET, Fisheries Spatial Econometric Toolbox.

This is where we're taking a lot of that data that I just showed you, and particularly location data on where catch is -- where fish are being caught, like in modeling the decisions that captains are making in terms of where they're going to go fishing,

what species they target, you know. They're going to go to an area to avoid bycatch. How are they going to deal with conflicting uses?

For example, if you're worried about wind sighting or aquaculture in an area, how will you respond and how will that affect your performance? So anything having to do with spatial analysis is handled with the FishSET toolbox.

So we've been for a number of years developing this tool, so we can have sort of the national approach and be able to apply it regionally with the specifics of a particular fishery, and inform management or inform policies that are being contemplated about the economic impacts on the fisheries.

That's an economic example in the social science world. Again, taking the data I just mentioned, a lot of the fishery performance data, and combining it with other data sets such as the American Community Survey and other sources of data on fishing communities, to better understand not the status just of the fish stocks and with the fishery itself, but

the whole fishing community.

And so these fishing communities are embedded in larger communities. Some are more dependent on fishing and therefore may be more vulnerable if things are going to change and for the worse. We need to know that, and that's what this community social vulnerability indicator exercise is all about. I believe there's been presentations to MAFAC in the past, recognizing that not everybody might have been there.

So let me go from that sort of basic here's what we do and here's some examples, to our Strategy. This is a human integrated ecosystem-based fishery management concept really grew out of a science review we had several years ago. Back in 2017, we had the last of a series of science program reviews. We reviewed our economic and social science program. We went to every Center. We had outside experts come in and evaluate what we were doing both regionally and nationally.

They basically came back and said, you know, you've got a great team of folks. They're doing

state-of-the-art work. They're doing the right stuff for now, but there doesn't seem to be any direction and you really need to build a strategic document to guide the work so that you'll be sure that you'll continue to be doing the right work in the future.

And one of the things we decided is rather than kind of saddle ourselves and think about how do we just take the economics and human dimensions component and make that work better, that we needed to sort of ride the wave of ecosystem-based fisheries management, which was really taking hold and becoming a major focus of the agency, and see how we can integrate this human component, the economics and human dimensions in that.

Let me just try something here with -- if I can just zoom in on this graphic. If you see across the top here, if you can see my pointer, that we included in that as the discussion of the Seafood Strategy was just beginning, we realized that we needed to do better in terms of understanding seafood markets and trade, just to do our basic work that we were trying to achieve in terms of get informing about

spatial issues or allocations or whatever, that we needed to use that approach.

And so specifically, we identified a goal, and I just pulled this one out but it's throughout the document, that we would try, and I say with adequate resources because you know again, we're stretched thin and we have, you know, other demands on our time.

But to really try to do our best when the opportunity arises, to understand these markets, and the interactions that are going on and the differences between -- we just heard between what's going on with the sablefish on the west coast and fisheries on the east coast, and why is that happening and understanding those markets better, and understand the other issues such as labeling and stuff like that, as well as, you know, other points in the chain, in the value chain.

And if you see those efforts that I talked about earlier, it's sort of the bread and butter of what we're doing is really focused on the fishing aspect and catching fish and the first sales, and not a lot on the value chain. So what would happen if the

value chain and seafood markets and those kinds of issues became more foundational, more part of the core function?

Then we could do rather than sort of one-off demand models of the different species we were just talking about, a sablefish demand model, that we'd have a comprehensive set of demand models that understands the interactions between all of the domestic fisheries, as well as the international fisheries.

They could potentially, you know, provide this information to industry and other users, interested users through some sort of interactive dashboard and regular reporting. A lot of what we do is based on data that was collected a year ago or more, and we have to do an analysis and provide advice on what's happening this year and next year, and we could focus more on doing more types of nowcasting.

We could help provide more guidance on allocating our own internal funding and prioritizing fisheries that are more vulnerable, have more potential and just play a general supportive role in a

variety of areas.

So it's sort of an aspirational component, and again where advice might be welcome in terms of how much of this we should try and take on, or what should be left for industry versus internally, and that's the type of information we'd like to get your advice on.

So that's the presentation. But before we open up to questions, I would ask Ben, if you have anything you'd like to add, emphasize, anything I got wrong or whatever. So I'll turn it over to you and I'll stop sharing.

MR. FISSEL: Thank you, Doug. No, I think you did a great job in just kind of connecting, you know, a lot of what Doug was talking about for, or what Doug was talking about to some of the questions that were asked of Sarah before in terms of, you know, reorienting some priorities, you know, towards the fishing industry and supporting the fishing industry.

You know, I think what we're proposing, you know, both within the Seafood Strategy and, you know, and some of this research here really kinds of

gets at that, and will really kind of bring us along further in kind of answering some of these questions.

I think Seafood Strategy is a great vehicle for doing that, you know. Yeah, we look forward to answering some of your questions about, you know, directions that we can go and working with you further on that.

CHAIR DAVIS: Thank you Doug and Ben. That was really great to hear from that perspective. I see Sebastian has his hand up.

MEMBER BELLE: I do. Thank you, Megan. You know, given that roughly 57 to 60 percent of the national seafood supply in the U.S. is coming from aquaculture, whether it is domestic or foreign, most of it foreign, how do you folks think we should position ourselves and particularly your agency, in responding to that?

Because I get that you're doing great stuff, great work, but the reality is the markets are doing stuff irrespective of your work, right? They're responding to demand and supply and pricing points, and we as a nation are really being caught on our

flat, on our back foot.

We are -- we are not strategically thinking about seafood as a critical food supply issue, and making some tactical or strategic decisions at a national level, including frankly the Seafood Strategy that was just put out by your agency, to respond to that and say we need to capitalize on this opportunity.

If you compare seafood to beef, poultry, chicken, turkey as a protein part in the marketplace, we supply roughly five to ten percent of domestic consumption versus those other protein sources. They are mostly -- all of those other protein sources are mostly supplied by domestic sources.

So I hear, you know, all the stuff that you guys are doing is great, it's important. But I think the agency needs to take a quantitative leap here and change the way they're thinking about seafood in relation to U.S. marketplaces, and say we are at a strategic disadvantage. We've been -- you know, seafood was identified as a national security liability in the last NSA security assessment.

Your agency is the lead agency for that commodity category, and we are not going to address that liability from a perspective of regenerating how we manage commercial fisheries in this country. We have to fundamentally change how we are thinking about the protein source that your agency is responsible for, in terms of how it serves national needs.

I just don't hear that coming out of your agency. You guys are all thinking about how this is all kind of fitting into the existing seafood markets, but we need a radical reexamination of how your agency is going to serve that national need. And I'm sitting here listening to all this great stuff. It's all good stuff. Don't get me wrong. It's all very good stuff.

But it's not answering that question, and I think I'm interested, particularly as an economist, how are you guys thinking internally about how you're going to actually change this up and really serve the national interest?

MR. LIPTON: I'll take a crack at that, but really hedge. I know what you're looking for Sebastian, and I appreciate the comment. But I think

that's -- and you know, MAFAC's advice on that to the policy side of the house and all is, you know, warranted to provide that, that approach.

You know, our role is to provide, you know, the basic understanding of the seafood markets, and you know the story that emerges is that the integration of these markets, whether it's trade, it's the role of aquaculture, and being able to understand that and provide analyses that demonstrate what you said, is food --

Seafood is part of the food system, and you can't just isolate it and say here's what's happening to seafood and not know what's going on in poultry and pork and all that and other, what's happening in the world trade around those commodities.

You're missing, we're missing a lot of the story, but so I think there's two components to this.

One is incorporating the types of things you're talking about in the analyses that we're doing, to recognize that integration and the role of seafood as a protein source. That's the part that, you know, we're talking about here in sort of this expanded, you

know, core role. But I'll leave it to others to respond to, you know, just the agency, you know, and shifting that core thinking.

So my point as an economist is yes, it's important. You can't ignore it. You're not doing your modeling correctly if you're not incorporating that, so the advice you're providing is less than what it should be. That's what I think as an economist.

I could have some personal ideas about what you mentioned, but you know, I'm just providing advice to the policy makers for the agency. So I don't know if anybody in the room wants to comment on the other part of your question.

MR. LANDON: Yeah. Hey Doug, this is Jim.

So I'll see if I can also respond, and Sebastian thank you so much actually for, for what is actually a ringing endorsement of, I think, the National Seafood Strategy. So and in Goal 2 specifically, you know, I think what this Strategy in fact does holistically is actually recognizes, you know, that there's wild capture fisheries, and certainly the goal, the strategy is looking to increase the sustainability and

the productivity.

But it does recognize that there is, there's a limit, there's a capacity to that. And if in fact we are going to meet the overarching goal of increasing seafood consumption, we need to look for other sources of production. That's found in Goal 2, which has the goal of the increasing sustainable aquaculture production in the United States.

Two kind of subthemes of that are looking at that regulatory efficiency, having that predictability, that sustainability, allowing industry to feel like this is a viable industry for them and looking at -- part of the Strategy is looking at what are the barriers to increased U.S. aquaculture production, understanding those dynamics, understanding why it, you know, kind of going to Doug's point is it not economically viable?

What are the barriers? What do we need to do? Where are the obstacles that we can control that we can support that. Then the second kind of pillar is on the scientific support. So the same sort of science that we provide for wild cap for fisheries,

the vision or the strategy if you will is to provide that on the aquaculture side.

So that is part of how that's integrated into Goal 2 of the National Seafood Strategy. And then I'll make a nod to Goal 4, is really kind of the -- I won't call it the wild card, but we recognize, as Sarah mentioned, there are things that we can do and certainly the Strategy recognizes things that we can do within fisheries.

There's a cross-government piece of this, but then there's also, as he mentioned academia, the NGO, society or organizations, as well as industry. So if you look at some of those components in Goal 4, a lot of that is actually going to be, if you will, beyond our control.

But it's going to require a little bit of, I think for us Goal 4 is getting the momentum, getting that push, and hoping to see that, you know, when we start talking about infrastructure and supply chains and, you know, all of that infrastructure piece is that momentum or that push will lead to momentum for U.S. seafood industry to kind of capitalize on.

So hopefully that addressed your concern, but like I think the short answer is we agree, and that's what the Strategy is attempting to do, is recognize that if we're looking to close the gap or increase production, a lot of that's going to have to come from the aquaculture side in supporting that.

MEMBER BELLE: Well thank you for that, and I appreciate your comments. I would say that strategies are great. Action plans with measurable metrics and resources behind them are what move the needle, and I think that is what distinguishes us from other countries in the world.

If you compared, you know, the development plans that have occurred in places like Norway, Ireland, Chile, Scotland, you can go right down -- China -- you can go right down the list, compared to what we're doing here, we have great plans and policies and strategies, but we lack on the action and implementation and resources side of the equation.

That's the difference, and you know, we're frankly getting out-competed by other countries, and frankly American capital, you know, there are people

who sit on MAFAC who represent companies who represent American capital, they're going to other countries and building companies in other countries, because the business climate and the kind of incentives and the kind of climate that they have to operate in are frankly friendlier than in the United States of America.

And we need to -- we need to figure that out. It's not just about strategy, it's not just about plans; it's about, you know, real business development, incentives and action plans that have resources behind them. So I'll get off my soapbox, I just -- you know, I hear -- so this is my last MAFAC meeting.

I've heard this again and again and again in MAFAC, and the reality is unless there's money behind it or unless there's a specific action plan, where there are metrics, where somebody's going to get measured or assessed against those metrics, we can all say all these great stuff in the world and it really frankly doesn't move the needle.

It needs to be linked to specific,

concrete plans that are measurable and that have resources behind them.

MS. COIT: Sebastian, this is Janet and thank you. I don't -- I wish you were in the room and at that cocktail party, and I don't think there's anyone that disagrees with you. I just appreciate what you said. Jim, if anything I'm a cheerleader for this plan, but also a realist.

As an executive branch agency, we're responsible for implementing the law and our authorities, and as much as we have ambitions to do more than is in this plan, and I agree with your statements, we don't really have a statutory mandate or the resources that you're talking about flowing to us to do the radical change that you talked about.

I think with the work that Doug and Ben and others are trying to bring, it's been a very rich debate within NOAA Fisheries as well, because we're resource-constrained and we have our plates more than full. So we're trying to kind of both package what we already do in a way that can help us promote seafood and a seafood strategy, and also, as Sarah said, you

know, kind of move in a direction.

But we don't really have the statutory authority or the resources that we've worked to try to increase them, to realize the vision that you're putting out there. I mean I think that's why MAFAC talked about a National Seafood Council, and I think we have a whole lot more work to do to get where you're going. But I don't see NOAA Fisheries right now has having the capability to do that. So we're trying to do the best in be realists with what we can accomplish.

MS. SHOFFLER: And if I could add to that.

Part of the reason we brought some of this to you today is so you can help us identify priorities. It doesn't have to be today, but so you can help us identify priorities when -- if we have an opportunity to request money, put budget proposals in.

CHAIR DAVIS: Thank you this discussion/conversation. So Matt and then Meredith and then Stefanie.

MEMBER UPTON: Thanks, and Jim, I think your comment really helped kind of have me think about

another benefit of this could be that it could be a way to attract more resource from the government towards some of I think these goals, and part of the way I think we can do it is by some of the data that you're going to be collecting as economists.

My question is around just how are you measuring the workforce aspect of it, because I think so much innovation happens in seafood by the folks who are working in plants, working on the boats or trying to sell the fish or creating some of the actual products.

But I am worried that a lot of the economic data collected is like community-specific, and those folks are kind of spread all over because the people that I'm thinking about usually travel from their homes to a plant or to a vessel that's fishing.

So I was wondering if you had any kind of thoughts on how to get that data to help kind of support what we can do help that workforce get the skills they need and the support they need to be innovative. So that was one question I had.

The second question is around some of the

costs. You had a graph where you talked about some of the variable or fixed costs, and then what are you doing to try and do outreach or understand those costs, because I think those are say to underestimate because I think sometimes when economists are looking at fishing companies, I think it's one, hard to get people to share data, and then two, sometimes assumptions about how long plants or vessels can operate or sometimes disconnected from the realities if you're looking at a shipyard with issues that you have to address or an aging infrastructure in the plant.

So those are kind of the workforce question, and then the second one around just generally the cost, because I think those are really important with this large picture of what I see this is that Janet articulated, is like hey, this is going to -- if you want to do this, here's how we kind of get there and NMFS doesn't have the budget to do this.

So phone a friend in D.C. who can do that.

MR. LIPTON: So on the workforce question, get at that one first yeah, it's challenging. It's

why I highlighted a lot of the work of our social scientists and anthropologists because they are particularly good at understanding the communities and, as you mentioned, their folks are spread around the community geographically, but they form a community of seafood workers and the like within the community.

So we do, on occasion do surveys of fish workers and so on. It's tough because it's harder and harder for us to do surveys, not just because of the statistical component, but getting Paperwork Reduction Act approval to, you know, ask the types of questions that we need to ask is a problem. But we continue to try with that. We don't have a really good demographic profile of our fish and seafood workers.

We're working. We're in conversations with Census to get access to more, more detailed data on, you know, who are the workers in seafood plants and what's their demographic makeup to understand that workforce better. So we are, you know, doing what we can to try and get that.

And then your other question on the costs,

again that's challenging and as you point out, if you're doing a survey or something like that, it's very hard to get folks to cooperate. In some fisheries there are some mandatory cost reporting and, you know, fairly strong survey to get at that.

But it's, you know, it's varies, and I don't know Ben, do you have anything to add to that?

MR. FISSEL: I agree. We need to be collecting those data, you know, both the kind of workforce data kind of throughout the supply chain that we kind of don't really have much of a handle on, you know. There's a lot about the supply chains, you know, within the U.S. that we don't know, you know.

In some instances, in some areas like there's a lot of regional variation in kind of data collection and the extent to which data is collected, and that's essentially what that graph that you saw up there before, was kind of highlighting, is that some regions have better costs --

In terms of the cost data, some regions have better cost data collection programs than others, better in the sense that it's more extensive. So

we're able to kind of say some things about cost, but then there's a lot that we kind of can't say.

It's because we don't have, you know, it's in part because we don't have the kind of very comprehensive cost data collection throughout all fisheries, and there's a variety of kind of reasons for that. It's not necessarily that we have to collect data from every vessel that kind of goes out, but we need to kind of get at least kind of a bottom line representative sample.

They've been working towards that kind of for a long time, and that graph kind of showed essentially how we've kind of been growing some of those cost data collections.

But you know, the more information that we're able to kind of gather from those and the support that we have frankly for collecting those data, you know, will determine the extent to which we're able to say something about when, you know, when costs, say labor costs increase to the fishing industry, you know.

How is that, you know, affecting, you

know, overall costs? How is that impacting the industry? And then, you know, you're right about also about, you know, employment and seafood processing sectors and kind of throughout the supply chain as well.

These are data that right just aren't being collected. But we're proposing to collect them, you know, through the Seafood Strategy. So we would love to get a handle on, a better handle on all of those things, you know. But we need the capacity in order to be able to do that.

MEMBER UPTON: Thanks for that. I think, you know, outreach to the industry would always I think be helpful, because I think folks who are trying to sell fish, catch fish and process it are really aware on a really minute level of a lot of stuff that you're looking at. So I mean just any time you can pick up the phone and call someone who's in that business, I'm sure they'd share their knowledge because I think --

I guess I have a different take than Sebastian. I mean there's a lot of folks who are

really patriotic and want to invest in these fisheries.

They just, I think, feel that they're up against a lot, and so the information that they can have to help the government understand what they need to do to kind of help encourage those investments I think would be helpful.

CHAIR DAVIS: Thank you for that. We have about five minutes, and then we're going to need to wrap up. So we have Meredith and Stefanie.

MEMBER MOORE: I'll be quick. I'm Meredith and I'm here on the screen so that you can see me. My back is to you. So just a couple of quick things, and one, I've heard some frustration from colleagues who work on the west coast about the lack of social scientist capacity that exists in that region.

I just wanted to flag that. I'm sure y'all are aware, but I'm just noting that I think there are no social scientists in the California, etcetera region, and that has been a challenge for those folks.

I've heard you all -- I'll just note, there seems to have been a request from them for MAFAC to give some -- I'm not sure exactly what we should be looking for on that, but just wanted to make sure we follow up on that.

What I'd actually like to say is that I would, as one of the co-chairs of the Climate and Ecosystem Subcommittee, one of the things our group is working on is thinking about how to define or characterize what a climate resilient or climate-ready fishing community might be, and I would really love to invite like the appropriate cross-section of social scientists and economists to our subcommittee at some relevantly soon time to talk more about that.

Certainly I'm familiar with the vulnerability indexes that y'all have done for communities and those sorts of things. But I just think that there's more that you all could do to help us sort of characterize what that looks like, and we'd love to just have an opportunity to talk with you about that.

I will just note in my working with

fishery management councils, while we seem to get somewhat regular updates about like ecosystem changes, I don't think we get a lot of updates about community vulnerability or status of communities. I would just recommend that for consideration for efforts moving forward. Thank you.

MR. LIPTON: Just a quick comment on the fishing community. We're working with, in partnership with Sea Grant and NOS to hold a workshop on community vulnerability related to climate change. So we'll work from that discussion to, you know, get -- both get your input and provide input in the other direction as well.

CHAIR DAVIS: Thank you. Stefanie.

MEMBER MORELAND: Thank you for moving forward with the Strategy. I look forward to next steps and implementation. Appreciate the update today. Regarding data and the economic team, I really appreciate Sam's comment earlier today on knowing why you're collecting data and towards what use before doing so.

I can tell you right now on publicly

available information, interpreting it knowing how supply chains work, that the Russian share, market share in the U.S. has actually increased for major species since the Ukraine conflict began. No one cares.

So if no one cares about policy that is going to actually align with expected outcomes in federal agencies, collecting more data will not address the problem.

It is very important to get aligned on what we're trying to do, some decent policy, and to address what we're seeing as escalating cost structure, not just from inflation and things in private sector but largely due to a complex regulatory environment.

As we also have a market disadvantage, access around the world, tariff and non-tariff barriers so we can't get fair value and revenue for our product, we basically are on a path to go out of business without fixing federal policy priorities to support a domestic seafood structure as a priority and something we recognize as being in the United States'

interest.

So I appreciate the Strategy. I think it will get at this issue. Collecting data is expensive and then takes a lot of interpretation, and there's a ton that we can do with information that's available now, and urge that there's an interagency approach to try to look at that.

I really hope and think that NOAA's well-positioned to use those data that are available now without additional cost, to shine a light on these issues for the rest of the agencies, before doing deeper dives. Thanks.

MS. SHOFFLER: Thanks Stefanie.

CHAIR DAVIS: Okay. Sarah and Doug and Ben, thank you so much for bringing this to us, and I'm sure that MAFAC, you can tell very passionate on this topic. And so we'll definitely be working towards how we can help provide more input. I want to thank MAFAC members also for their comments and questions during this time.

MR. BEAL: I'm going to attempt to do a short recap on today. It's been a really full day,

really great presentations, great information, great discussions.

I'm going to try to spend a little time just bringing maybe a few topics that sort of kept surfacing to the top, and then we're going to break and go on our evening event, and I have a couple of housekeeping things that I've been asked to talk about too.

So let's just do a quick recap. I also would appreciate any of you, if you have some recap things that really surfaced. If you don't share them now, certainly come to Jennifer or I and certainly share them as well. So as always, we so much appreciate the leadership updates, because it really helps us to understand where the priorities are.

Janet kicked off the day providing that for us. Sam also gave us a really great overview of where the EEJ is now, and of course the science update was really great with Cisco and his colleagues as well. We had some great updates from the fisheries commissioners so we understand what's going on in your parts of the world, the United States that is.

So the things that sort of came up is that there are a number of strategic plans now that are starting to go to the next step of implementation.

That's exciting, because you know MAFAC has been helping along with comments on these strategic processes and strategic plans, and so now, what do they say, now that the rubber hits the road and we start to look at the implementation side of things and just the discussion that we just had clearly identified that, that NOAA's looking for us, looking for MAFAC to contribute and welcomes that as well.

The thing, probably you would all agree that the one topic that kept coming up was communications, how to communicate the data, the complexity of the science, the complexity of what NOAA is -- NOAA Fisheries is doing.

This is not a new topic. I've been with -
- I've been with MAFAC now for six years, and it's definitely one of those areas that I think, I think there have been some good discussions.

Like today, we're hearing that there's a

lot more engagement of the communities. There's a lot more engagement of having the fishermen and fishers involved in the process.

So we're hearing some -- at least I feel we're hearing some new advancements in communication and involvement and engagement, so that's exciting. But I think -- I think that's a topic that we should continue to address here as MAFAC.

And the other thing that came up -- well, during the science discussion, that really teed us up for tomorrow's panels. We've got two great panels that are coming up that Meredith and Jocelyn will be leading and facilitating. So that was a great, you know, we'll be able to move into that climate-ready fisheries and that topic certainly came up throughout the course of today as well.

So I think, you know, besides getting into like nitty-gritty things, I think that probably provides a pretty good overview of today, but I welcome, I welcome and open the floor if you thought that something else, you know, really stood out as an overarching topic today.

(No response.)

CHAIR DAVIS: Okay, good. So let's see. So we're going to go down, let's see where our destination is, find the right page here. So we're going down to a reception that will require you to maybe share a Lyft or Uber ride down to the Sportfishing Association of California.

It's down at the America Cup Harbor, is that correct? Okay, that's great, and it's -- the reception is between 5:30 and 7:30. There's also some planned things during that time together.

For tomorrow, we have a field trip that Sarah has helped to organize, so very excited about that. Who won't be coming on the field trip tomorrow afternoon? We just need to know that.

(Off mic comment.)

CHAIR DAVIS: Except for Janet and Sam, yeah. But all the MAFAC and -- okay, super. That's great. Heidi, are there any other housekeeping things that you'd like to go over?

(Off mic comment.)

CHAIR DAVIS: Okay, that sounds good.

(Off mic comment.)

CHAIR DAVIS: That sounds great -- oh Donna, that's great. I didn't see you there. Okay.

(Off mic comment.) PARTICIPANT: Donna, we're due at 6:00, right?

MEMBER KALEZ: What?

PARTICIPANT: We're due at 6:00?

MEMBER KALEZ: As soon as you get there.

CHAIR DAVIS: Yeah. 5:30 is the earliest.

MEMBER KALEZ: So as soon as you get there is good.

(Off mic comments.)

CHAIR DAVIS: Okay. So I think this officially wraps up Day 1, and you'll see you all this evening.

(Whereupon at 4:57 p.m., the above-entitled matter went off the record.)

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C E R T I F I C A T E

This is to certify that the foregoing transcript

In the matter of: MARINE FISHERIES ADVISORY COMMITTEE
SPRING MEETING

Before: NOAA

Date: 05-31-23

Place: San Diego, California

was duly recorded and accurately transcribed under
my direction; further, that said transcript is a
true and accurate complete record of the
proceedings.



Court Reporter

NEAL R. GROSS

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