Chesapeake Bay Program
Science. Restoration. Partnership.

Joint Scientific Technical Assessment and Reporting (STAR) Team & Strategic Engagement Team (SET) Meeting

Thursday, September 26th, 2024

9:30 AM – 11:30 PM

Theme: Collaboration leading to social and environmental change.

Meeting Materials: Link

This meeting was recorded for internal use only to assure the accuracy of the meeting notes.

PARTICIPANTS

Gabriel Duran (CRC), Breck Sullivan (USGS), Gary Shenk (USGS), August Goldfischer (CRC), Amy Handen (EPA), Larry Sanford (UMCES), Ann Foo (UMCES), Mark Nardi (USGS), Alex Fries (UMCES), Doug Austin (EPA), Emily Young (ICPRB), Bianca Martinez Penn (CRC), Jake Solyst (Alliance for the Chesapeake Bay), Katherine Brownson (USFS), Faren Wolter (USFWS), Ruth Cassilly (University of Maryland), Kristin Saunders (UMCES), Greg Allen (EPA), Ashley Hullinger (PA DEP), Ken Hyer (USGS), Rachel Felver (Alliance for the Chesapeake Bay), Doug Bell (EPA), Bill Dennison (UMCES), Natalie Hall (USGS), Jamileh Soueidan (CRC), Britt Slattery (NPS), Catherine Krikstan (UMCES), Greg Barranco (EPA), John Wolf (USGS), Alex Gunnerson (CRC), Bruce Vogt (NOAA), Matthew Kierce (IWLA), George Doumit (DNREC), Erin Sonnenburg (CRC), Kaylyn Gootman (EPA), Meredith Lemke (CRC), Julie Reichert-Nguyen (NOAA), Kelsi Furman (NOAA)

ACTIONS

- ✓ Rachel Felver will share the description of the network science GIT funded project with STAR and meeting participants.
- ✓ Peter Tango will share the Chesapeake Bay case study report.
- ✓ Kelsi Furman will share the Puget Sound case study results with STAR once they are ready.
- ✓ Kaylyn Gootman invited Kelsi Furman to present her project to the EPA Geographic Programs Science Subgroup.
- ✓ STAR will continue to host discussions with SET.
- ✓ Explore the possibility of Faren Wolter giving her presentation on trust ecology to CBP leadership (such as at a Management Board meeting).

- ✓ GIT 6 will follow up with SET to collaborate and coordinate regarding SET's network science GIT funded project and GIT 6's planned asynchronous learning modules.

MINUTES

9:30 – 9:35 AM Welcome, Introductions & Announcements – *Ken Hyer (US Geological Survey) and **Kimberly Van Meter** (Penn State) - STAR chair and vice chair, **Breck Sullivan** (USGS) STAR Coordinator, **Peter Tango** (USGS) CBP Monitoring Coordinator*

Ken introduced and framed the theme of the meeting as being about capacity, but with a different angle than STAR usually takes. Ken also introduced the Strategic Engagement Team (SET), a CBP team focused on increasing capacity for communication, engagement, social science, diversity, stewardship and helping people do their work more effectively.

Breck explained that STAR, as a science support team, coordinates modeling, monitoring and analysis, and aims to address science knowledge gaps, and reach out to partners and networks to increase capacity to address those challenges.

The STAR and SET leadership introduced themselves. Amy Handen (EPA) represents the social science component of SET. Rachel Felver (Alliance for the Chesapeake Bay) is the Communications Director at the Chesapeake Bay Program (CBP), and for SET represents communications and helps with outreach and engagement. SET was born out of the communications workgroup and a small local action team. Bianca Martinez-Penn (CRC) introduced herself as the communications staffer and staffer for SET. Marisa Baldine (Alliance for the Chesapeake Bay) and Laura Cattell Noll (Alliance for the Chesapeake Bay), also leaders of SET, were unable to attend today's meeting due to attending the Local Government Advisory Committee (LGAC) meeting.

Announcements:

- Clean Water Cohort Dry Runs – October 21st from 10 AM – 12 PM. Please reach out to STAR coordinators for calendar invitation.

Upcoming Conferences, Meetings, Workshops and Webinars

- Restore America's Estuaries (RAE) 2024 Coastal & Estuarine Summit – October 6-10, 2024, Washington, D.C.
- Watershed Forum – October 18-20, 2024, Shepherdstown, West Virginia. Integrated Trends Analysis Team (ITAT) session will show off the Watershed Data Dashboard and ITAT's Tributary Summaries (under "projects and Resources") for how it can help be used as a tool for those in different organizations.

- American Planning Association (APA) Maryland 2024 Conference – October 22-24, 2024, Ellicott City, Maryland.
- American Geophysical Union (AGU) 2024 Fall Meeting – December 9-13, 2024, Washington, D.C.
- 14th National Monitoring Conference – March 10-12, 2025, Green Bay, Wisconsin.
- The 35th Annual Environment Virginia Symposium – April 8-10, 2025, Lexington, VA.

9:35 – 9:45 AM *Debrief from the August STAR Meeting Menti Poll Results*

Presenter(s): *Bianca Martinez Penn (SET Staffer, Chesapeake Research Consortium)*

Description: In the STAR August Meeting, participants took a poll asking what challenges they were having with audiences they're trying to reach, and what topics around engagement they want to discuss. SET leaders will report on and debrief the responses of this poll and touch on the value of building capacity for communication and engagement to assist Goal Implementation Teams (GITs) in their goals.

Audiences participants wanted to work with included state agencies, NGOs, CBP leadership, decision makers, resource managers, environmental scientists, the agricultural community, volunteers and local conservation groups. Audiences they currently reach are state and federal agencies and CBP leadership.

The biggest challenges shared in the poll were lack of capacity to do outreach and lack of relationships with intended audience.

Goals when reaching out to audiences included support on workgroup initiatives, providing advisory support, asking for feedback and participation in work plan actions, connecting partners with similar interests, informing decision makers so they can make science-based decisions and broadening perspectives and fostering discussions.

SET can help people with: trainings, making connections and developing communication products, providing examples of successful strategies, providing opportunities with underrepresented groups, and providing points of contact to work with or ask for help.

Discussion:

Breck noted the audiences that people wanted to engage with according to the poll are the same people STAR wants to share CBP science with.

Amy Handen (EPA) said when talking about building capacity the conversation is typically about data or tools needed. SET thinks about it as how to work together better, and what kind of tools are needed to do that. There are some groups that have done successful work in the network space, specifically environmental literacy – they've created an environmental literacy network. The Stewardship GIT created a visual infrastructure for stewardship networks. SET thought it would be timely to invest in the partnership's learning about networks, characteristics of

successful networks and how to work better together. There's a book that discusses this called Impact Networks, and a documentary based on this book that will be shown next. SET also recently received GIT funding for a project to help the partnership grow in their network skill set.

9:45 - 10:05 AM *Impact Networks, The Documentary (converge.net)*

Presenter(s): *Converge*

Description: This film explores the patterns impact networks follow to accelerate learning and collaboration leading to social and environmental change. We hear the voices of six accomplished network leaders behind some of the most successful large-scale collaborative efforts around the globe-from land stewardship to migrant rights. Their stories reveal that although every impact network is unique in its focus and composition, all are remarkable similar in their approach.

10:05 – 10:50 AM *Documentary Guided Discussion*

Presenter(s): *SET Leaders*

Description: SET Leaders will help in facilitating a guided discussion on the topics covered in the Documentary. Discussion questions will be shared to assist in initiating conversations on network building.

Discussion Questions:

1. *What stood out to you from this video? Was there anything in the video that surprised you?*
2. *Did this video change your idea of what a network is?*
3. *What would it mean to you to apply the network mindset shared in this video to our work? What would change? What would stay the same?*
4. *What type of networks are you currently working in? Are you applying any of the principles discussed in the video already?*
5. *If we were to think of ourselves as a network, how would we characterize the common purpose that would bring us together? What can't we do alone that we can do together?*
6. *Where have you seen the power of trusting relationships in your work? What ideas do you have for strengthening trust?*
7. *Are there areas in the partnership that are better suited to this kind of approach versus others?*
8. *Are there examples of work you have done that adheres to the network mindset? (Adaptation – Julie; Stewardship Network – Britt, etc.).*
9. *What does this mean for us going forward? How can this affect our work?*

Natalie Hall (USGS): That was beautiful. How does what they are describing differ from what we are currently doing? What is the factor we could work towards that would make us more of an network?

Amy Handen (EPA): That's the million-dollar question. At first glance, you think this is what we do. However, there are some missing pieces. There are opportunities for us to grow in different ways. I don't want to answer your question now, but want to hear others' reactions to that question.

Greg Allen (EPA) in the chat: It would be interesting to review the governance structure for the networks featured in the video.

Ken Hyer (USGS): This concept of a hierarchical approach vs distributive approach - both have important pieces. We are bureaucratic. But so many pieces of the network story show how the power of a network and distributive model leads to a better place than the hierarchical approach. We have pieces of both in the partnership – need for balancing it or getting the best pieces of each.

Amy Handen (EPA): I liked in the video how they talked about how a network is distributive. It doesn't remove the hierarchical organizations of each of the individuals in the network.

Kristin Saunders (UMCES): I'd read the book prior to this meeting but hadn't seen the movie. I think about Carin Bisland's message about holding two truths. The partnership has hierarchical organizations. The responsibility is on them to deliver certain outcomes with federal and state dollars. The pressure of that accountability tends to keep people in the safety of their hierarchical structure, with the illusion they can control anything. The hierarchical tension shows up in many ways in the partnership and sometimes gets in the way of achieving the shared vision we have. I liked the words "audacity, courage, breaking systems that don't work" in the narration. I think many of those words are anathema to bureaucratic institutions. There is a tension that plays out in this partnership. How do we take the best parts of what both have to offer? (Hierarchical and networks.) It's hard to change the organizational culture, and hard for people to imagine handing over control or expectations but it's really the only way we'll get it done.

Faren Wolter (USFWS): I would think about not are we or are we not a network, but is what we're doing working? Are we meeting identified shared goals and outcomes and if not, why not? I think we get hung up on if it has to be a hierarchical or decentralized structure, and it's a mix. When talking about what it means to collaborate, that's how we work together. It's been used as a catch-all phrase, but in my world that is a scale from compete to collaborate and beyond. This trust piece they mention in the video – there's an inverse relationship between trust and power and control over the outcome. That's a challenge in the hierarchical space. We have to give up control and power over the outcomes and how it gets done. Because there is a regulatory requirement around some outcomes there's not a lot of wiggle room. But in the

community engagement space there's a lot of room to do anything. We've started the same conversation with Habitat GIT and the partnership and accountability team.

Kaylyn Gootman (EPA): I gravitate to what Kristin was saying. We are a long historic partnership and a lot of history and knowledge of things that work well. I think about how we do our business. We got thrown into a hybrid world. We tend to take those things of how we network, how we operate as business as usual, for granted. There's a lot to be said for going out in the watershed and meeting people face to face. I think that is important for trust building and relationship building.

Greg Allen (EPA) in the chat: How do distributed partnerships make decisions? We could have a STAR/GIT 6 joint project to analyze structure and governance and what makes other networks work well and how could we strengthen the Bay Program network.

Kristin Stewart (UMCES) in chat: @Greg, I was thinking about GIT 6, governance and how we might utilize an intentional reference to the networks as a way to be more inclusive and representative of more voices without necessarily making people part of our "organization".

Katie Brownson (USFS): I want to reflect on the power of the networks we already have at the CBP. Like the forestry workgroup is a network of networks, pulling together state partners who all have their own networks. I think there's some work we can do to make sure we're being more inclusive and maximizing the full potential, but it seems like a lot of the tension arises and we go into hierarchical framing when we try to set priorities and allocate resources across the whole partnership. I hope there's opportunity to consider alternative models as we go into Beyond 2025. Recommendations are to think about how to operate better as a full partnership.

Bill Dennison (UMCES): Something that resonated with me is we move at the speed of trust. It occurs to me that it's harder now to build and maintain trust with this mostly virtual relationship we have. We're not sharing meals or stories. How could we intentionally create trust building exercises to move forward? The fact that the states are drifting from the partnership – we need to rebuild this trust.

Amy Handen (EPA): Our GIT funded project will help us address these challenges and opportunities.

Greg Allen (EPA) in the chat: Stephen MR Covey "Leadership at the Speed of Trust"

Faren Wolter (USFWS) in the chat: The "Connect, Innovate, Scale Up..." book I added above has multiple examples of different types of successful governance structures and decision-making processes to accelerate change.

Kristin Saunders (UMCES) in the chat: @Katie, very good point and the inclusion of additional networks may feel to some like we are further complicating our structure and there is some sentiment to simplify and be more efficient (again, a natural tension showing up in approaches).

Britt Slattery (NPS) in the chat: We had a book club around Impact Networks for several months, spurred by NOAA folks who have been working in the networks space. We could do it again - I learn new bits at every discussion.

Greg Allen (EPA) in chat: Can you share the scope description of that GIT project?

Rachel Felver (Alliance for the Chesapeake Bay): Yes, will do after the meeting.

Ken Hyer (USGS): As we think about Beyond 2025, we say we need to accelerate progress, but at the same time, we need to build and enhance trust and networks. We can only move as fast as we can build this partnership trust. It sounds great at a STAR meeting but at a Management Board (MB) or Principals' Staff Committee (PSC) meeting they may question what we're doing.

Bill Dennison (UMCES): Face time good but need to make sure it's not all structured face time. Breaks and lunch are important.

Faren Wolter (USFWS): Set trust and connectivity/relationship goals, with measurable benchmarks.

Kaylyn Gootman (EPA): When attending a meeting or going to a conference, stay out a little later if possible.

Breck Sullivan (USGS): Do we all have the same mission and vision? There were moments in Beyond 2025 when we started to get to that but said we'd discuss it at another time. We're at the point of discussing phase 2 and what actions to take to meet the recommendations but we still haven't come to a consensus on what our actual vision is.

Amy Handen (EPA): The phrase that impacted me was what can we do together that we can't do alone? What can we only do together that we can't do as individual organizations or entities?

Rachel Felver (Alliance for the Chesapeake Bay): If you want to go fast, go alone; if you want to go far, go together.

Ken Hyer (USGS): Maybe a message in the movie was we all have to have a common purpose. But we all have different missions and roles, and we come together to achieve more together. Is it just framing the vision and common purpose at a high enough level that we all are working towards a common purpose but with distinct and separate roles?

Britt Slattery (NPS) in the chat: What gets tricky if there are a variety of (and potentially conflicting) ideas of the vision.

Faren Wolter (USFWS) in the chat: From Partnership Impact Model (shared image below).

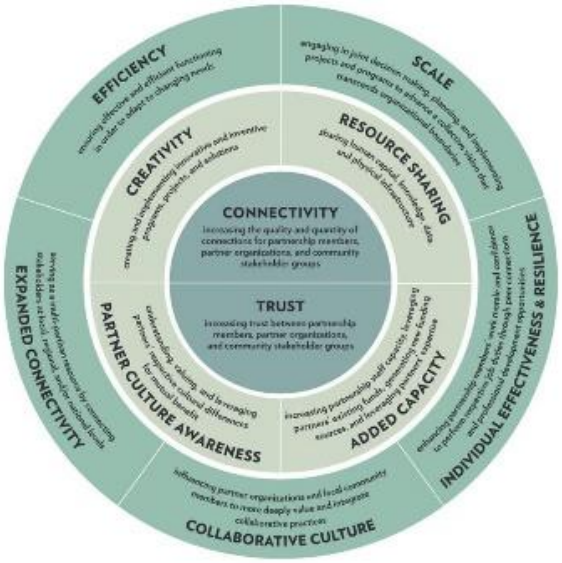

Figure 1: From the Partnership Impact Model

Image description: A circle diagram with 3 layers. Connectivity and trust are in the center, and the next layer of the circle lists creativity, resource sharing, added capacity, and partner culture awareness. The outside layer lists efficiency, scale, individual effectiveness and resilience, collaborative culture, and expanded connectivity.

Greg Allen (EPA) in the chat: GIT 6 has a research plan to measure trust across the CBP org chart. However, we have not gotten interest from past leadership rotations so it ended up on the back burner. We had identified a survey instrument and got permission to use.

Peter Tango (USGS): Bringing talents together is a lot like bringing an all star team together. You have the greatest people and expertise but you're under a new coach and work together under the coach's vision.

Alex Gunnerson (USGS) in the chat: Perhaps common incentives is a helpful way to frame things, and we need to enhance alignment in purpose with our incentives?

Faren Wolter (USFWS): I'll share the video I shared with the Habitat GIT. It uses the visualization of a flock of birds. They're all flying in the same direction but not exactly the same way. How we get to the same destination may be different. I can lead people through a structured conversation of learnings from it.

Rachel Felver (Alliance for the Chesapeake Bay) in the chat: A former employee of mine described the partnership as everyone brings their favorite dish to a pot luck and EPA provides the place for the meal and the dishes, settings, etc.

Kaylyn Gootman (EPA): Every part of the watershed has a different "why". Recognizing those differences while still coming together for common goals is hard. Maybe the why of New York is different from the why of Hampton roads, Virginia. How that plugs into the common goal isn't always going to be easy to follow.

Amy Handen (EPA): We hear that we need to understand communities, work with communities – I don't think anyone would say we only care about the Bay, we care about ourselves. Maybe the Bay is a secondary benefactor of what we do. Maybe a shift is needed in that we are primarily focused on communities and ecosystems.

Peter Tango (USGS): I can't forget a wildlife management professor saying your job will be 90% people management and being involved out there for people, not wildlife management. Remember who you're there for and working for.

Faren Wolter (USFWS) in the chat: A colleague and I gave a trust ecology presentation (type of trust and ways to assess each) to the Partnerships & Accountability Team and it was well-received. Wonder if leadership would be open to hearing it, too?

Rachel Felver (Alliance for the Chesapeake Bay): Future MB agenda topic?

Greg Allen (EPA): It's cool to see organizational science here in STAR. So much potential here. I mentioned a possible joint project with GIT 6 but let's look at the scope of the network science GIT project and make sure anything we do would add value. We love trust ecology. Git 6 has a new project that is asynchronous learning modules for teams. We want to talk to you.

Faren Wolter (USFWS): Let's talk about this - we have been having some similar challenges.

Alex Gunnerson (USGS): Expanding on my chat comment - maybe it's not about ensuring everyone has the same incentives but aligning incentives. Maybe centering it on incentives is a helpful way of thinking about it in addition to purpose.

Julie Reichert-Nguyen (NOAA): This makes me think of challenges we're facing in the climate adaption space. We need collective action to make an impact. It's too big of a problem to tackle alone. I look at the section of the video where they talk about hierarchical structure vs networks. When I think about CBP, I think we fall more into the hierarchical structure. Maybe within the GITs there's more of the network mentality happening. How can we bring in network mentality into CBP structure where we can be comfortable to be adaptive and emergent? There are elements of it we try to bring in like the Strategy Review System. But the core of how CBP operates is a hierarchy. How do we do our work especially around climate and diversity, equity, inclusion, and justice (DEIJ)? Where do we strike a balance between hierarchy and network? In federal spaces we need hierarchy due to legislation being passed and regulations that are very directive. But collective action is how we'll get a big impact.

Amy Handen: Responding to Alex's comment, we all want to create spaces where people are active and want to join. I think it's that shared sense of purpose and space that is working together to achieve that purpose. When a group is not working together to do that, I think that incentive is lost. At SET, we hear challenges with a workgroup or GIT that's not engaged and struggles with participation. Our response is, what kind of space are you creating where people feel like there's something in it for them? That shared of purpose would coalesce towards what's in it for everyone.

Kristin Saunders (UMCES) in the chat: It's heartening that so many folks showed up and participated in this topic discussion.

Ken Hyer (USGS): Is partnership a synonym for network in this case?

Faren Wolter (USFWS): No.

Ken Hyer (USGS): We need to keep bringing this topic back to STAR and maybe bring it to the Management Board.

Faren Wolter (USFWS): Using the term partnership vs network depends on what you're trying to do, and things can be embedded in each other. There are varying levels of engagement. Cooperating, coordinating, collaborating. It's more than just people coming together. We're doing network analysis in national pollinator center. I dream of doing a social network analysis around the Bay partnership.

Kristin Saunders (UMCES): One thought: as we move into phase 2, it will be incumbent on all of us to watch for the "what is in this for everyone" as there may be temptation to contract the number of goals and outcomes in order to simplify. We should be aware and tuned into potential unintended consequences that will alienate partners who actually can help us achieve our vision.

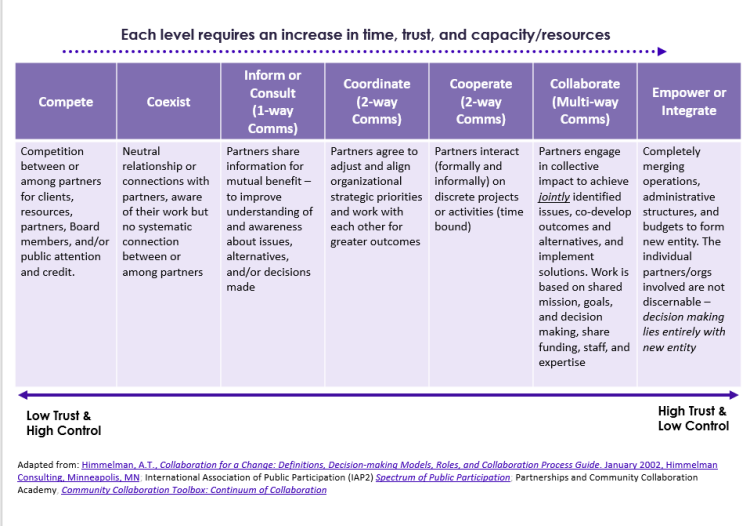

Figure 2: Spectrum of collaboration

Image description: A chart showing different levels of engagement with partners, ranging from low trust and high control (compete, coexist, inform or consult) with coordinate in the middle, to high trust and low control (cooperate, collaborate, empower or integrate).

Greg Allen (EPA) in the chat: The CBP Partnership is the neural center of the network, but tendrils advance from the center and those tendrils grow when we move people from being uninformed to being active in the effort.

Amy Handen (EPA): For those of you who have the ability to influence the future of our work, keep this approach in mind.

Rachel Felver (Alliance for the Chesapeake Bay): Reach out to us if you want to be on SET meeting invite.

10:50 – 11:30 AM Leveraging knowledge diversity toward more effective and equitable fisheries and biodiversity management.

Presenter(s): *Kelsi Furman (National Oceanic and Atmospheric Administration, NOAA; formerly Smithsonian Environmental Research Center)*

> *Description: This project aims to understand how diverse marine resource users interact with and value marine biodiversity, to capture their diverse knowledge and perceptions of management approaches, and to examine the relationships between social-ecological*

system components. To do this, we use participatory modeling to combine expertise from managers, technical experts, and resource users and rights holders, including commercial and recreational fishermen, oyster farmers, ecotourism operators, waterfront homeowners, and local and Tribal leaders.

Presentation summary:

Kelsi Furman was a Postdoctoral Researcher at SERC, and just transitioned to a position with NOAA. Today she is presenting on a project from her postdoc at SERC.

The goal of this project is to operationalize the functional roles of biodiversity. To do that, the team identified key components of biodiversity resilience. The project aims to understand the interactions between biodiversity and social and economic resilience, to understand how to better inform practical and equitable decision making for U.S. marine management.

The core research questions are: 1. what aspects of biodiversity, ecosystems, and their interactions do U.S. marine resource managers and users consider important for making decisions, particularly those mandated by law or program policy? Are important aspects missing? In short, what do they need? 2. What types of biodiversity (species, habitats, interactions) are needed to sustain functional, resilient U.S. marine ecosystems, based on best scientific evidence? 3. Do common themes emerge regarding how biodiversity affects ecosystem functioning and resilience across U.S. marine management use cases, and across spatial scales? And 4. Can stakeholders' and managers' conceptual models of biodiversity-function links be integrated with scientific data in existing decision support processes, or are new frameworks needed?

The team took a case study approach to the project with 3 regional case studies: The Northern Gulf of Mexico, Chesapeake Bay, and Puget Sound (which is still in progress). These were chosen because they were comparable in terms of scale and ecological dynamics, but had different social-ecological system dynamics, and are important regions for marine ecosystem services in the U.S.

The researchers did a series of individual interviews and then workshops with people who work in marine management and aquaculture, academics/researchers, Tribal members, and other community members in each region. The method used for the project was Fuzzy Cognitive Mapping. The researchers built system models to understand how individuals perceive their system dynamics from a social-ecological perspective, and to capture knowledge from experts and community members. Kelsi gave an example of how the team makes the Fuzzy Cognitive Map. They start with high level themes of Marine Resource Management, Biodiversity and Marine Resource Users and ask participants to bring in specific concepts related to their local system dynamics. The team asks if the participants see the different components as related and if it's a positive or negative relationship, and what the weight of the relationship is. Categorical weights are then transformed into numerical weights, and then transformed into a software called Mental Modeler. Scenario simulations are then run to see how a change in the system

would have an impact on the other social-ecological system dynamics. This is used to talk to managers about trade-offs of different management approaches and resources, and understand who will be the winners and losers in different interventions.

The team asked study participants how they define biodiversity and what they see as key aspects of biodiversity, what ecosystem services rely on biodiversity in their system, what stakeholders rely on biodiversity, whether biodiversity was explicitly considered in marine resource management and if so through what management approaches or policies, and are there approaches to managing biodiversity that would improve the delivery of ecosystem services in the system. In the initial interview protocol they didn't include stressors but that became a strong focus of interviews and was hard to avoid. A lot of marine resource management is designed to be reactive to stressors so they ended up having a bin for stressors in each regional model. They also developed a conceptual framework for biodiversity which they used for framing the interviews. The framework was divided into 4 bins of species diversity: habitat forming species, species of conservation concern, harmful organisms, and key food web species.

The team built a base model using the interviews – from over 90 interviews they built around 70 mental models. They heard from study participants that the traditional definition of biodiversity is synonymous with species richness, but that is oversimplified and there is a need to distinguish between overall species diversity and native species diversity. Range shifts, distribution shifts and invasive species came up frequently as factors that could increase the diversity of species but potentially not be a positive. Workshops were conducted with the base model for each region. The core focus of the workshops was to understand the social and economic benefits they receive from these components of biodiversity. Workshops had 20-30 participants, divided into focus groups. Focus group models were aggregated into community models. From each of the workshops the team made workshop summary reports, which were shared back with workshop participants for feedback and input. The team also made management tradeoff examples, showing the potential benefits of different management actions as well as the potential downsides or unintended consequences.

In the Gulf of Mexico, NOAA developed a socio-ecological systems framework for their Integrated Ecosystem Assessment. For Kelsi's project at SERC, Mobile Bay, AL was a focus area. Alabamahas been described as "America's Amazon" as it has more species per square mile than any other state. Gulf of Mexico models emphasized recreational fishing was a large area of focus, as well as subsistence fishing. Charter fishermen felt there was a responsibility to shift from a scarcity mindset to a conservation ethos. They shared concerns around regulations and restrictions on freedom to fish, and wanted to emphasize bottom up approaches and what they're already doing to support conservation in their community. Nearshore habitat as nursery habitat to support fish availability was a big focus, and habitat restoration, especially using living shorelines. The importance of recreational fishing for identity and sense of place was emphasized. Key takeaways included:

- Biodiversity creates freedom of choice for resource use and enables adaptability to system changes. Additionally, it provides socioeconomic benefits tied to cultural identity, quality of life and well-being, and livelihoods.
- Management approaches have trade-offs between biodiversity conservation and access to biodiversity by different resource users.
- Coordination between management agencies can ensure that decisions consider input from and impacts on other sectors, regions, and resource users. Focusing on biodiversity can reduce unintended consequences of agency siloing that create inequities in biodiversity access.
- Conservation is more successful when bottom-up management approaches leverage community initiative to incentivize human behavior change.

From the Chesapeake Bay workshop, there was a strong emphasis on water quality management, including nutrient management in collaboration with other industries such as the agricultural industry. The struggle to conceptualize and operationalize ecosystem-based management was also brought up. Something the workshop had in the Chesapeake that they didn't have in the Gulf of Mexico was Tribal representation. None were federally recognized Tribes, and the team heard a lot about the need for treaty rights in the Chesapeake and the importance of Indigenous rights and more of a say in decision making processes. One phrase that came up was balancing access with conservation. Key takeaways from the Chesapeake Bay workshop included:

- Biodiversity is integral to community identity given its historical and cultural ties, benefits to human health and well-being, value for recreational opportunities, and necessity for livelihoods.
- Benefits of biodiversity to people are strongly impacted by upstream activities (e.g., development, agriculture, dams), pollution, and habitat degradation. Additionally, species' range shifts and invasive species are altering ecosystem dynamics and function.
- Addressing jurisdictional challenges, such as conflicting policies, complicated permitting, and a lack of coordination between agencies, can reduce unintended consequences of management interventions including inequitable access to biodiversity and unwanted human behaviors.
- Decision-making should be inclusive of local and Tribal communities and should prioritize a balance of biodiversity preservation with access to increase stewardship and conservation success.

After the Gulf of Mexico and Chesapeake Bay case studies the research team looked at commonalities and differences between the two. Both case studies highlighted:

- The impact of invasive species and range shifts on local ecosystem dynamics and socioeconomic benefits
- A need for management plans for historically unmanaged forage fish
- The need for coordinated, inclusive, and proactive (rather than reactive) management to ensure benefits for future generations
- Biodiversity provides a multitude of benefits for society, many of which have cultural significance, but can also produce challenges

- More biodiversity attracts more people which can increase stressors
- Stewardship and balance are essential for sustainability

The final case study is Puget Sound, and they are in the process of doing this case study right now. They have done individual interviews, and the workshop will take place in October. The Puget Sound Partnership built a series of indicators focused on managing for biodiversity. Something they heard a lot about from the Puget Sound interviews is that biodiversity is managed for at the local and state level but not at the federal level. Tribal groups in Puget Sound have co-management rights so the Tribal dynamics are very different than that in the Chesapeake. Important industries in the region include oyster, mussel and geoduck farming, and the dive industry and whale watching industry. Salmon and Southern resident orcas have huge cultural significance in the region and are facing many stressors.

Ultimately the three case studies will be used to inform evidence-based decision making at a larger scale.

Discussion:

Kristin Saunders (UMCES) in the chat: We need a "fuzzy cognitive mapping" exercise to show how the pieces of the 2014 agreement work together and what tweaks to the outcomes or goals would result in change to the system and understand tradeoffs.

Faren Wolter (USFWS) in chat: Sense of place & identity box - YAY!! I love path modeling, thank you for sharing this great project!

Kristin Saunders (UMCES) in chat: This research is a great example of how to center people and living resources and the importance of doing so.

Kaylyn Gootman (EPA) in the chat: This is fantastic work. I'd love to invite you to present in the not too far future to the EPA Geographic Programs Science Subgroup if you are interested Kelsi! Especially, when you have findings to share out from the Puget Sound case study too!

Breck Sullivan (USGS): Is the workshop summary report for the Chesapeake Bay available to share?

Kelsi Furman (NOAA): Yes.

Peter Tango (USGS). I have it and can share it.

Kelsi Furman (NOAA): Eventually we will have those documents on the Smithsonian website.

Ken Hyer (USGS): I love those tables of management tradeoffs. Not everything is a win.

Kaylyn Gootman (EPA): This is really great research. I look forward to digging in more when things are published.

Breck Sullivan (USGS): How did you initiate those workshops?

Kelsi Furman (NOAA): It was actually hard in in the Chesapeake even though the Smithsonian is located there. We hadn't worked in the Chesapeake. We had great luck with chain referral approach. We found folks in the District of Columbia (D.C.) higher level offices and got recommendations. Having these introductions was critical and being recommended by someone they already knew helped people participate. For everyone who came to our workshops I either did a formal interview ahead of time or did a sales pitch for the project on a phone call and why it was meaningful for us to have their perspective in the room. We also paid people to come and provided travel support through our grant from the Lenfest Ocean Program to SERC.

Peter Tango (USGS): Regarding the Puget Sound model, I noticed one species was green crab. In the 1800s we moved shad across the country and now there are millions of shad running up the Columbia River, enough that they have difficulty counting the salmon. Do you encounter that in your work and what some of the key species are and how that will compare?

Kelsi Furman (NOAA): We heard a lot about invasives in the Gulf and Chesapeake but less in the Puget Sound. We had to circle back to that in interviews actually. For green crabs we heard it's an area of concern but not a big issue yet. They're keeping an eye on it and saw it in some oyster farms. They've had success in citizen science events with people coming and removing them. It's working well and they're catching it early. They've actually used Chesapeake and other regions as examples of what happens if you don't catch it quickly. They've had a lot of success in mitigating green crabs at the onset.

11:30 AM Adjourn

Next Meeting: Thursday, October 24th, 2024, from 10 AM – 12 PM