**Interviewer**: Don’t worry, I won’t. Someone recently… I send around my Smithsonian Zoom and someone recently pointed out that the fine print on our Smithsonian Zoom doesn't comply with our IRB, so it says that if you’re on our Smithsonian Zoom, you’re like giving up your right to be recorded and for them to use it for media. And I was like, I had to send this person all of our IRB materials and I was like that is not true for this I promise you. Not gonna post this online. Okay, so just to start… I know a little bit about your research but just to start I was hoping you could tell me a bit about your area of expertise and your research.

**BD050**: Okay, yeah, so obviously I have a hard time describing myself in simple terms but basically I’m a coastal ecologist. My background is in essentially fish habitat ecology and much of my–probably relevant for this–research is related to estuarine shorelines and marshes, particularly restoration, nature based approaches to coastal protection, also turn(?) living shorelines, essentially the restoration–or I’ll say the ecological function and trajectory of those restoration projects, and I also do a lot of work on social-ecological systems, so I don't restrict myself to the ecology. I also integrate social sciences into my research.

**Interviewer**: Okay, great. So, great thank you… super helpful. So I’m gonna go ahead and share my screen. Can you see the Mental Modeler software?

**BD050**: Yes.

**Interviewer**: Okay great. So, just to give you a little bit more background on our project. Like Emmett said in the email to all the \_\_ folks, the really high level goal of this project is to understand the role of biodiversity in marine resource management. So, understanding if we are directly or indirectly managing for biodiversity and if not, what approaches are needed in the future. I mean ultimately the goal is to understand what aspects of biodiversity managers are thinking about when they make their decisions, what data they need or what data gaps they have to help inform those decisions, and then understand if the aspects of biodiversity that managers are thinking about align with the aspects of biodiversity that different resource user groups care about and rely on for different ecosystem services. So, of course, those questions are really lofty, really broad, and so to help answer them, we’re taking a case study approach. So, we have three case studies, one is in the Gulf of Mexico, so we just did a workshop down in Mobile, Alabama hosted at the University of South Alabama with Steven Scyphers. And then our second case study is here in the Chesapeake and we’re planning a workshop right now for April at SERC and then our third case study will be this fall in the Salish Sea, so we haven't quite started that one yet. And so to answer those questions on a more localized level in each of those case studies, I’ve been doing individual interviews, kind of like I’m gonna do with you today, to build these mental models, and I’ve been doing them with researchers, you know, government, academic, practitioner researchers as well as regional managers and resource users, and so we’re not specifically focused on one stakeholder type. We’re talking with fishermen across all sectors, waterfront home owners, tourism operators, aquaculture farmers, and really like I said, the goal is to understand what aspects of biodiversity each of those groups value and then how are different management interventions impacting access to biodiversity for different resource users in different ways and what are the tradeoffs of certain options for management. So, we’re doing individual interviews with folks to capture their individual mental models of biodiversity in their social-ecological system, and then in the workshops, we convene these different types of stakeholders with managers and researchers to use this tool in a collaborative setting to examine more localized, specific social-ecological dynamics in each of our case studies and then to understand those tradeoffs like I said for different user groups. That was kind of a lot but that’s like our overarching goals of the project. Do you have any questions?

**BD050**: Well, no I was just gonna say, I mean your research aligns very closely with a lot of the work that I’ve been doing in shoreline systems and so I’m excited about your work. So, you know, for instance, one of the things we have done is a review of the policies related to estuarine shorelines for essentially management of those shorelines and what are the primary missions of different agencies and priorities and their decision making, right? And of course the term biodiversity is not implicitly in any of the policies and in concert with that we’ve done a lot of work surveying different shoreline stakeholders, shoreline managers, shoreline decision makers, people involved in shoreline management and restoration, sort of their perceptions of these systems. So I think there’s a lot of synergies in some of the work I’ve been doing on shorelines and what you’re doing so that’s exciting.

**Interviewer**: I was gonna say I think we need you on our team. Those are all like core themes of our project. Like very early on, one of the things I heard in one of my very first interviews with someone from NOAA is that none of the core federal mandates use the term biodiversity exactly like you just said and so then this spiraled into us kind of brainstorming if there’s potential to do a formal policy analysis to kind of highlight that but then what we’ve started hearing–I don't know if you’ve seen the same–is that biodiversity is… that term is used and it is managed for and considered on a local level but not at the federal level and so that’s where it's actually being managed for, and so then, you know, that kind of opens this whole can of worms of how do you actually analyze that and depict it properly and accurately, and so we’ve kind of put that on the back burner for now, cause running three case studies at once is already a lot, but I would love to hear–I know my team too would love to hear more about that cause Emmett and then–do you know Gabrielle Cononico at NOAA? She’s one of our other PIs.

**BD050**: I don’t. I don't think I know her.

**Interviewer**: She’s like very interested in doing some sort of policy analysis like that but we haven't quite gotten to it, so that would be really cool to talk more about that. Cool, okay. So, like you also just said, one of the other things that we learned very early on in this project is that there isn't particularly a consistent definition in biodiversity, different people think about biodiversity in different ways, and of course you can measure it in multiple different ways, and so to start, I’m hoping to hear what you think about when you think about biodiversity and what you see as the key aspects of biodiversity.

**BD050**: A great question, let’s see. I mean, so as a scientist, I guess, I tend to think of biodiversity in terms of diversity of different levels, right, so the species level, genetics, habitat, whatnot. And I think in terms of diversity, I also think of it in terms of it being–it’s not just about the actual count and number but it’s about the connections, right, between different populations and habitats, maintain that diversity. Does that make sense?

**Interviewer**: Okay. Yeah that does make sense. So as you talk, we’ll come up with a concept list like I’ve started to do here and then we can start to build out the connections between those components, and so I’m gonna probably start drawing some relationships as you talk but then at the end once we have our concept list finalized, we’ll go through and fill in all the other relationships that you see in the system. But that was a really good example right there, so I have species, habitat and genetic diversity, but for the latter part about the connection between species and habitat, I’m trying to think through if that should be a separate concept or if really what you’re getting at is like the relationship between habitat and species diversity in that example.

**BD050**: Yeah well I guess both. Yeah I think you're right, the connection piece, it comes later as a means of maintaining biodiversity, yes. So when I think of biodiversity in general, you know, I usually tend to think maybe initially on an ecosystem level and so within a given ecosystem it’s like I said–it’s not just about the number of species, it’s about the number of habitats and sub habitats and the genetic diversity in a species that may contribute to adaptation and all that good stuff.

**Interviewer**: Okay. So I'm thinking that yeah maybe that will be captured as we draw the relationships later on unless there’s like an obvious other concept that you want to add to the map right now.

**BD050**: No, I think no. I don't think so.

**Interviewer**: Okay. Yeah, I will say…

**BD050**: Just broadly in terms of what’s diversity, I guess that’s how I think of it.

**Interviewer**: Okay, great. Yeah and I’ll say…

**BD050**: I think… I will say biodiversity is not something that I focus on, right? So, I tend to think at a systems level and I tend less to think about–and of course biodiversity’s a component of a system–but I tend more to think about the system processes and functions and biodiversity is a component of that that could reflect how that system’s functioning and then I might use a–because I work in a system like a salt marsh, I don’t always use–diversity is not the best metric for me in terms of species–its just not. It doesn't reflect well in how the system is functioning or if it’s intact or if it’s progressing in terms of restoration. It’s more about kind of key species that play critical roles in that system, are they showing up, what’s their abundancies. Even when I look at fish, diversity is just–I mean it is a component so if you compare like a natural system to an armored system, your diversity’s gonna be higher, so you know that is one indication of a positive function, right, for the system, but so for me it’s like a tool in the toolbox, it’s not like my focal research.

**Interview**: Yep, yep, that makes sense. So I think maybe it sounds like we should add ecosystem function itself just as a broad category maybe and then the other thing that I’ll just add is as you were talking through some of your specific research areas, so I’ll ask these kind of broad questions but my hope is to make this model represent your area of expertise and specifically if possible within the Chesapeake Bay, given that that’s our current case study. So we can add in like core system components like you were just talking about if we want to maybe, you know, as we go through the interview add in some components of living shorelines for example and the dynamics of natural versus hardened shorelines. We can do that as well, that would be helpful for me to get some more perspective on like Chesapeake Bay local dynamics.

**BD050**: That I can do. I can talk about that all day.

**Interviewer**: Perfect. Okay, so one thing that we’ve done as a team from some previous work… Emmett had a precursor project to this one and one goal outcome of that project was the build a framework for conceptualizing species diversity specifically and helping to make a definition and a framework for biodiversity for management. And so they came up with four key components to represent species diversity, I’m gonna add those in as four concepts and I’m just wondering if you agree with these concepts, if there’s anything you would change, remove, add, and if it’s how you think about species diversity in your own work. So they are key food web supporting species, habitat forming species, species of conservation concern, and harmful organisms.

**BD050**: Yeah, yeah, I mean those all make sense to me and in my living shorelines if you want to use that as an example. And then the only other thing I’m thinking is–so you have your…well key food web supporting might capture…so if you think of like some of the salt marsh species, it’s a very… the way the marsh can support the greater estuary is of course you have to transport the material that are being produced in the marsh to the greater system and so that relies on species that are processing the organics in the marsh, so in the sediments, breaking down the plants, so there’s kind of the detritivores and so that could really fit into the key food web supporting species concept in general, right, just maybe like an indirect–it’s an indirect step but it gets there eventually.

**Interview**: Right, okay.

**BD050**: Harmful organisms…so is that like invasive species would be covered there too?

**Interviewer**: Yeah.

**BD050**: Species of conservation concern…yeah…and that–whose determining the conservation concern? The state, the feds, what’s the…?

**Interviewer**: Yeah that, so we’re strategically keeping that broad right now and one of the goals is to hear from folks in a local system like what they consider the species of conservation concern and how they think about defining that. So as you can imagine, fisheries managers have had very different ideas of what a species of conservation concern is compared to someone working under ESA for example.

**BD050**: Okay, yeah. I like those categories, so habitat forming is obvious for a salt marsh, right, your spartina. There are also species that have mutualistic relationships, I’m assuming that would be covered…I mean I guess technically anything that has a mutualistic relationship with spartina is covered under the key food web supporting species since the spartina grasses are the sort of foundation of the food web from the salt marsh.

**Interviewer**: Yep, okay. I think, yeah so for some of these interviews, we leave these very broad categories but just listening to some of your responses, I think it would be particularly helpful for me if maybe we added in these specific components related to your area of expertise in the Chesapeake, so I was just gonna start adding those in, so we have spartina, and then we have, you said, detritivores, am I gonna spell that right? No I am not. And then, I know you said invasives, was there like specific invasive dynamics…

**BD050**: Phragmites is a plant species that is invasive to salt marshes. It’s p-h.

**Interviewer**: P-h phragmites, it’s you know it’s the end of the day.

**BD050**: Yeah that’s a key one. You also have things like nutria and stuff of the bigger salt marshes would be another harmful organism I suppose.

**Interviewer**: Sorry, will you repeat that? What was that?

**BD050**: Nutria is another…it’s a mammal that’s pretty destructive, yeah.

**Interviewer**: And there was…

**BD050**: So under key food web supporting species, would that include your predators. So I’ll just give you like a generic salt marsh ecosystem. So you have your spartina, so in the low marsh, this is the area that’s inundated daily, and that’s the area that’s gonna have regular access, right, by estuarine organisms, so there you have your Spartina alterniflora, is a predominant grass. The soils are incredibly organic and the species that are really processing those organics are the periwinkle snails and fiddler crabs. Those are the key, kind of the two primarily… they’re really abundant in these salt marshes and they quickly process that material and they are prey to things like blue crabs and terrapin which are kind of some of the important predators, besides–there’s a ton of fish that are obviously in the marshes. Terrapin I would consider a species of conservation concern, diamondback terrapin. Blue crab of course are fishery species so they’re managed. Oh and then ribbed mussels are a mussel that have a mutualistic relationship with spartina, and they are important filter feeders, they increase denitrification, and they’re also prey for things like blue crabs and terrapin right so they fit in that food web as well. It’s a very tight knit ecosystem because it’s such a harsh environment, and so you can… I mean you will see these relationships in any marsh, any salt marsh. So that’s probably kind of the–and then of course there’s a ton of fish, so the marshes serve as important habitat for both juvenile, so the young of a whole array of species, but also the forage base, so mummichogs are a resident fish that lives their entire lives in these marshes and as one example, so these are small bodied fish, right, that serve as the base of the fish food web.

**Interviewer**: I’m just gonna put maybe juveniles and forage fish as like one broad category if that’s…

**BD050**: Perfect. And it’s not even just fish, it’s also like shrimp, so it’s like nekton, like fish and crustaceans, so shrimp of course is another important species group. So the habitat forming species are including the ribbed mussels, I would say the ribbed mussels, spartina, the fiddler crabs, cause they create burrows, there’s other crabs too but I think the burrowing species are… they create microhabitats in the marsh, and I think that’s all the categories.

**Interviewer**: There was a reason I put periwinkle snails and fiddler crabs in a box together, there was something that you said…

**BD050**: So they are the ones that are processing the organics in the salt marsh and then they are the connector cause they’re prey to all the species that are coming in and feeding in the marsh. So periwinkles will…they basically eat detritus, algae, all kinds of things and they will actually kind of farm the marsh grass, so they make cuts in the grass with their rasps and they essentially feed on the fungus that forms there, so they’re little fungus farmers. So they’re kind of this critical connection between the marsh plants, which a lot of species can’t directly consume, right, so that high productivity gets transferred through the snails and the fiddler crabs cause fiddler crabs are eating all the detritus and other decaying organic material at the base of the plant right, and so and then when they’re consumed by other species it transfers that productivity to the greater estuary.

**Interviewer**: Gotcha.

**BD050**: So they would fit in the bucket of you know the key food web supporting species.

**Interviewer**: Gotcha. Okay, so I started–I know you said the spartina and ribbed mussels had a mutualistic relationship so I drew a bidirectional relationship there. I should have been drawing arrows with the food web dynamics when you were talking but I got a little distracted adding in all the concepts.

**BD050**: So you could put the blue crabs and terrapin together, as kind of primary predators, and fish would be in there somewhere too as predators, so you could just put fish too. Blue crab, terrapin, and fish. So, they would be predators of the periwinkle, the crabs, like I said, there’s more than fiddler crabs but fiddler crabs are a key species, and ribbed mussels, they feed on ribbed mussels too. Blue crab love ribbed mussels, they’re little piggies when it comes to ribbed mussels. And then the juvenile fish… so what we’re missing from here is there’s also an abundance of macro-invertebrates, right, so the juvenile fish and the forage fish will be feeding on, you know, all the good worms and small clams and things like that.

**Interviewer**: Oh wait, these macro-inverds are prey for juveniles. So this is…we do not need to get into the ecological dynamics this specifically but I’ve built these models for base food webs for previous projects and one thing that always came up was when drawing the relationships between predator and prey, is it a top-down or bottom-up relationship, so like we could draw the arrows as being you know, positive from the prey to the predator, negative from the predator to the prey and be bidirectional or if you think that it’s just a bottom-up or top-down process then we can just have it one way…we don't need to think that complicated for the purposes of this project but I just wanted to throw that out there.

**BD050**: I mean it can be pretty top-down if…so there’s instances where–this has not really been reported in the Chesapeake Bay and I haven't seen this yet–but in other systems it’s been reported that you know, an absence of predation has led to increased fiddler crab abundances which has led to increase grazing on the plant, you know, like that kind of thing. So, you know, that would be very tough top-down. Like I said, we don’t see that strong evidence in the Chesapeake Bay but I don’t know…the systems are different, right, so a lot of the work that’s done in these coastal systems are exposed to really high salinities, it’s kind of a different–and where in of course a more brackish area estuary so they have different stresses so it’s…yeah that’s an interesting. I mean, these systems are…it’s not like the systems can’t survive if the predators aren’t there.

**Interviewer**: Right, right.

**BD050**: They can do perfectly fine if there's the terrapin in the creek, right, so. Because they’re adapted to–especially salt marshes–it’s a really specialist ecosystem, right, because of the physical conditions.

**Interviewer**: Okay, well I guess then…

**BD050**: There’s something I wanted to mention though. For living shoreline… so a lot of my work is comparing natural marshes to living shorelines, and so with living shorelines in Chesapeake Bay, the way these marshes are created is you grade the bank, you create the proper elevations, you backfill with clean sand so that’s a policy requirement, it’s a regulatory requirement, and then you do plantings. Well the grass loves, the spartina loves, they do well, they grow, they do well, but one thing we’re seeing is there’s a reduction and often an absence in recruitment of ribbed mussels to these projects, and so we are…we’ve done a lot of experiments and we’re kind of narrowing down the reasons why, and we’re working to try to cultivate ribbed mussels now to introduce them to these projects, but the bottom line is if there’s a rock sill that fronts–so often when you establish a marsh, you’ll see you need some sort of break, in these higher energy settings, they use some sort of breakwater. These small rock sills are very common, sometimes oyster reef structures are used, and so partially what we think is happening…the animals are able to get to the marsh but they’re getting there in lower numbers. So, and some of them are settling on the rocks so we think there’s an interruption with, you know, disruption with the settlement. But the other thing is the clean sand is takes a long time for it to gain in that rich organic material, and so it’s very harsh and we think that’s causing some additional mortality for the young when they settle in the sand, it’s very desiccating for those animals and could also, because there’s lower density of the plants and there’s less of the mussels present, they may, you know, they settle in clumps so having the adults there is another attractant and maybe another protection from predation. So it’s probably a combination of there not all getting there in the same numbers to the surface of the marsh and the soils may be contributing to that delay in maturation of the soils. Over time as the plants grow and die, grow and die, they get more organic but it takes, you know, fifteen plus years for that.

**Interviewer**: 15 years wow!

**BD050**: So that’s one, you know, restoration design that’s led to an absence of kind of a critical species, right.

**Interviewer**: Right, okay so I’m trying to think of how to capture that in a concept and then again, that’s a limitation of this is like how do you fit all of that into…I mean it’s the classic like qualitative versus quantitative.

**BD050**: I just wanted to point it out as an example. If biodiversity is just for your end measurement, when you’re looking at restoration projects, that would be one, you know, as a result of how we construct these things, there’s a restriction in diversity, right. And this is also true for… I did some earlier work that looked at infauna, so macro-invertebrate infauna, the animals that settle into the deeper soils, and those species were missing and again I think that’s related to–it’s just takes time, right, as soils mature and gain more organics, you would probably get more wild recruitment and those habitats would become suitable for some of the deep deposit feeders too. So I don’t know how that fits into your overall kind of goals of the project…

**Interviewer**: No that’s the exact kind of example that we’re looking for is using these case studies to get local examples of either where biodiversity is considered in management or where it needs to be to enhance management in a more practical and equitable way both for conservation of biodiversity and for access to biodiversity and access to the services that people want, so like waterfront homeowners wanting living shorelines, for example, or not wanting a living shoreline. So that’s the exact–that’s exactly what we’re looking for, that’s really helpful.

**BD050**: I mean I will tell you that people that are putting in living shorelines–so we’ve done surveys of property owners and a whole ordeal(?) to figure out why they’re putting these in and stuff, and of course, people are putting them in for the shoreline protection, that’s their primary, you know right. Secondary maybe they like the look of it or they like having fish there, no one's thinking about ribbed mussels. So we have to basically…the way it gets attention is that–like oysters have gotten attention for water quality, so they’re filter feeders and they’re helping to reduce nutrients, right–and so people are less swayed by biodiversity, they’re gonna be more swayed by the concept of clean water, right, and that tends to be kind of our backdoor way in. You gain all the same functions, right, but it’s just like what are the things that people care about. They care about clean water, they care about their view, they care about their shore staying in place and not eroding away.

**Interviewer**: Right, right, right, right. Okay, so let me just put…so just to like give you the high level bins that I was gonna ask for the models are the one’s remaining were gonna be ecosystem services and stakeholders affected by the system and then management approaches and stressors, so I think, probably other than stressors like you just touched on the services and the stakeholders and some of the management approaches, so I was just gonna add some of those in as you were talking. I think, it sounds like it’s important to somehow incorporate the organic matter in the soil as an important dynamic to these processes.

**BD050**: Yeah, I mean what is the marsh, right, the marsh is the plants and the soils present, those are the key things.

**Interviewer**: Right, so this is that spartina increases the organics and then organics increase the ribbed mussels, right, is what you said?

**BD050**: we think, yeah. I mean, yeah it makes sense. That makes it a suitable habitat.

**Interviewer**: Okay, and then we need more organics in the soil to enhance living shorelines.

**BD050**: And I would actually… I would do a second arrow from the ribbed mussel to organics in the soil because the ribbed mussels create biodeposits that increase the organics in the soil.

**Interviewer**: Gotcha. Okay. I was just gonna make sure that organics to soil increases living shorelines or enhances them right?

**BD050**: Mhm.

**Interviewer**: Okay, and then shoreline protection, sorry, living shorelines…

**BD050**: where that also fits in the organics in the soil in terms of your services is carbon sequestration, right, which is of course a blue carbon hot topic. Again, so you know, in the Chesapeake Bay, more than 95% of the shoreline is privately owned, these decisions on putting a living shoreline are being made by property owners most commonly. There’s a lot more resources now in terms of dollars, cost share to help property owners put these in and of course it’s required in both states now to put them in where suitable–lots of exceptions made there–but people, in terms of what they care about, right, so think about it, you’re a homeowner, you basically just want to know your shoreline’s protected, it’s not gonna erode away. The other stuff is sort of icing on the cake. Where the issue comes in is people are still not convinced that living shorelines are as protective as armoring like bulkheads and \_\_\_?\_\_\_, they’re still not convinced of that. So we have work to do there to convey that message better because they are protective, they’re adaptive, you know, they recover from storms whereas bulkheads do not, that kind of thing. So yeah, shoreline property protection, its reduction in storm impacts and flooding, those are the big ones, that’s what people care about, that’s why they’re doing it. Yeah, there’s more money coming in from federal agencies now to put these projects in, so where they’re being put in on public lands then that’s a different story, right, so then you have… like if NOAA’s putting it in, they can care about fish, so they want fish habitat, so you have to make that link to fish habitat. If it’s, you know, somebody else and it’s going towards the TMDL crediting, then it’s all about the water quality, nutrient reduction, and living shorelines in the Chesapeake Bay are an improved BMP for the TMDL which means that basically the localities and states get credit if they put in living shorelines for going towards their TMDL goals, you know what that is, a TMDL?

**Interviewer**: I don't think I do, yeah.

**BD050**: Chesapeake Bay is under a regulatory requirement from EPA to meet a total maximum daily load, so it’s called TMDL for the bay, and so basically we have to reduce our nutrient inputs and we have targets, they’re set targets and it’s a lot of money, and so there’s all these best management practices that have gone through an official approval process and they’ll then count towards nutrient removal… so like if you put in a wetland, then that counts. Now living shorelines does for it as well, so if you put in a living shoreline that includes a marsh, you get nutrient reduction and sediment reduction credits, so that all goes towards making sure we meet those goals, so it has a big stick in terms of federal… you know, it’s a federally mandated regulatory program that we are required…the states are all required to meet those goals.

**Interviewer**: Gotcha, okay. So living shorelines now contribute to the nutrient sediment reduction credits?

**BD050**: That’s right.

**Interviewer**: Okay. Were there other…

**BD050**: You know, it depends on who’s putting it in and who is, you know, we’re trying to figure out ways to…like I have a project now where we’re evaluating the whole bundle of ecosystem service values for putting in a living shoreline because most of these programs just piecemeal it, they only consider nutrient reduction or they only consider…there’s another program where you can get reduction in your flood insurance cost, living shorelines count towards that, but there counted not…take one project, you’re not counting for all the services, you’re just counting for one of those, right, and so obviously there’s value for multiple services and biodiversity is not even in the mix, like it’s not even in the conversation. So this is good, you’re gonna fill that gap.

**Interviewer**: Hope so. Yeah, it’s so funny you say that because I’ve had a couple interviews now with folks working in the living shoreline space and one of them was with a bioengineer at the Naval Academy and she was telling me that traditionally, bioengineers are very focused on the physical benefits, ecosystem services in terms of like wave attenuation, shoreline protection, but now they’re trying to move more towards a co-benefits framework to promote living shorelines across different communities, so.

**BD050**: Yeah, I think a lot of the living shoreline communities is doing that. Everyone’s trying to figure out what’s speaks to people, right, you know and everyone’s different, it’s different, so we just did a survey of recreational fishers. Turns out they love living shorelines and you know, recreational fishers contribute a huge amount to local economies, so the language they want to hear is fish habitat, right, but maybe this property owner doesn't care about fish habitat, they just care about, you know, their shorelines not eroding anymore.

**Interviewer**: Right, or the scenery.

**BD050**: Or the scenery, yeah, can I see a bird on my property?

**Interviewer**: Yeah, exactly. Yeah, that was one thing we heard a lot in the Gulf was similarly that living shorelines enhanced shore based fishing access, especially for subsistence fishers in the Gulf so that was really important but then, you know, everyone across the board… living shorelines people in Mobile seem to be very pro living shoreline and I think that there’s been a lot of positive movement in that direction. The only thing, we asked like are there any potential negatives to living shorelines and the one thing that someone said was in terms of increased biodiversity, negative species that they don't want to see… negative being like a snake or a gator.

**BD050**: Yeah, we always hear snakes.

**Interviewer**: I would’ve never thought of that, but fair enough. No, I was just gonna say, you know, obviously we’re almost out of time, so I was just gonna ask if there’s any other…like obviously we didn’t have time to fill this all out. You could spend hours doing this as you can imagine, and just to tell you, so what we’ll do in our workshop is we’ll use this same tool and so we’ll come in with a base model that we’ve produced from these individual interviews across these different stakeholder groups and use that to start the conversation and then we’ll do break out groups based on people’s areas of expertise or the resource that they rely on and build group models that are system-specific to the Chesapeake Bay and ultimately produce a collective model from the workshop and then what you can do–and I can show you–but it’s not going to be meaningful given that the model is not done, but we call mental models semi-quantitative because we have a numerical value on the relationships and so if we had time to finish the model, the last thing I would do is ask you to weight the relationships, so they’re just relative to one another, which relationships have a low, medium, or high impact, and then we transform those to numerical values and then it becomes a semi-quantitative model, and then you can run these what-if scenario simulations, so you could say if you were to increase one system component, so for example, if you were to implement a certain management intervention, what would be the relative impacts on the other system components, and so then you can use it as a tool to examine tradeoffs of management interventions of who’s going to be impacted and what components of biodiversity are gonna be impacted by different approaches.

**BD050**: So, alright, so one thing that comes to mind that might be of interest to you–well I’ll say two things–so when you’re thinking about living shorelines, if your interest is to really sort of maximize biodiversity in that given area, a design of living shorelines where you incorporate your marsh vegetation and an oyster reef and/or SAV or some combination of all three is where you would get additional biodiversity uplift, right, because you’re gonna have the species of \_\_?\_\_\_ associated with the marsh, the species of \_\_\_?\_\_\_ that are making use of the oyster reefs, and the species with the SAV, which there’s often…the species will move in between habitats, some of them will but some of them will be specialists to that particular feature and in combination, those three coastal habitats are also contributing to shore protection, right, so you’re kind of also maximizing shore protection. And the other thing I’ll mention in terms of living shorelines is if you’re looking to maximize diversity, it’s important that you have, you know, salt marshes are not all exactly the same, right, so some of these projects people might construct a lot more of a high marsh than low marsh and it’s actually the low marsh where you’re gonna get the most aquatic species utilization, right, high marsh is only flooded irregularly during extreme tide events or storms, so having enough inundation that allows for regular access of that marsh vegetation is gonna be critical to maintain that diversity. So when you’re thinking about restoration and the management of these projects, this is the other complication of course because every agency… I mean the key to the management is not at the federal level it’s at the state and local level, that’s where all the decisions are being made and each agency has their own mission and purview and, right, so across a shoreline is where it gets very messy and you have all these different agencies focused on one component of the shoreline. I mean, even up above, we argue…I’ll say we argue for integrated management when you’re putting a living shoreline considering the shallows all the way through the riparian, right, you also need to be considering the riparian, the diversity of the riparian, as well as space for those habitats to migrate landward with sea level rise, so you have kind of a longer-term persistence of the ecosystem and then the biodiversity associated with that system, and it gets messy cause of all the different…one’s in charge of this intertidal zone and this other agencies in charge of just above that and there’s some coordination but it definitely could be better. So yeah, I’m just gonna mention that the multiple habitat considerations when you’re thinking about management cause the bay’s moving in that direction where they’re trying to do more integrated sort of system level restoration as opposed to just one, I’m gonna restore this marsh in isolation not thinking about oysters or SAV or just thinking about the main structural habitats.

**Interviewer**: Right, right. That’s so interesting and great to know, and that’s exactly what you said about, you know, different managers and different sectors being in charge of different components, like we’ve heard that time and time again that management is very siloed both at the federal level and down at the state level and there just needs to be more collaboration across agencies and across regions. Another thing that we kept hearing is that, you know, like you were saying before, like more biodiverse is not always necessarily what you want or what you’re managing for, like what is the base line, what are you targeting, what’s the natural system, and what do you value in the system when thinking about new invasives coming in or range and distribution shifts, and so then also the need for more collaboration across regions is really important with distribution shifts and so we’ve heard that story time and time again across all of our case studies, so that’s really interesting.

**BD050**: Yeah that’s gonna be a big one in Chesapeake Bay with SAV–is SAV part of your project view? It is, right?

**Interviewer**: Yeah, definitely.

**BD050**: Yeah because of our issue with eelgrass, right, so eelgrass being at the southern extent in Chesapeake Bay it's already experiencing dieback and we’re seeing a shift now in more predominance of ruppia(?) as opposed to eelgrass which is a much more \_\_?\_\_ species, it’s kind of boom or bust, so that has huge implications on the Chesapeake Bay as a whole, right, I mean the eelgrass is a critical habitat. So interesting management discussions are gonna come up with that, right, do you try and facilitate some type of movement of a strain that’s more heat tolerant, some really interesting sort of conservation, restoration questions.

**Interviewer**: Yeah, absolutely. Well, to that point, I know everyone’s so busy but I don't know if you have availability but we would love to have you join us at the workshop if you have the availability and are interested.

**BD050**: Yeah.

**Interviewer**: It’s April 3rd, it’s a full day on April 3rd, and a half day on April 4th at SERC in Edgewater.

**BD050**: Okay, let me… I think I can do that.

**Interviewer**: That would be amazing.

**BD050**: It’s at SERC is that what you said?

**Interviewer**: Yeah, and we have funding for travel for you to come and stay at SERC.

**BD050**: That’s full day on the 3rd, half on the 4th?

**Interviewer**: Yes.

**BD050**: I’m penciling you in.

**Interviewer**: Amazing.

**BD050**: I feel like I have one thing that is outstanding but I penciled it in, so. Yeah, no I definitely want to help where I can. I’m sure this was like super confused…our conversation, I’m like what.

**Interviewer**: No, no it was so interesting and informative and I really appreciate your time. I didn't realize that I look like a ray of sun right now with my window, so I’m sorry about that.

**BD050**: That happens to me everyday. \_\_?\_\_ and I have a skylight that directly shines down and I turn into a ghost, it’s so funny.

**Interviewer**: Oh my gosh, ridiculous. The only other thing I was gonna ask you is if you had, given your work in the community, if you had any recommendations for stakeholders or community members who might be interested and willing in participating as well.

**BD050**: Yeah, I know a lot of stakeholders, and so it would help me to have kind of a more sort of targeted ask, you know? So my group is CCRM here at VIMS, I’m assistant director of it, and we, as part of our mission, is we have spent decades fostering–we work with stakeholders regularly–so we can connect you with people, I mean to anybody at local, state, federal levels, at NGOs… there’s a lot of active NGOs working in restoration. We know all the managers. I can direct you to people who I think would be… you could tell me a kind of more specific ask and I can direct you to some names if you’d like me to of who’d be willing to spend some time.

**Interviewer**: Yeah, that would be great. I can send you an email, cause I know you have to go, I know it’s after four now, so I can send you an email with the information unless you have a little bit more time to talk. I don't want to take up more of your time.

**BD050**: Yeah, I have a little bit. I have more time.

**Interviewer**: Oh, okay. Yeah, so like I said, so the kind of core groups that we’re hoping to have are researchers, regional managers, marine resource managers, and resource users, so for regional managers, like fisheries managers and coastal zone managers would kind of be the two core ones, either in the state of Virginia or the state of Maryland. We have travel funding but I guess the closer to SERC, the better in terms of like logistics cause for travel, I’ll send you a follow email when we get off with connect you with Michelle whose our administrator, but I don’t know if you’ve had to deal with this before, probably not an issue at VIMS, but we have to do all this paperwork to get folks in the system to give them travel funds and it takes weeks and it’s like this whole thing. So I would say the closer to Anapolis, the better, but we do want some representation from Virgina as well if possible from the lower bay.

**BD050**: I will say, I’m just gonna put this out there because this is gonna be one of your biggest challenges is, you know, a lot of these people are of course overtaxed and it’s hard for them to get to be able to travel. I’m so you probably are gonna get–so for instance, if you want someone from VMRC, Virginia Marine Resources Commission, I would be very surprised if they actually traveled up there. I mean, it’s possible, but…I mean so the person from VMRC would be–from fisheries–would be Pat Gier(?). I’ll give you the \_\_ names. You might’ve already gotten his name.

**Interviewer**: Yeah, yeah, I have.

**BD050**: I will say he has traveled–I know he has traveled up there–so maybe he would do it.

**Interviewer**: Okay, yeah I have spoke with him, I haven't heard back about the workshop. I’m guessing that he can’t come cause it’s been a bit since I invited him, so.

**BD050**: Oh, you already invited him?

**Interviewer**: Yeah.

**BD050**: Okay. He might’ve just been like Oh it’s in April, I’ll think about it later, I mean honestly.

**Interviewer**: Well, and that’s like, to be honest with you, that’s what’s so hard about these workshops. This is–in the Gulf, I had Steven helping me with recruitment and this is kind of like my first time in charge of recruitment on my own navigating these dynamics and I’ve never worked in the Chesapeake so I don’t know anyone and so it really takes so much work, like building social capital and finding the people to then point you to the people, like I have this one instance where I’m like six people down a chain referral of people being like oh I’m happy to help but I’m not the right person and then oh but I’m happy to help but you should talk to this person instead, and it’s just like… and then with April, some people say oh that’s too far away, I need to think about it, who knows what I’ll be doing, and then there’s some academics who were booked six months out already and they’re like well that’s way too soon.

**BD050**: I know, there’s no happy middle ground, right. So in terms of… the way VMRC works is the fisheries is separate from habitat cause that’s smart. And so there’s another habitat division, I don't know if those people are on your list.

**Interviewer**: I don't think so.

**BD050**: The person, though, that I think you should consider from VMRC, because she sits a little bit higher so she has oversight, is Rachel Peabody. I don't know if she’s been on your list.

**Interviewer**: I just got her name. I have not reached out to her yet but I just got her name from someone else.

**BD050**: She would be somebody that I think would–well she could travel up there. She would be great. So that would be the person I would recommend and I think you will get somebody from the–the people from the habitat division, they just do not participate so you’re less likely… I don't think I’ve ever seen Randy Owen in a meeting in Maryland, so I don't think that’s gonna happen, but Rachel may. I think Rachel would be more likely. And she can speak well both to the habitat and some of the fisheries, like oysters she can speak to. And then, okay so that was your fisheries from Virginia. Have you spoken with…have you heard the name Dave O’Brian.

**Interviewer**: I don't think so.

**BD050**: So he is NOAA fisheries but he’s actually a kind of a liaison to the corp–he’s actually down in Virginia, so he’s mainly interacting in the Virginia space. He’s actually a former…he was part of my group previously, he’s a former VIMser. But he may be somebody who you’d want to reach out to. He’s also very familiar with fisheries and habitat issues.

**Interviewer**: Okay, yeah. We keep hearing that we definitely need some representation from the corp but I’ve had a hard time finding someone to talk to. And that was–in the Gulf–that was also like, people kept saying the corp–I mean I don't know if this would be surprising but–the corp kind of got a bad rap at the Gulf workshop and they were not represented at the Gulf workshop so it would’ve been interesting if they had been there and I’m intrigued to see if we can get someone at this workshop and see how that goes.

**BD050**: You should be able to. The other person who…so basically Kevin Debois, have you heard that name? He is the liaison to DOD, to military in Chesapeake Bay, and his background is in wetlands, shorelines, and he’s very well versed in kind of the entire political landscape, everything, management, restoration, and he’s very knowledgeable, so he would be a good person…I’ll give you his contact, and he’s somebody who does go to meetings. So if you were looking for someone who has that military perspective, so you know, he’s a scientist but he’s you know, a liaison to military, which I think is important when we’re talking about these kinds of issues, particularly in Virginia. You know, military owns a lot of the coastal lands and are actually, in some respects, pretty forward thinking in how they manage the natural lands on their bases, so. I’ll see if I can find you–do you have a name for the corp that you’re going to try to reach out to?

**Interviewer**: I just emailed… yesterday… my inbox has so many emails right now… it is…here it is, Mindy Simmons.

**BD050**: Is she from the Norfolk district?

**Interviewer**: I think so.

**BD050**: Okay. I can ask around and see if there’s somebody else if you don't hear from her.

**Interviewer**: Oh, she is based out of D.C. actually, she’s senior policy advisor. She had wanted to participate in the workshop that Emmett and Gabrielle were running so Gabrielle just connected us and was like oh if you want to participate in this one, but I haven't heard back yet.

**BD050**: Okay. And then are you also…so when you say you stakeholders, you’re interested in sort of local government as well, so like planning districts, soil water conservation, is that who you’re thinking?

**Interviewer**: Yeah, we haven't really dove into more local government dynamics I would say, it’s been mostly state, like we’ve been talking about Maryland DNR, I’ve been trying to connect with someone from there, but–to no luck so far–but that could be interesting if you have examples. In the Gulf workshop, we had a really great local manager and he added so much value to the workshop, and he was someone that Steven already knew so, yeah if you have any thoughts.

**BD050**: Yeah, I do think that someone from the soil water conservation district would be good and I know somebody, if she’s available, but I think–I’ll send you her name…I’m drawing a blank on it right now. Oh my god what’s her name? It’s on the tip of my tongue–I blame COVID. Alright I will send it to you when I remember it and planning districts are tricky. For something like this, I’d probably–there’s a lot of politics and each one has their own little fiefdom and it may muddy the waters for this workshop but the soil water conservation district, the person I’m thinking of, has purview over the entire state, all the districts, so she would be able to speak to what restoration practices are getting you know, cost share and crediting and all that stuff, and so she would understand the management goals, you know, what they’re looking for…that’s kind of what your thinking about for this workshop, right?

**Interviewer**: Yeah, definitely.

**BD050**: And there was something else I was thinking of. For local…you said something when we were talking about local and it triggered something and I just forgot it. So we have VMRC–oh, oh I was thinking of Virginia’s Coastal Zone Management Program. They would be good. So that’s basically, it’s NOAA but it’s through Virginia DEQ, right, so and I think probably Will…I’ll send you a name. You didn't have any person there on your list?

**Interviewer**: No, someone just yesterday said that they might be able to connect me with someone from in CZM in Maryland but I haven't heard anything for Virginia.

**BD050**: Yeah, that would be good, having a–and they would probably participate, be able to travel. Okay, so who are you forgetting, so DCR? Do you need DCR?

**Interviewer**: DCR…

**BD050**: Do you have anybody from DCR?

**Interviewer**: I don't think so.

**BD050**: Is oysters part of your purview?

**Interviewer**: Mhm. Yeah, definitely.

**BD050**: Cause DRC(?) also has an oyster program person and I could give you his name. I mean you could try, I don't know if he’d be able to come, and Rachel may be able to cover some of that, Rachel Peabody, but are you planning like breakout groups with particular…?  
  
**Interviewer**: Yeah, so what wwe did in the Gulf is we had two break out groups that were focused on coastal zone management and two focused on fisheries and ecosystem management, and then we divided them up so that each group had a combination of researchers, managers, and community members.

**BD050**: who will be your community members?

**Interviewer**: So that was gonna be my next question. So I have some names for—I have an interview tomorrow with a recreational fisherman and then we’ve gotten some names for other recreational and commercial fishermen and organizations. Definitely a hard group to infiltrate when you don't have any social capital, and then we’re hoping…we have a couple aquaculture farmers that I’ve kind of made contact with…you know, I get people who will maybe respond to my first email and say that they’ll participate but then like, I can't get the response once I try to schedule a call, but really like the goal is aquaculture farmers, fishermen, both rec and commercial, waterfront homeowners would be great but I think that that group’s usually the hardest–at least it was in the Gulf–but if you had any ideas there, and then we had some great tourism representation in the Gulf, like we had someone who does dolphin and whale tours but we’ve been struggling to come up with a parallel for the Chesapeake in terms of tourism…I know like, we were saying like sailing and kayaking is a big thing but like that’s not really a good stakeholder group for this type of workshop so I’m not sure if we’ll have like real tourism representation, aside from charter fishing hopefully.

**BD050**: Okay. So, yeah the rec fishers, I mean I could probably…I mean so we did a whole survey with rec fishers. We did a \_\_?\_\_ and everything in Virginia, so we have some contacts, I just don't know if they’d be able to travel. I mean realistically if they’d be able to travel up to a two day meeting is like a big… and the same is true for like your property owners you know from Virginia. My worry is that your gonna end up with Maryland heavy and Maryland and Virginia are very different.

**Interviewer**: I know, I know.

**BD050**: Shockingly different because of how close we are, so but we do have a program… so in terms of property owners, we do have a program that we have trained master gardeners to go out and do shoreline evaluation surveys for property owners. So they go to someone’s property and they assess their shoreline and they help them decide what they need to do, if the living shoreline appropriate, that kind of thing. Maybe someone from there could speak to the property owner experience without… the same issue is gonna come up though cause these are like volunteers that do this, right, so, but they may be interested. Some of them are retired and they’re super enthusiastic so I could maybe try and find a name of someone from the master gardeners.

**Interviewer**: Yeah, that would be great. That’s basically the representation we ended up getting in our Alabama workshop was we found this, similarly like a community organization that was focused on coastal conservation and it was a retiree who was super excited to spend two days with us, so that worked really well.

**BD050**: The other group that’s fairly active down here is–or really throughout the Chesapeake Bay—is wetlands watch, and they’re very active in the policy space as well, so policy management. And they do go to meetings so I can give you a contact from there, that would be another good person, very knowledgeable. We work with them regularly, so they’re one of our trusted boundary organizations that help us get the science out there, right, so we work with them a lot. In terms of your aquaculture farmers, do you have people that you’ve identified, so you’ve reached out to some people?

**Interviewer**: I have, so Adrian Miccolis(?), am I saying her last name right? So she’s coming, and she said that she might be able to connect me with some aquaculture farmers and I actually think that she had emailed me while we’ve been on the phone but she had said that she–oh I just, wow, okay she just thirty minutes ago shared a google doc with possible contacts, so that is fantastic, so nice. Yeah, and then Andrew Shield gave me a name for, I think it’s like, Pleasure House Oysters which again, like I was looking and it’s like four hours away so I would be shocked if someone would be willing to make a four hour journey but worst case scenario I could interview beforehand, it’d still be helpful to get their perspective, and then our public engagement team connected me with someone on the eastern shore who has an aquaculture farm, and that’s… she gave me like a tentative yes but I haven't been able to follow up with her. But, yeah, so like a few, yeah.

**BD050**: Yeah, I don't know if this person’s on your list but I’m trying to think of people that are likely to participate, is Mr. Bruce Bogt who owns…did you get that name?

**Interviewer**: wait sorry, say his name again.

**BD050**: Bruce Bogt, this is–you may be familiar–so Bruce Bogt of NCBO, his father owns an aquaculture operation in Virginia, and we did like a big NOAA VIP event on his property. He’s, you know, he’s one of these like this is his second career, he’s semi-retired, whatever, he is very well spoken and passionate about oyster aquaculture, so he may be willing to come up and provide his perspective. I did some work with him looking at wave attenuation from his operations cause he has like the floating gear. He’s really…he would be somebody that I can envision wanting to like help out. He may be on Adrian’s list, I don't know, he may be on Adrian’s list.

**Interviewer**: Okay. Yeah, I have spoken with evidently his son, that’s the Bruce Bogt I was thinking of several times about this project and he’s been very very helpful and that’s yeah, I went and presented at Fishgit(?), last fall, Bruce invited me to that, he’s been really helpful, yeah.

**BD050**: Yeah, so it’s his dad. I always thought it was a little weird–well we’re still recording but I’ll say it.

**Interviewer**: I can stop recording, I didn't even remember that it’s recording to be honest.

**BD050**: I’ll tell you this in person when I see you in person.

**Interviewer**: Okay, perfect.

**BD050**: Okay, so if I think of anybody else…so on my list to give you is Rachel Peabody, the VMRC oyster person, Dave O’Brian, Kevin Debois, soil water conservation districts, CZM, master gardeners, and wetlands watch.

**Interviewer**: Sounds great.

**BD050**: And I don't know if these people will come but… and these are people that I regularly interact with that do attend these meetings so yeah. I’m trying to think, I mean there’s somebody…there’s a lot of active groups, community based groups or state-local partnership groups you know, that are doing things, but I’m not sure… I think the wetlands watch people will get you the…cause they will have the policy knowledge, right, like how things are managed, how the kind of interacting parts, so they may be able to provide you better information for this type of workshop. What you want to avoid is–and you know this cause you’ve done this on the Gulf–you want to avoid those handful of very opinionated people that dominate the meeting and they have one opinion that…

**Interviewer**: Yeah, the Gulf workshop, it was so great and everyone was really respectful and people had disagreements but it was all handled really well, and again I think it’s like, Steven knew the right people to have in the room and so that's like the learning experience for me now here is trying to figure out the community dynamics and it’s easier said than done.

**BD050**: Yeah and it’s just tricky, like I said, cause there’s so many people, like when you say stakeholders, you’re basically saying stakeholders of the Chesapeake Bay which is like massive, right, cause you’re project, your scope is so large. You know…?

**Interviewer**: I sure do, I sure do. I was like I’m just a postdoc, guys.

**BD050**: Are you a five year postdoc…?

**Interviewer**: Uh, yeah the project is three years but I started about a year into it, so like two, a little more than two.

**BD050**: And when they hired you they were like thank god, she’ll do it all, right?

**Interviewer**: Yeah, Emmett calls me the boss now, I’m like woah, woah, woah, no, no, no, that’s not true, let’s not say that.

**BD050**: Yeah, I mean I think my advice would’ve been to like, for the workshop at least, to try and narrow your case study, you know, because when you’re bringing in stakeholders, right, to really get the most out of these meetings, having a targeted goal is so critical, I do worry that if you have fishers people and habitat people, you have all these different people in the room, they’re gonna speaking just kind of from their own silo, it may be hard for you to synthesize kind of everything that’s being thrown at you.

**Interviewer**: Yeah, you should see, I mean I will say, it worked really well in the Gulf but the collective model that we produced is extremely complex, not surprisingly, and I will say, so like we had initially…exactly what you said was what I had advocated for that when I came on was like let’s pick a theme for each case study, and we have a larger task force of other collaborators who have kind of like helped inform our decision making throughout the process for this project, and ultimately the reason why we kept it so broad was this idea of trying to understand trade offs of different management interventions for these different user groups and I will say, that actually did really come out of the Gulf workshop and was successful because one of the core things that folks talked about was access to biodiversity and how certain groups like fishermen for example, their access will be cut off to promote access for other groups like divers, like putting in an MPA where divers and snorkeling groups are still allowed to go in, tourism operators, but it’s a no take zone for example, like there was a large debate around that and we had someone from tourism and we had someone from TNC who is obviously like very MPA and consevration focused and then a recreational fisherman from a local recreational fishing organization, and the three of them kind of like went around and outlined this conflict. But it was really interesting and I think it somehow worked so I’m hoping that we can get there in this workshop. But I absolutely agree that it is… I think like in my PhD, you know Steven was always like hone in as specific as you can on your research question and then I get thrown into this postdoc, I’m like this is not what I was told.

**BD050**: You’re like, go back. I mean, it would be… I almost feel like…well, there’s no going back but…

**Interviewer**: There’s no going back.

**BD050**: The stakeholders make it get messy, right, they just make it messy, so and then if you throw scientists in there too, it’s even more messy. But, you know, as long as you have a kind of facilitated discussion and like you just said, you’re interested in the tradeoffs, where are there conflicts, I think that that would be a really…I mean those are conversations that we’re having now with these groups, right, I mean these groups recognize that sometimes there’s a conflict between putting in a living shoreline versus SAV or oyster aquaculture, right, that’s a conflict. Then you can try and be like that to biodiversity, right so, yeah, so I think as long as you have…and you’ve done it in the Gulf so you already have the experience and maybe this will help up in the bay. I wonder if you should ask…do you have anybody from the bay program?

**Interviewer**: So, I have been speaking with someone at EPA who sits at the bay program who is in the process of connecting me with other folks at the bay program but I haven't specifically talked with–I mean I’ve talked with Bruce \_\_?\_\_—But I haven't specifically talked with anyone who is staffed through the bay program, right cause it’s like…

**BD050**: I think you should reach out to Denise Wardrobe with \_\_?\_\_ because you know she has a great bay wide perspective, she knows all about the bay program, what’s going on with the bay program. I mean she’s a scientist, she’s a wetlands scientists, that’s her background, you know, I know she’s really knowledgeable and she could offer up a good perspective for this. And she actually was involved in the Caesar report if you’re familiar with that. So that’s the new report that came out where there’s gonna be a shift in bay program priorities moving things towards shallow water, so it’s really timely that you’re having this discussion, so it’s a good opportunity like there’s a lot of concentrated discussions on how we’re going to implement the Caesar report and this kind of shift in focus, and so yeah I think she would be really–and she’s up there, right, so that would be easy to get at.

**Interviewer**: Okay, yeah, great.

**BD050**: In fact, her office is at SERC.

**Interviewer**: Oh, really? Oh, okay.

**BD050**: So I’ll send you her name if you don’t have–have you met Denise?

**Interviewer**: I don't think so. But that would be great.

**BD050**: So CRC is…she’s the director of CRC and that’s kind of the overarching organization, she represents seven academic institutions throughout Chesapeake Bay, but they also support stack in the bay program, Chesapeake bay’s stack in the bay program.

**Interviewer**: what was her last name? Denise…

**BD050**: I’m sure there’s more people, I mean I can think about it some more, or if you have a hole if you feel like I have a hole, I don't have somebody from this, just let me know and I’ll fill in some names for you.

**Interviewer**: Great, well thank you so much I super appreciate it. I will not be offended, you can 100% say no to this, I’ve already asked for so much of your time…if you would be able to send introductions to some of these folks, I’m having a really hard time getting people to respond to my emails.

**BD050**: Oh sure, yeah. So I’ll send you…let me send you my list of people, right, and then you tell me which ones you want an introduction to and I’ll…cause then you can cross compare on what you already have and then I can make an introduction.

**Interviewer**: Thank you so so much.

**BD050**: If you could send me like…

**Interviewer**: Like a little project…

**BD050**: A brief blurb about what the workshops gonna be, right, then I can do a better introduction.

**Interviewer**: Amazing, thank you so so much. I cannot thank you enough, that’s so helpful. People, yeah… In the Gulf when I was trying to do recruitment, I literally, Steven had to get me a South Alabama email, like I’m now a research affiliate at South Alabama because no one would respond to a random person from the Smithsonian. It’s a little better here but it’s still like people’s inboxes are so flooded nowadays and so like if you get an email from random person, you know, you’re probably not going to respond, so that’s been a struggle, but.

**BD050**: I totally get that. I do think your…I think introducing yourself as a postdoc is always good, people are more willing to be, if you're a student, it’d be better. People can be more willing to say yes to a student. You could be like, recently graduated student. The postdoc helps

**Interviewer**: My thesis was in, I did Creole intercept surveys for part of it in the Florida Keys, and people would think that I was Florida Fish and wildlife and would actively run away from me and then if I was able to get to them and say no, no I’m just a student from Boston, then they would be like Oh sure and then you know, they’d connect me to their family, their friends, one guy introduced me to his priest, like as soon as they knew that I was a student, they were willing to do anything. But when they thought I was Florida Fish and wildlife, or god forbid NOAA, it was like get the hell away from me.

**BD050**: Isn’t that funny. I don't know…we sent a note, I do a lot of work with Andrew Shelb and when we send out surveys, if we can say it’s from a student, we do that. Cause you get way more responses, I mean, it’s crazy. I guess I would be more responsive to a student, I don't know. It’s interesting to me. But yes, I’m happy to help in any way, it’s a really interesting project and I’m excited to see what you come up with.

**Interviewer**: Thank you so much. I really appreciate it, you’ve been so helpful and I’m so excited that you’ll be able to join us. I’ll connect you to Michelle to get the travel set up and we’ll see you there.

**BD050**: Okay great.

**Interviewer**: Okay, well have a great day. Thank you.

**BD050**: You too. I hope you feel better.

**Interviewer**: You too. Bye.