Terra Bowling (00:02):

Okay, so good afternoon everyone. Thank you so much for joining us for our webinar today. My name is Terra Bowling and I am a senior staff attorney at the National Sea Grant Law Center. Today's webinar is featuring several Sea Grant Legal Network members. So for those of you who don't know, the Sea Grant Legal Network is made up of attorneys either working in Sea Grant programs or with institutional partners. We work on a variety of topics, anything from invasive species to coastal resilience. But today we're talking about some of the Sea Grant Legal Network's work in aquaculture, which we are now calling Lawquaculture, thanks to Katie Hill, one of our speakers coming up with that. First of all, we'll have Stephanie Otts and Cathy Janasie from the Sea Grant Law Center. They'll talk about aquaculture permitting barriers in Oregon. And then Rhode Island Sea Grant Legal Program Attorney Alexandra Tamburrino will provide an overview of her updates to the legal chapter of Rhode Island Shellfish Management Plan.

(01:15):

And then finally, Katie Hill, public service and outreach faculty at the UGA Carl Vincent Institute of Government and director of the Georgia Sea Grant Legal Program will describe her new research program on enhancement of shellfish stocks in federal waters that touches on offshore aquaculture in interesting ways. So before we begin, just a couple of housekeeping things. We have everyone on mute right now to cut down on the background noise. Feel free to use the chat box if you have any questions. There should be plenty of time at the end for Q&A. We'll also try to answer questions as we go along. If you have any technical issues, you can message Lauren Fremin at the National Sea Grant Law Center and she'll try to help you. And just to let everyone know, the webinar will be recorded and it will be posted on our website in the next week or so.

(02:18):

So first up, we'll hear from Stephanie and Cathy from the Law Center. For anyone who doesn't know about the Law Center, we were established in 2002. We're housed at the University of Mississippi School of Law. We conduct legal research, education and outreach for the Sea Grant Network and their stakeholders. So I will, with that, pass it on over to Stephanie and Cathy.

Stephanie Otts (02:42):

Great. Thanks Terra. So today we just wanted to take an opportunity to talk about an advisory request that we worked on with Oregon Sea Grant and we thought this would be an opportunity if you're not familiar with the National Sea Grant Law Center's Advisory Service. We wanted to give a little bit of an overview of what that is, and then I'm going to turn it over to Cathy to talk about the research and the project itself. So next slide, Terra. Oh, next one too, I guess. Yeah. So the National Sea Grant Law Center offers an advisory service where we can conduct legal research for Sea Grant program staff. And it starts by anyone in the Sea Grant Network can reach out with a question for us. We then work collaboratively to develop a scope of work. Then that research request is assigned to a National Sea Grant Law Center attorney.

(03:41):

And if there are also students available, we always like to incorporate them into the research. And then we generally share those results through memos, other written products and presentations. Next slide. And we just wanted, this is a screenshot from our advisory request database from today. There are 138 research requests in our database, and I encourage everybody to go take a look and see what's in there. A lot of those requests are aquaculture. So if you use the keyword dropdown function, you can filter out for just the aquaculture ones, but you can see most of the requests come from a sea grant program, but we also can accept from federal agencies and state agencies. And so there's a little bit of a mix of everything in there. So next slide. Cathy, was this to go to you next?

Cathy Janasie (04:49):

Okay. So we got this request from Oregon Sea Grant through the advisory service. And so they are working on this project in Oregon, working with their administrative agencies, their stakeholders, their growers to try to figure out how they can advance mariculture in the state. And so Oregon has got a pretty complex permit process, and so there's the same applications going to different agencies. There's not a single agency in charge of mariculture in Oregon, and the permitting process is pretty burdensome. And so when we first started to meet with Oregon Sea Grant, we got this huge spreadsheet of all these different questions they were having with mariculture in their state. So next slide, Terra. And so when we started working with them, we kind of put it out into 12 different research questions that we kind of characterized into these three different buckets.

(05:56):

So we had leaf process, species limitations and operational questions that they were having. And so this was a very big request. And so me and Stephanie did initial research to help prepare for a presentation we gave to the Oregon Mariculture Network to give a broad overview on some of the bigger level, higher level questions they were having. But then we decided to partner with Oregon Sea Grant with our community engaged legal internship program. So Terra, who's running the webinar, is also in charge of our student program. So every summer we hire a law student who then partners with the Sea Grant program to work on a legal issue that's facing the state. And a good part of this program is we actually get to send the student to the state for a week. And so in the beginning of Jordan Young, this is Jordan here, he was a rising 2L at Vermont Law and Graduate School.

(06:57):

We were excited when he applied for our program because he had a particular interest in aquaculture law and policy that he wanted to work on. So he was a great fit for this project. And so very early on in his summer, we gave him some background, things to read, but his second week he actually went out to Oregon and Alex Marquant, who is the extension agent we worked with, had him have this great week where he got to meet with farmers, regulatory agencies. And so that's another example of, to point out, Stephanie pointed out our advisory service, but if there is kind of these bigger questions that a state's having, this is an opportunity for states to partner with us and every year we're looking for different states to work with us on these projects. So next slide, Terra. So ultimately working with Jordan over the summer, this resulted in four different research memos.

(07:54):

And so the first one is kind of a broader catchall of different questions they had for the leasing framework for mariculture in Oregon. Some topics we cover in that memo are species restrictions in the state, the lease modification process in Oregon, public access requirements for recreational use of waters and how that might be impacted by mariculture, as well as the state process for doing consistency reviews for shellfish permits that are being issued under federal law under the Coastal Zone Management Act. The second memo examined whether or not there's redundancies in the state shellfish plat permit application process. So we showed that flow chart for Oregon. So they had a question about is there anything that's kind of redundant as growers are going through this process? And so Jordan found that overall the process was clearly outlining the agency's expectations. There was minimal redundancies, but because of the multiple permitting pathways that created kind of a complex permitting process.

(09:01):

So it's not necessarily redundant, but it is complex. And then the last two we're going to talk about more in detail in a second, but the third memo looks at different states' procedures for modifying or amending maricultural leases to compare for what Oregon might adopt. And then the last one is looking at establishing a pilot maricultural program in Oregon. So next slide, Terra. So for the modification memo, we worked with Alex at Oregon Sea Grant to kind of pick out a handful of states that they thought would be useful for Oregon to compare. So Jordan looked at Alaska, California, Florida, Maine, Virginia, and Washington, and he actually reached out and talked to regulators for most of these states in the process of

doing this. So he got some really pretty good insight about the overall process for each state. And if you go into the actual memo, at the end of the memo, there is kind of an outline of everything he found about the process in each of these states for how they're dealing with modifying mariculture leases.

(10:13):

But through his research, he found that there were some commonalities between the states. And so for one, he was seeing that most of the states that he examined did have an application webpage that helped growers in each state kind of work through the modification process. Included in that, they have a standalone modification application, which would be different from doing a lease application. Application fees he found ranged from 50 to $200, so around the same monetary frame to do this process and that they all had these established agency review frameworks that the state had established that helped growers get through that process. And so what makes Oregon unique is that their Mariculture leases are actual perpetual. So the modification is something that they are working with trying to figure out how to get through because there's never a time when a lease is up and they have to renew.

(11:24):

And so all these other states had lease terms from 10 to 25 years, and so that was a big difference from what Oregon has on the books. And he also found that some states do have a codified lease modification process, and so the state has gone through to put it in their laws and regulations while others like Washington only had agency policy and practices. And so in those states, it's not as clear for people to find the process, but they can work through it if they work with the state agency. And then finally, an issue that even came up when Stephanie and I were on that Mariculture Network call was this issue about whether or not modifications had to go out for public comment and review. And so Jordan found that some states do conduct to only internal agency review. So Alaska, Florida, Maine only review internally.

(12:25):

Florida has streamlined that even more by creating a porthole for leaseholders to view their lease and permits, apply for a modification and track the application status, while other states like California and Washington do require an external period during which a modification application could be open for public comment. Where are we going? There we go. You can go. We can go to the next slide. So the next issue he tackled for us was mariculture pilot programs. And so Oregon had this question about what would they need to do in their own state to establish a pilot program. And so for this, Jordan was able to use the state pilot program explorer that is part of the Law Center's Marine Aquaculture Policy Database program. So he was able to go in and look at these different attributes in this explorer to pull out what different states had.

(13:29):

The states that are in that explorer are Florida, Maine, Mississippi, Rhode Island, and South Carolina. So it's a tool that anyone could actually use to go look and to see what different states are doing. So next slide, Terra.

(13:43):

So pilot programs would usually allow for mariculture operations to have a limited space and time for which can be useful for someone to think about whether or not their farm could be profitable and whether there's ecological considerations in the area that they should be thinking about and other logistic issues. And so generally these programs only allow a farm to go for a limited time period, one to three years, and they generally have these restrictions on what can be farmed, the type of gear that can be used, and whether the product can actually even be sold to consumers. So Jordan, in looking at Oregon in particular, found this handful of barriers to a pilot program in the state of Oregon. So the first is that any lease granted after 1997 in the state only allows oysters to be cultivated on shellfish plat leases. And so previous to that, clams and mussels were allowed.

(14:50):

They're no longer allowed on new leases since that time period in this state as well as seaweed is not allowed, along with other species that may be of interest in the state. The state has very restrictive regulatory language about what can be and cannot be done with marikoture. There are no predefined lease areas in the state, so there's nothing for a grower in the state trailer to go up and say that plat looks like something I would want to apply for to lease. There's no kind of help in the state for doing that. In addition, there's very low application for plat leases in the state. So Jordan felt like that may be some life or dissuade the state to even make an effort to change the framework in the state. And then finally kind of limited estuary space where the cultivation space in each estuary may be unavailable due to environmental concerns, including eelgrass and finite shellfish growing areas in that space.

(15:54):

So next slide, Terra. So using the database, Jordan was able to put together two different possible frameworks that Oregon could adopt. So the first is a mixed use leasing program and the second is a commercial viability program example. So the mixed use lease was based on the framework elements from Mississippi's off bottom oyster aquaculture training program and Florida's management agreement program. And the commercial viability program was based on Rhode Island, Maine and South Carolina programs. And then Jordan looked at Oregon's current statutes and regulations to map out possible legislative and administrative changes that may be necessary for that pilot program to become legally compliant in this state. And so particular with the mixed use leasing program example, he thought that that would be a good opportunity in the state to partner with tribal nations to propote mariculture stewardship in the state, and in particular oyster restoration efforts.

(17:01):

And then for the commercial viability, he was thinking that that could be a good way to test plant site accretions for viability, test different species, generate social acceptance for mariculture in the state, and expedite the leasing process for experimental site leases. So next slide, Terra. And so then finally, we've identified some potential next steps for Oregon, and so that includes developing a lease amendment process, which is in a clear path in the state. So looking at our research about what's happening in other states and trying to think about what steps they might want to go forward. The next is amending Oregon statute to allow additional species to be grown in the state. So as I mentioned, right now, oysters are the only ones allowed for new leases, and there is interest for seaweed, kelp, abalone, crab, mussels, and clams. So that would be a change that the state may be wanting to make.

(18:09):

Additionally, the Oregon Aquaculture Association and Oregon Sea Grant both did studies in 2023 and 2022 respectively, and they both identified that it would be helpful in this state if there was some kind of coordinator to help prospective farmers get through the leasing process just because there is no lead agency that is in charge of leasing in the state. And then finally, again, this opportunity to continue working with tribal nations and adopting new policies that would allow them to expand the restoration work that they're trying to do in this state. So with that, I will pass it off to Alex to overview what she has done in Rhode Island.

Alexandra Tamburrino (19:00):

Awesome. Thanks so much, Cathy, and thank you to everyone for being here today. So as Cathy and Terra said, my name is Alex Tamburrino. I am a staff attorney at the Marine Affairs Institute, which serves as Rhode Island Sea Grants legal program. So today I'm sort of just going to talk a little bit about a project that I spent almost a year working on independently, which was updating chapter nine of Rhode Island's Shellfish Management Plan, which is the legal chapter. So with that, let's get started. Next slide please, Terra. All right, so I kind of wanted to center the presentation by first talking a little bit about what the Marine Affairs Institute is and what we do. So the Marine Affairs Institute is located at Roger

Williams University School of Law, which is in beautiful Bristol, Rhode Island, and we also serve as Rhode Island Sea Grant's legal program.

(19:53):

And so I'm sure that most of you on this call are familiar with the National Sea Grant Law Center, I would hope, but we focus mostly on coastal and marine law and policy research in Rhode Island, as well as sort of regionally in New England. Most of the work that we do is for external partners, so nonprofits, government agencies, industry associations who come to us with some type of legal question, which we then research and produce a deliverable for. And so sometimes like this project that I'll be talking about today, staff like myself work on the projects and the research, and other times we pair law students on these projects. So that being said, shameless plug. If you have a coastal and marine law and policy question that you or your organization needs support on, feel free to reach out to us at the Marine Affairs Institute, the National Sea Grant Law Center, or one of the other great Sea Grant legal programs.

(20:49):

Next slide, please, Terra. Okay, so now I want to talk a little bit about the project and the goals for the project. So first, just starting off with what is Rhode Island Shellfish Management Plan? And I'll be referring to it as the SMP throughout the presentation. The SMP was first created in 2014 through a collaborative process facilitated by Rhode Island Sea Grant, which involved stakeholders from across the shellfish community in Rhode Island. And the SMP's main goal was to identify key issues with and describe aspects of the shellfish industry in the state, and then craft different management and science recommendations for state agencies to use and ensure sound management of shellfish resources into the future. So the original document includes 11 different chapters and is over 350 pages long, and it covers a wide variety of topics, so ecology and biology of shellfish, wild harvest in aquaculture, different risks to human health and shellfish populations, and of course, the chapter that I worked on, existing statutes, regulations, and laws that broadly pertain to shellfish.

(22:07):

So what were the main questions and goals? The shellfish management plan or SMP was meant to be this living document as management priorities, science, and the law changed. And so folks at Rhode Island Sea Grant have been working to update the SMP to accurately capture all of these changes that have occurred in the last over 10 years. And that's really where we came in to update that chapter nine of the SMP on the existing statutes and regulations and laws. So the main goal for the updates was to capture these changes that had occurred in the last 10 years and make sure really that we included any new provisions that may not have been around at the initial creation of the document. Another really big goal for the project was to update all of the citations within the chapter, and that's really because Rhode Island's Code of Regulations was re-codified in 2018.

(23:02):

So that effectively made all of the citations inaccurate, even if the language within the regulations themselves were the same. So that was a huge piece of this process. And so who were the partners? In keeping in accordance with the way that the original SMP and the legal chapter were written, Rob Hudson, who is actually on this call, who's the fisheries and aquaculture specialist with Rhode Island Sea Grant, and I put together what we call the technical advisory team of folks at different Rhode Island regulatory agencies and divisions within those agencies to help us meet these goals for updating the chapter. So these folks included people at the Rhode Island Department of Environmental Management, and that included from the Division of Marine Fisheries, their Office of Water Resources, and their law enforcement division. We also brought in our aquaculture coordinator at the Coastal Resources Management Council, and that was particularly for the expertise on aquaculture-related regulations.

(24:06):

And then we also included folks from Rhode Island's Department of Health, Division of Environmental Health and Center for Food Protection, because as I mentioned, this chapter is not just about aquaculture, it's about shellfish regulations broadly, which I'll chat about in the next slide as well. So logistics and deliverable. Once we kind of knew what the task was and who we would be working with, we got to work on this sort of year-long project. Since the chapter was already almost a hundred pages long, we worked on editing it in small chunks. We split it into four pieces that were a little bit more manageable, and we met with the technical advisory team to review each of those chunks. And yes, the final deliverable was an updated version of the chapter that hopefully will serve as kind of this high level reference document to explain the existing shellfish-related laws.

(25:03):

Next slide, please, Terra.

(25:06):

Okay, so like I said, I know that this webinar is mostly about aquaculture and law aquaculture as we're calling it, but like I said, the SMP hit on much more than just aquaculture, so I wanted to briefly explain some of the different topics that the chapter covered. So the chapter began with definitions and an explanation of key terms. So after chatting with the technical review team, they asked that we include a couple of additional subsections that weren't initially included that explained what a management plan is and what different kinds of management plans there are in the state. Another component that we added was an overview of the hierarchy of different types of authorities within the state. So explaining the difference between statutes, rules and regulations, guidance and policy, and again, the management plans. The next section we discussed was just the management of shellfish in the state generally.

(26:00):

And so we included language straight out of Rhode Island's constitution that provides that the people of the state have the powers and privileges to enjoy and freely exercise all of the rights of fishery and privileges of the shore. But we made sure to highlight that even with these powers, state agencies still have the authority to regulate fisheries and the shellfishery in this case. And this section also included a little bit of a discussion of different agencies involved in regulating shellfish and aquaculture in the state, as well as some of the advisory bodies that are involved, like our shellfish advisory panel, which has a major role in reviewing aquaculture lease applications. Another section discussed resource protection kind of broadly. So we started with a really thorough overview of water quality in classifications, and this was based both on our state regulations as well as everyone's favorite, the National Shellfish Sanitation Program's model ordinance.

(27:02):

And this section also discussed some of the intricacies of wild harvest in the state. So that was looking at licensing, catch limits, size restrictions, harvest methods. And then that section was the section that also talked about aquaculture, which I'll discuss more deeply on the next slide. A big bulk of the chapter actually focused on public health protection. So this is where we worked really closely with the Department of Health because there was just so much information to include. And because of that, we weren't able to fit everything, every little regulation that was related to public health into the section without it becoming too unruly. So we ended up directing readers directly to the Department of Health regulations, and hopefully that would provide them with an up-to-date resource to check if they were curious about maybe a specific aspect of shellfish and public health. And so in this section, we also went into details on dealer licensing and operation, HACCP requirements and transportation requirements.

(28:09):

And then we also talked a little bit about shellfish related illness, and this was an update that we made because initially this section didn't have a ton of information on vibrio, but in 2023, Rhode Island had its first vibrio outbreak. And so now there is this more established vibrio control plan that we mentioned in

the chapter. And there were a couple more sections that were a little bit smaller towards the end of the chapter that touched on federal oversight, so things like the Magnuson-Stevens Act, Army Corps Engineer Permits for Aquaculture, Clean Water Act, and a few other federal statutes. Another section also discussed some of the procedural related provisions that might not be directly shellfish specific, but have some type of role in shellfish management. So looking at the US Constitution and the Commerce Clause and the Takings Clause. And then the chapter ended with an updated component that we added that is a reference guide for up-to-date statutes, regulations, and other additional resources.

(29:15):

And obviously this chapter is meant to be as up-to-date as when we finished it, but it's still a snapshot in time. So we wanted that reference section to be able to lead readers to the most current and up-to-date laws. Next slide, please, Terra.

(29:33):

Okay. So as I mentioned, in the grand scheme of the chapter, the aquaculture section is actually pretty small, but many of the requirements in some of the other sections, like the public health section, resource protection section are also broadly applicable to aquaculture at large. So on this slide, I really just wanted to highlight a few of the big changes in additions to the SMP. Section on aquaculture specifically. So the first thing that we ended up including were some of the updated regulatory provisions on operational plans and bird deterrents. So based on the NSSP's MO and Rhode Island's regulations, aquaculturists must have an approved operational plan before operations can begin. And based on Rhode Island's regulations, the operational plan had to include mitigation or deterrent measures that'd be used to minimize any potential impact of birds on operations using floating gear. And so through some other research that I've conducted, I learned that a lot of Rhode Island's information on bird deterrents, such as what types of deterrents they allow or mitigation measures that they recommend are strictly kind of guidance.

(30:55):

So those weren't included in the shellfish management plan itself, but it was important for us to point out this new edition in the requirements for operational plans. So second, we also provided some information on offshore aquaculture, which was not included in the 2014 version of the chapter at all. So as of the writing of the document, which I should have mentioned started last year, summer of 2025 and concluded just this past summer. So as of the writing of the document, Newport Mussel Farm began the permitting process for the first commercial offshore aquaculture facility off of Rhode Island's coast. And the intricacies of the federal permitting process for offshore aquaculture were a little bit outside the purview of my edits to the chapter of the document, but we did make sure to note that the permitting process requires applicants to engage in a federal process requiring consultation with various agencies.

(31:55):

And we also cited to additional resources, some of them are Stephanie's resources on federal offshore aquaculture permitting for those looking for more information on it. I also wanted to briefly discuss Rhode Island's rules for seed transfers from other than approved waters. So in my initial review of the NSSPMO as well as our Department of Environmental Management and Coastal Resources Management Council's regulations, I noticed a few discrepancies in the amount of time that seeds transferred from other than approved waters had to remain in approved waters before being harvested for consumption. And so ultimately it was determined that 120 days was the appropriate amount of time and what was required in the regulations, but this was something that I found really enlightening to discuss the requirements with both agencies and how to come to terms with different regulatory provisions. And then one other thing that I wanted to quickly hit on, although not within the aquaculture section of the chapter itself, we ended up including some information on the required Army Corps authorizations that aquaculturists have to receive.

(33:12):

And so I worked extremely closely with folks from the Army Corps in crafting the subsection, especially because when I was writing this portion of the document, the nationwide permitting system hadn't yet been released. And so at the time, the authorization was still being issued under the 2025 Department of Army General Permits for the state of Rhode Island and Narragansett Indian Land Trust, that's the title of the authorization. And we laid out this general process for applying for the authorization, but at this point it ends up being mostly irrelevant now that the nationwide permit replaced the general permit. But in planning for that change and when it would occur, we provided a link to the Army Corps's regulatory request system and noted when the nationwide permitting process would take effect. And real quick, it's not on this slide, but I did want to briefly mention that we ended up deciding to include a link at the beginning of the aquaculture subsection to Rhode Island's aquaculture permitting website, which was created by the Coastal Resources Management Council and Department of Environmental Management.

(34:24):

And we included this just to provide an easy way for those applying for aquaculture permits to understand the process. We didn't want to reinvent the wheel or try to fix something that wasn't broken. So providing a link to this website upfront just allowed the chapter to kind of withstand the test of time and provide a source of up-to-date information for anyone in the industry or looking to enter the industry. Okay, next slide.

(34:52):

Excuse me. So to briefly wrap up, I kind of spent a year working closely in collaboration with so many different regulators at multiple agencies, speaking to people within the industry for their input and thoughts. And in updating the document, we hope to provide a resource that would give some additional information, updated citations so that folks could actually access information and know where within the regulations to find certain information. So right now the updates to chapter nine is not currently published, but you can find the 2014 version of the shellfish management plan in the NOAA repository. Also, if you're interested in reading some of our other aquaculture related research, check out our research page or feel free to email me. Thanks.

Katie Hill (35:43):

Awesome. So I have a question for you, Alex. You can't mute yourself yet. Do you have any idea? That's very interesting. Do you have any idea when a permitting decision will be made for that mussel farm? They put in the permit application in February, it's been a little bit, I mean it can take a really long time. You probably don't have any idea. Nope.

Alexandra Tamburrino (36:06):

No. I wonder, Rob, do you want to chime in?

Rob (36:13):

I don't have any further updates as far as when that's going to be officially terminated.

Katie Hill (36:18):

Yeah, it's a big project, so I'm not surprised that if you had any scuttlebutt, that'd be great. Hey everybody, my name is Katie Hill and I'm with the Carlvinson Institute of Government at the University of Georgia. This is where I sit, where I'm employed, but I'm also the director of the Georgia Sea Grant Legal Program. And I apologize in advance at how ugly my slides are compared to everybody else's because I'm looking at their beautiful slides and thinking, goodness, mine are not so great. So the two projects you guys just heard of are complete or largely complete, and I'm going to talk to you about an ongoing project that maybe involves aquaculture, maybe it doesn't, and maybe that matters and maybe that doesn't. And

I'll tell you what I mean about that in just a second. But first a little bit because everybody gave a little bit of background on who they are and how they work.

(37:14):

So like I said, I'm housed at the Carl Vinson Institute of Government and we are the largest and oldest institute of our kind in the United States at a university. And we do so many different things here that it's very difficult to describe them all, but we basically provide our guiding stars that we provide neutral, non-biased work for governmental entities or work that would support the needs of governmental entities. And I'm also the director of the Georgia Sea Grant Legal Program through a partnership between our two institutes. And I supervise Georgia Sea Grant legal fellows who work with me on grant funded projects, including this one. All right, Terry, you can go to the next slide.

(38:09):

And speaking of legal fellows, I did them a great disservice by not including my legal fellow, Tayla Hapney on this slide and the law student who's also working with the other legal analysis team. So I apologize for that. But just to let y'all know, this is a NOAA-funded research project related to shellfish stock enhancement in federal waters, and I'll get to that in just a second. But before I do that, I wanted to tell you, this is kind of a big team we have here. There's the technical part of the team who are from the Virginia Institute for Marine Science and Rutgers University, and they've been doing surf clam and scallop enhancement work for a very long time. We have a private facilitation team, the Consensus Building Institute who are helping us work in the project. And then we have the legal analysis team, which is myself working with my law student Tayla and other students who worked in this project.

(39:13):

And then Thomas Ruppert, who is at William and Mary School of Law. And I could not fit all these pictures on the page, but we also have a shellfish enhancement advisory committee that includes representatives from NOAA, state agencies, industry professionals, and others who are helping guide this work. So what exactly is Katie Hill talking about? The next slide, please. I was clicking the button and I'm not in control. So what we're looking at, and this research, we want it to be species agnostic. So if this was going to happen for other fisheries in the future, we'd like this work to be hopefully applicable to others. But really this work was powered by the interests of federal partners and the industry and looking at enhancement of Atlantic sea scallops and Atlantic surf clams.

(40:25):

Mostly they're located in state waters for sure, but the commercial fisheries I think are primarily based in federal waters off of the North Atlantic and down to the top of the mid-Atlantic coast in the United States. And the interest in shellfish enhancement, which is kind of augmenting these existing fishing grounds or maybe creating new fishing grounds for the commercial fisheries is driven by two things here. For both of these species and for all shellfish species, the impacts of climate change, ocean warming, ocean acidification, things like that is of great concern. And then for the surf clam in particular, offshore wind development has the potential to impact and restrict access to some of those fishing grounds. So people are saying, okay, if we're going to have impacts in stocks in the future or we're not going to be able to access fishing grounds because of offshore wind, what can we do about that?

(41:33):

And thankfully, there's already been some research done into shellfish enhancement, which next slide, Terra. Oh, and sorry, this is my point about state and federal waters. Y'all probably already know this, but we have state waters in the United States, which are usually out to three nautical miles offshore. And then we have federal waters, the exclusive economic zone, which goes out past that three miles, 200 nautical miles offshore. And what we're looking at is whether or not we can conduct a shellfish enhancement activities. What legal authorities and things do we need to do in order to make this happen in federal waters? Okay, now you can move on to the next slide. Now this, I will say, this is what a lot of this

project has been myself and Thomas Ruppert, the other attorney, trying to figure out, because if you're a lawyer, you know, okay, if you're going to be doing some sort of analysis, you need to know what the facts are.

(42:36):

What are you looking at? What types of activities are we talking about? And this is people on this call who are maybe more familiar than I am with shellfish enhancement are probably looking at this and going, "That's not what the wildspat collection bags would look like, Katie. I know I messed up a little bit in some of these, but on my big whiteboard that now has the stuff I have to do behind me, one day I was like," Okay, I can't find anywhere like a big graphic that shows the potential ways that we could be doing shellfish enhancement in federal waters. "So I made one myself to help me and my students and others visualize this. It is not perfect, but I think it gives a very broad overview of the way this might work. So the first thing that you can do is transplanting, which has been done in at least one research project in federal waters.

(43:29):

And in this situation, generally though, there's different permutations here. What you could, and I use scallops, by the way, as an example here, though this could also be done with surf clamps. And the one example that I know of that has been done was with scallops. So for transplanting, back to transplanting, you might have an area where there's a whole bunch of little scallops, but they're not growing that well. They've been staying the same size for a long time and they're not getting any bigger. And you have another area where you think, great man, this is great habitat where we can make these buddies grow a lot bigger to where they would be to marketable, commercial, harvestable size. So you take the scallops or surf clams or other shellfish from one area, move to the next area, close it from harvesting, let them grow out, and then harvest them.

(44:26):

So that's one type of shellfish enhancement you might do. You could have shellfish enhancement where there's no gear in federal waters. I'm really interested in the mussel permit that Alex is talking about because that involves a lot of gear in federal waters and that's clearly aquaculture. So in this second scenario, you might have the little baby shellfish seed spawned in a hatchery, or you might collect it in state waters, and then you might have intermediate grow out, which there's several methods here. Those are supposed to be these things called lantern bags, I don't think I drew them right, that could also maybe happen in state waters. And then just as with the transplanting scenario, you'd grow them to a size where they'd be all good out in the wild and you go put them in a place in federal waters where they could grow to the proper size.

(45:29):

And then you could have a third option, which would be shellfish enhancement where you do have gear, things like fixed lines and other stuff in federal waters. So that would be the same as number two, but you would have some of the stuff like the collection bags and grow out lines, stuff like that, or wildspat collection lines actually in federal waters. And then up in the corner, you can see that there's also the potential for habitat enhancement. That's something that's been brought up, some kind of substrate modification could happen in all of these cases. And there's also, I don't think I have it anywhere on here, there's interest in and there's been some research done on predator control, particularly sea stars or starfish, whatever you'd like to call them, they love to eat shellfish. And in other countries there has been some predator control with those that people are mulling river.

(46:28):

And also my daughter loves me and that's still on the board behind me and I'm never going to erase it. Okay, so that's kind of what we're talking about what is shellfish enhancement? That's what we mean. Next slide, Terra. Ta-da. So if you're going to do this in federal waters, how do you go about doing it?

There's been a lot of research done on the practical, like if we move them, will they grow to the correct size? There's been a lot of research done in state waters on how to grow them with gear. There's been a lot of work done on monitoring and stuff, but I think as of yet, there hasn't been a concentrated effort to identify the potential legal pathways to make this happen. Okay, next slide.

(47:17):

So here's a question that was brought up by some of the folks in our shellfish enhancement advisory committee at the beginning of the process was, "Hey, is this going to be characterized as aquaculture?" Because it might matter or it might just not at all matter. And I'll try to get through this really quickly. Aquaculture's a funny thing in federal waters because we have this thing, the Magnuson-Stevens Act, that is the law that we use, our primary commercial fisheries law in this country, and it doesn't reference aquaculture in there. The National Marine Fishery Service or NOAA Fisheries attempted to do a general permit for aquaculture back in 2010 somewhere for the Gulf and were sued by the Gulf Fisherman's Association. And the Fifth Circuit Court of Appeals said that National Marine Fisheries Service may not permit aquaculture. There was no authority under the Magnuson-Stevens Act for that agency to be giving these general permits for aquaculture.

(48:31):

So you might think, oh, okay, well Magnuson-Stevens, they're also in charge of these shellfish fisheries and federal waters. Maybe this case means that aquaculture and federal waters isn't going to happen, but no. On the other hand, Gulf Fisherman is only binding in the Fifth Circuit and NOAA is currently proceeding with what they're calling aquaculture opportunity areas in federal waters where they're identifying places that would be appropriate for aquaculture. And this includes waters off the Texas coast that are in the Fifth Circuit.

(49:12):

And aquaculture permits, as we've seen from the example that Alex provided a minute ago, are available from the United States Army Corps of Engineers. So it's possible that you could use the core for aquaculture components of a project and not go through National Marine Fishery Service and it maybe could be fine. And then on the other hand, we weren't identifying scallop and surf clam fishing grounds in these aquaculture opportunity areas. I don't know if that means anything or not, but they weren't in there. And also the aquaculture opportunity areas are just basically identifying potential areas for aquaculture and they're not supporting regulatory regimes or permitting actions. So these things aren't saying... It's just kind of a scoping process for where aquaculture might be appropriate. It's not setting up a permit program like NIPS tried to do in the Gulf, and you can find a lot more information about those on NOAA's website.

(50:18):

So the upshot of this is this is something that we're thinking about in this project, whether or not if you want to do shellfish enhancement in federal waters, what the aquaculture considerations might be.

(50:39):

Is shellfish enhancement, is it more like aquaculture like the mussel farm, or is it more like stocking a trout stream where you're raising stuff in a hatchery and then putting it out for people who have a license or a permit to catch? It's an interesting issue that I don't think we're going to solve in this project, but we're going to have to deal with it or at least address the issue as it comes up. And Brian, yes, I'd love to talk to you. I've talked with Doug Cristell a little bit, and if you would love to talk to me, I would love to talk with you. So let's find each other's emails and talk. All right, next slide, Terra. And then again, this is ongoing, so these questions have not been answered yet. We're in the process of getting this going, but if you're going to be doing shellfish enhancement in federal waters, how do you do this?

(51:43):

Two of our big questions are going to be the role of NOAA and the fisheries management councils that develop these fisheries management plans that guide the operation of these shellfish fisheries. You can see some of the questions that we have there. Do you need new management areas? How do you incorporate closed areas for spat growth, possession limits, et cetera, et cetera? We're looking at what permits from the corps might be needed for each stage of enhancement. And then that aquaculture question, there is a nationwide aquaculture permit, but if you think that characterizing enhancement as aquaculture might be a problem, would it be better to go the individual permit route?

(52:32):

It's just something to consider. We're also looking at the legal status of seed ownership since these fisheries are managed as a public resource. How do you maintain that public resource characterization from where you're collecting the spat or growing it in a hatchery all the way to where you'd stick it out into growing grounds? Consideration of Maguson-Stevens Act National Standard four, which is basically all about fairness in the fisheries, and then things like legal requirements for genetics and disease testing. Is this going to be an issue with these fisheries or potentially others? And we're looking at just a few states who are kind of big players in these fisheries to see how this stuff might interact. And I believe that's all I have, if you'll go to the next slide. Yep. So just an overview of a project we have now where we're thinking about aquaculture or aquaculture as we're all going to call it now.

(53:33):

And it might be a deal, might not be a big deal, but it's all very, very interesting stuff. So thank y'all very much for listening to me drone on about what is probably pretty confusing.

Terra Bowling (54:06):

Thank you so much, Katie, Alex, and Cathy and Stephanie for sharing your projects. It's great to hear what everyone's working on. We can open it up for Q&A. If anyone has a question, feel free to raise your hand or just unmute yourself. Check the chat. All right. I guess we answered everything today. That was great.

Katie Hill (54:59):

I want to know, nobody will probably say anything, but of the people who are listening to us, do you think that shellfish enhancement is aquaculture? I'm not asking for help. I'm just curious. I think the answer's probably it depends, but...

Terra Bowling (55:21):

We should have made a poll.

Katie Hill (55:22):

Nobody knows. It's a mystery. It depends. Yes, Kevin. Exactly. Restoration aquaculture. Yeah, I mean, this is kind of what we're talking about. It's a good yes. I like that. Annie, Fagan. All right. Thank you, Robbie. Copy. Email will be sent.

Terra Bowling (56:10):

Well, I don't see any questions, so out of respect for everyone's time, we can just go ahead and wrap up. I want to thank everyone so much for joining us for the webinar. I hope you all enjoyed it, and thank you to our presenters. This will be on our website in the next week or so. And if you're interested in our webinar series for next year, just stay tuned to our website and follow us there. Thank you, everyone, and have a great afternoon.

Stephanie Otts (56:37):
Thanks, and happy Thanksgiving.