

Cathy Janasie ([00:02](#)):

Welcome to our webinar today, we're going to highlight the work that our summer students have done. We have three of our students here who are going to present. Ilinca Johnson is going to be going into her third year at Vermont Law School. Blakely Durham is going to be entering her second year at University of Oregon School of Law and then Savannah Schiebel is in the last stages of her master's degree in Marine policy at the University of Miami. So we're excited to hear what everyone has to say about what they worked on this summer. Just before we begin, we always like to let everybody know a little bit about the National Sea Grant Law Center. In case you're not as familiar with us, the National Sea Grant Law Center was founded in 2002. We're housed at the University of Mississippi School of Law and our mission is to conduct legal research, education, outreach for the wider Sea Grant network of 34 Sea Grant programs and their stakeholders. If you're interested in our work and what else we have going on, we encourage you to visit our website and also to follow us on social media.

([01:20](#)):

And then just a few quick housekeeping notes before we start. We do have everybody on mute right now to cut down on background noise. Please feel free to use the chat box at any time. If you have questions about the presentations today, we will have plenty of time for q and a at the end of the webinar, but we can also try to answer questions as we go along. And then if you have any technical issues, we're the lawyers so we're never sure if we can help, but Lauren Fremin is on. She is our project coordinator and webinar host and she can try to help you out if you private chat her. And then finally, just a quick note, the webinar is being recorded and we'll post it on our website as soon as we can after the webinar. It usually takes a couple of days to get the transcripts and everything finalized, but be on the lookout for an email about us posting on our website. But we don't want to delay any further; we're going to get started with our first presentation from Ilinca Johnson and I'll pass it over to you Ilinca.

Ilinca Johnson ([02:31](#)):

Thank you. Hi everyone. So I was a summer research associate with National Sea Grant Law Center and the project I was working on was in collaboration with the Nature Conservancy Sea Grant Maine and the Maine Department of Marine Resources researching what Maine's legal pathway to shellfish and seaweed restoration permitting could be like for doing these kind of projects in coastal waters in Maine. So yeah, next slide. So I'm going to kind of walk you through the main problem, which I kind of already stated, but then also the sub problems that come with that, and then what a shellfish and seaweed restoration projects -- what are those and what are the main types of restoration that kind of go into this. Then what my on ground experience was when I got to go to Maine and speak with stakeholders in the system. Then the possible legal approaches and kind of going through what the current leasing and licensing system looks like versus what it might need to look like for restoration projects and what that process looks like involving other agencies within Maine with it looks like potentially from this research the Department of Environmental Protection and the US Army Corps of Engineer will also have to be involved if you're placing a permanent structure in the water or using oyster culch.

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And then I'm going to kind of summarize what that restoration application process looks like and a couple other considerations. Next slide. So the big problem is just how could a restoration permit work with shellfish and seaweed in the state's coastal waters? And a really big consideration in that is just what does that mean? How do we protect public health, especially if the shellfish or these organisms that maybe they're also commercially utilized, how do we ensure that if they go into waters that potentially are of lower water quality, that they stay there and they're not going, they're not going to get poached. That's the main issue. So what kind of enforcement does that need or what kind of measures need to be put in place for an applicant? And then just generally overall, legally, what is already conducive to restoration and what are barriers that are currently in the restoration system or potential pathway. Next slide.

(05:10):

So restoration projects are basically initiatives rebuilding populations of native species like shellfish and seaweeds in coastal waters that recreationally and commercially yield a wide array of benefits for local communities. Shellfish and seaweed are kind of on, they're in lower trophic levels, so when you kind of build up their populations, that tends to have benefits throughout the ecosystem that supports them. Often restorations kind of thought of as in building up back to historic either like habitat qualities or species abundances. Though of course as we're going to talk about in the next slide, it's not quite like that, but that's one of the main benefits. It creates a lot more abundance, which is great opportunities for visiting habitats and then also potentially that creates commercial pathways down the line. It also means that it creates opportunities in communities for environmental stewardship. You could through these programs like we've seen in other states, end up helping to protect the environment or improving it as well as research and education law opportunities for students in all the way from primary to university level doing research as well as just generally improving water quality and expanding potential economic opportunities. Next slide.

(06:51):

So the interstate shellfish sanitation conference doesn't really have one definition for restoration. Rather they say that restoration is defined by the activity. It's defined in several activities which I have here. So there's repletion, which is when you're kind of going back towards the historic abundance by adding or addressing habitat issues to try to boost shellfish populations. Then there's also reclamations, so there's actually focused more on kind of recreating the natural habitat that has been there. Enhancement is when you're adding to what's already existing in the wild. Aquaculture itself is a form of restoration because it improves water quality in addition to creating an end product commercially. Then there's also mitigation. So you have a point source pollution on shore that's coming to the water and you're adding shellfish or seaweed to improve water quality. Though this seems to be something policy-wise that they're hoping not to have shellfish programs for generally in other places, and these projects can also help with returning native species and eliminating invasive species in the area. Next slide.

(08:23):

I got to be in the grand in Maine. I was hosted by Annie Fagan of Maine Sea Grant who really arranged my whole week and helped create a really wonderful experience for me meeting our stakeholders. The goal of all those interviews was to essentially hear what the good and the bad of the current aquaculture leasing and licensing system was, as well as how various stakeholders felt about creating a restoration license or an avenue for that. And if there were things that should be considered outside of what I might encounter in a legal structure that are still important to Maine culture or to going through this process already, that would probably impact a restoration permit too. Generally overall, no, all completely throughout. Everyone was very open and receptive to the idea of doing restoration from researchers to NGOs to industry and farmers, and there was a little uncertainty about what restoration actually is. There were questions about is this historic? Is this we're building water quality? But as we've seen it is yes, like all those activities and generally with the current system, there was a desire for greater flexibility in, for example, there was some difference of opinion on the amendment process with leases. Some felt that it would be very difficult if you did not think ahead of time of a potential issue that could occur, how you would address that later on, and they felt somewhat their processes were getting blocked. And so they were a little bit frustrated with that and how long the leasing process takes. But that's also why the state of Maine was interested in learning about how to improve or streamline a restoration process of course, and then everyone overall thought biosecurity training to protect Maine waters and ecosystems was very important and they generally like that a lot. Next slide. So this is the fun part. So how can you do restoration? There is actually already a couple mechanisms that exist and then there's one that would probably be the most accessible to the widest audience, but already in the state of Maine, you could do your own restoration project. You may not even need a leaser license, you could just bottom plant oysters.

As long as you have no permanent structure, you could just do that. However, you would have no ownership rights over them.

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Someone could come along and harvest them, so there would be no enforcement around it and you would not own them. So it's a little bit wishy-washy as a restoration avenue. Then what also currently exists, and it's much more legally sound, are doing conservation closures in Maine municipalities to have shellfish conservation ordinances. So long as you're aligned with the statutory requirements in the state of Maine, you can theoretically already do restoration projects in your municipality jurisdiction in the zone. You just need to get everyone on board. But if you did get everyone on board, you could potentially do a shellfish or seaweed restoration project and it would just be there and it would not, there would be no issue with renewal except if the municipality or the commissioner of DMR says, we're revoking this or we're amending this. But otherwise it would just be there. And then the route that would be the most accessible for individuals, nonprofits, educational institutes, potentially even farmers, would be to have a lease or license available for shellfish and seaweed for restoration projects that would probably have to go through that would have to go through the Department of Marine Resources aquaculture division, and then a second process for building a permanent structure like an artificial reef or for using oyster culture, which you would have to do through the Department of Environmental Protection in the US Army Corps of Engineer.

(13:04):

Next slide. So we're just going to talk a little bit more about what that process looks like. So the leasing and licensing is for using these organisms that are commonly used in aquaculture comes from DMR currently. There are a couple of things about it that wouldn't make it perfect for shellfish and seaweed permit restoration projects because with the current leasing licenses, you can't have any permanent structures in the water. There's an assumption that anything you put in you'll need to be able to take out. And with restoration projects, the long-term vision would be that they would stay in the water permanently. You would never remove a reef that you plant in the water. So next slide.

(13:52):

But that said, there are three generally utilized pathways for leasing and licensing in Maine, and there are great models for what a restoration permit could potentially look like. For instance, the standard lease, it lasts up to 20 years and it's renewable, so that kind of has that long-term aspect. It's also ensuring there's an enforcement and a legal ownership over it, so that's really great. But then of course with restoration projects, depending on the purpose and the scale and also the capacity of an organization, you might want something smaller scale. You might want something larger scale. So there are still some questions to be answered. Next slide.

(14:47):

And then there's the component of using culch or oyster fat, which is when you put little baby oysters on a oyster shell or they like to all kind of merge together, and so that's what culch does. You need to be able to permit that through the Department of Environmental Protection. And if you're using concrete or stone, through the US Army Corps. DEP under the Natural Resource Protection Act in Maine permits activities occurring near or on protected resources. So that happens through permit by rural likely for restoration projects with aquaculture, and that would apply in title and subtitle lands. So likely under section 12, restoration of natural areas or section 13 habitat creation or enhancement in water quality improvement activities, you can find your route to doing your restoration project. Section 12 applies more to removing invasive species, but surprisingly, but then like Section 13 does specify building artificial reefs. All right. Next slide please.

(15:54):

So just to give an overview of what that process will likely look like. An applicant would submit a notification to DEP of intent to do a shellfish restoration activity under PBR. Then the applicant would need to seek approval through release or license from DMR to utilize the species regulated by DMR. But then once they have that approval from DMR, they would submit that approval along with the rest of their permit by rule application to DEP and to the Army Corps of Engineers for approval. The Army Corps of Engineers will accept the application to DEP as the equivalent of all the information that they need. Then that permit the PBR becomes valid either 14 days after receipt or with written approval by DEP and the Army Corps, whichever is less or otherwise it's revoked in those 14 days, but you would get that revocation within two weeks. It would happen very fast. Next slide. And then we just generally with this inquiry, we're still kind of looking into what potential enforcement mechanisms could be the sort of social license you need for doing these kind of projects. It seems in any case, having community engagement and general support is important for doing any of this. And then we're also looking at successful structures in Connecticut, Rhode Island and Washington for further examples of what's working there and what could potentially work in Maine. Okay, next slide. Thank you.

Cathy Janasie (17:34):

Thank you Ilinca. So we're going to hold questions for the students until after all three presentations, but again, feel free to put any questions you have for Ilinca in the chat and we'll either address them through the chat or at the end of the webinar. So we will move on to our next presentation and I'll turn it over to Savannah.

Savannah Schiebel (17:58):

All right. Hi everyone. My name is Savannah Schiebel and I am a graduate student at the University of Miami completing my master's thesis with the Sea Grant Law Center, and that focuses on regulatory approaches to marine mammal interactions in Florida aquaculture. So a little bit more about me. I graduated from the University of Miami Rosenstiel School of Marine Atmospheric and Earth Science in 2024 with a degree in marine biology and ecology and minor in marine policy. And I am continuing my education there in the master of professional science program studying marine mammal science, which is an accelerated master's program that involves the completion of an internship and independent project in collaboration with an agency, business or institution, and then culminating in a final report and oral presentation. And I have also included some of my professional interests on here, but the majority of my work focuses on marine mammal policy and conservation.

(19:09):

Next slide. So far in my internship, I have written an article for the Sandbar publication where I discussed a legal challenge to NOAA regulations in Hawaii that restrict human interaction with spinner dolphins within 50 yards. And I'm currently working on a case study and developing multiple infographics as well of the ocean era offshore aquaculture proposed project where I am highlighting the various permits, reviews and challenges that have occurred. Next slide. So to go a little bit more in depth on my case study, Ocean Era is a company that's advancing the development of offshore aquaculture technologies with two previously successful trials in Hawaii. And their new endeavor in the Gulf of Mexico is the Velella Epsilon Project, which would become the first offshore aquaculture facility in the Gulf and the first Finfish facility in US federal waters. This pilot project is expected to be a single net pen of red drum located 45 miles off the coast of Sarasota and will be active for one production cycle.

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And the goal of the project is to provide data and educational opportunities that can potentially inform decision makers on offshore aquaculture. However, the permitting process for this can be quite complex and lengthy. The company initially applied for permitting in 2018 and was eventually issued a national pollution discharge elimination system by the EPA section 10 letter of permission by the US Army Corps

of Engineers and then a finding of no significant impact for the environmental assessment they conducted in compliance with NEPA. But there have been multiple legal challenges to these permits. An animal advocacy group, Friends of Animals, challenged the 2020 permit for violations of the Clean Water Act, Endangered Species Act and the National Environmental Policy Act. And their newest petition for review that was filed just this past month argues that the EPA improperly relied on their analysis from those previous permits from 2020 and 2022 when they issued the new 2025 permit. Next slide.

(21:44):

So the development of offshore aquaculture projects like the Velella Epsilon, they kind of provide important context for my graduate research, which as I mentioned focuses on regulatory approaches to marine mammal interactions in Florida aquaculture. And one of the claims in the Ocean Era legal challenge that is significant to my research is the violation of the Endangered Species Act where they suggest that the EPA inaccurately determines there would be no significant impacts to threatened or endangered species or critical habitats. And NOAA is also required to put out a list of commercial fisheries that may experience marine mammal incidental take or mortality under section 118 of the Marine Mammal Protection Act. These fisheries are categorized based on the frequency of these interactions and their published annually. So in the publication for the 2025 list, they proposed the addition of various aquaculture facilities based on possible incidental take or the type of gear used, which is also an important backdrop for my research. And the purpose of my project is really to assess the current state of knowledge regarding marine mammal interactions with aquaculture and then examine the legal framework both for US aquaculture and for marine mammal oversight and some of the management strategies and emerging technologies that exist for mitigating interactions. And then discuss the implications of this for the growing aquaculture industry in Florida waters with the goal of clarifying regulatory approaches and then addressing any existing gaps for marine mammal protection.

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So I started my work looking at a variety of wildlife interactions with aquaculture facilities around the world, and that included species like fish, sea turtles, sharks, and seabirds. And some of the positive associations or benefits of aquaculture to these species include the reliability of forging opportunities resembling an artificial reef habitat, providing shelter from predators or fishing pressure and providing space for birds to roost or nest. And then some of the more negative interactions include contamination, rapid spread of disease, parasitism, anti predator tactics that can be harmful, entanglements, eutrophication, and the increased risk of harmful algal blooms. And finally, reduced population fitness, which can occur for several reasons if frequent foraging on discarded fish feed causes physiological changes. If antibiotics are used to treat culture, fish or the nutritional value of prey, fish is reduced for some of those predators.

(24:54):

So next I did an overview of global marine mammal interactions with the first key interaction being depredation. Piscivorous groups like seals, sea lions, dolphins, porpoises, and other toothed whales may benefit from fish aggregations around aquaculture sites and frequent those areas due to the reliability of prey. And many marine mammal species also have long agile limbs which make them particularly susceptible to entanglement in gear debris or anti predator netting. And larger citations like whales have experienced fatal entanglements in long lines, vertical lines and suspended nets for example. And then previously entangled marine mammals can also continue to experience lasting impacts even if they are released. One global review of protected species interactions with aquaculture compiled a list of 49 documented station entanglements in gear 29 of which were species that are known to inhabit Florida waters. And 21 of those were fatal entanglements. And then since some species particularly seals, sea lions and dolphins prey on farm fish and are viewed as a threat, other anti predator measures like acoustic alarms, like acoustic deterrent devices or harassment devices can be used to prevent this behavior. But these species can become habituated to noise and in some cases prolonged exposure can result in things

like hearing loss. And in other cases, acoustic devices can have secondary effects on local citation populations that rely on sound for communication or navigation and echo location as well. Next slide.

(26:51):

So the use of pharmaceuticals in farms to treat things like disease is also a concern for marine mammals, particularly if they're feeding untreated fish. Because they are top predators, they can accumulate contaminants and experience a variety of health effects. And this is especially problematic for substances that bioaccumulate and store in the blubber over time. And then changes in habitat use can also occur when marine mammals exhibit avoidance behaviors relative to these areas due to either increased noise from acoustic alarms or disturbance from farm operations or human activity in general, or they may alter their habitat use in favor of aquaculture areas and exhibit site fidelity. And then the risks of harmful algal blooms associated with aquaculture can also impact marine mammal species. Historically, these toxic bloom events have led to neurological and respiratory issues in some species and in severe cases have caused mortality. And then finally, all of these interactions do typically result in pretty significant behavioral changes. And since marine mammals typically have long lifespans and low reproductive output, negative interactions like this can be even more harmful. Next slide.

(28:18):

So marine mammal species then inhabit the southeast region of the US are primarily Cetaceans and Sirenians including species of dolphins, porpoises whales, and manatees. And there are several populations of concern in the southeast, including the threatened Florida manatee. One discovery I made during my research is that information on aquaculture interactions involving manatees is almost non-existent. However, it is well known that they are high risk of vessel collisions, entanglements, and impacts from harmful algal blooms, but this species is not of concern for offshore aquaculture projects. In addition, the critically endangered North Atlantic right whale and critically endangered humpback whale are of particular concern. The humpback whale is especially important to consider during permitting processes in the Gulf because it is the only large whale that inhabits the Gulf year round and its behavioral and migratory patterns are relatively unknown and there are likely less than a hundred individuals left. And then some of the other Southeastern populations listed under the Endangered Species Act include the blue whale fin whale, the sei whale, and the sperm whale.

(29:37):

Next slide. Okay, so my next steps in my research involve interviewing experts in the field. I had the opportunity to speak with Florida Sea Grant earlier this week, and I learned quite a bit about some of the newer technologies used to reduce these risks to wildlife. So I am looking forward to putting that into perspective in my research report. I have already reviewed some of the aquaculture governing policies in my literature review, and I'm now focusing on doing an in-depth review of the Marine Mammal Protection Act, endangered Species Acts and the Florida Manatee Sanctuary Act to provide some legal context for marine mammal oversight in the US. And then I will be continuing to develop this project throughout the upcoming fall semester with the Sea Grant Law Center, and I will finish up my studies with my research presentation in December. Thank you.

Cathy Janasie (30:39):

Great, thanks Savannah. So we're going to go on to our final presentation, so I'll turn it over to Blakely.

Blakely Durham (30:50):

Thank you, Cathy. Hello everyone. I spent the summer researching federal and state policy surrounding PFAS in partnership with the South Carolina Sea Grant Consortium. So I'm going to share a little bit about that research. Next slide. First just a little bit about me. I graduated from the University of North Carolina in 2024 with a Bachelor of Arts in environmental studies. And then as Cathy mentioned at the beginning, I just finished out my first year at the University of Oregon School of Law. Next slide. So first,

what are PFAS? PFAS stands for per- and polyfluoroalkyl substances. It refers to a group of thousands of chemicals. The most widely studied have been PFOA and PFAS. You might've also heard of Gen X chemicals. Those are also in the PFAS family. PFAS has been commonly used by manufacturers since the 1940s. They're often used to make products non-stick, waterproof, fireproof, or even stain resistant.

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They're also known to break down slowly in the environment so they can persist for a long time, which has earned them the nickname Forever Chemicals. Given their widespread use and persistence in the environment. There's been a lot of research into the health and environmental effects of PFAS, which has then led to some federal and state action, which is what I researched this summer. The next slide. So first I'm talking about two of the federal actions by the EPA that I researched. The first was a sewage sludge draft risk assessment and the other was regulation that the EPA passed under the Safe Drinking Water Act. So next slide.

(32:28):

So starting with the EPA's draft sewage sludge risk assessment, it published it in January of this year, and it focused on evaluating the risk of two different types of PFAS, PFOA and PFOS in sewage sludge. Sewage sludge is the solid waste that wastewater treatment plants produce, and it has a variety of disposal methods. It can be applied to land like a fertilizer, it can be incinerated and it can also be landfilled. And it often contains PFAS because wastewater treatment plants have difficulty breaking them down. So the EPA calculated the risk of PFAS in sewage sludge to a hypothetical farm family who applied sewage sludge to their land as a fertilizer. And this allowed them to be exposed to PFAS in a variety of ways. They could be exposed through eating crops that were grown in this fertilizer, eating animal products from the animals that graze on this fertilizer. The fertilizer could also run off into the pond so it could potentially contaminate their drinking water and fish. It could also make its way into the groundwater and contaminate their drinking water well. So next slide.

(33:34):

So two of the broader findings that the EPA made is that PFOA contaminated products generally pose a higher risk to the farm family than PFOS contaminated ones. PFOS contaminated products, also, the health risk posed by them generally varied more with changes to environmental factors like climate or the level of soil absorption. Now these are two of the broader findings of the risk assessment. There's a lot more detailed findings in the risk assessment, but it's important to note that those are really specific to the farm family. The EPA calculated those based off the specific facts about the farm family's level of consumption. So it's not going to be reflective of risk to the general public. Next slide.

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So the public comment period for this risk assessment is currently open. It closes on August 14th. You can comment by visiting [regulations.gov](https://www.regulations.gov) and searching for the docket ID listed there. After that comment period closes, the EPA will prepare a final risk assessment. If the risks in that final risk assessment are still over the EPA's acceptable risk thresholds, then they'll likely propose a regulation for PFOA and or PFOS in sewage sludge under the Clean Water Act. The next slide. So then the other federal action that I researched was the regulation under the Safe Drinking Water Act. In April of 2024, the EPA announced national primary drinking water regulation for five types of PFAS as well as a PFAS mixture. And this regulation has two parts. The first part is the maximum contaminant level goal that's listed in the table is MCLG, and that is the level of the contaminant in drinking water, that the EPA estimates will have no negative health effects.

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It's important to note that that is estimated over a lifetime of consumption. That's not just the concentration in one glass of drinking water. Then based off of the maximum contaminant level goal, the EPA sets a maximum contaminant level. They try to set this as close to the goal as possible considering

the technology currently available. Also taking into account the affordability of that technology. So the MCL is what is actually enforceable, and this applies to public water systems. So those are water systems that serve at least 25 people for 60 days out of the year or have at least 15 service connections. So it's not applying to private wells and it's not applying to really small water systems. Also, even though this is federal regulation, it's ultimately enforced by the states. The states have until 2026 to adopt regulations that are no less stringent than this, as well as appropriate enforcement measures for this regulation. So next slide.

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So soon after this regulation was announced, some groups filed lawsuits challenging this regulation. These were then consolidated into American Waterworks Association versus the EPA, and they claim the regulation violates the Safe Drinking Water Act in four main ways. First, they argue that the cost of compliance with the regulation is way higher than the EPA estimated, which makes complying with the MCLs not feasible. Then for three different types of PFAS in the PFAS mixture, they argued that the EPA did not follow the procedure laid out in the Safe Drinking Water Act for regulating those contaminants. And so the regulation is invalid. Then they argue that the hazard index, which was listed as the MCL for the PFAS mixture, is not a regulatory tool that's permitted by the Safe Drinking Water Act. And so that regulation is invalid as well. And then finally, they argue that those three PFAS in the mixture don't actually occur at levels in drinking water that would negatively impact human health.

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And so a regulation is just unnecessary. So this lawsuit was filed in June, 2024, but not much progress has been made since. It's been paused since February of this year so that the new administration can figure out how they would like to proceed. So next slide. Then in May of this year, the EPA issued a press release with two major announcements that impact this regulation. The first is that they announce their intent to reconsider the regulation for those three types of PFAS and the PFAS mixture. They said that they're doing this to make sure that they correctly follow the safe Drinking Water Act's procedure for regulating chemicals. The other announcement is that they tend to extend the compliance deadline from 2029 to 2031 for PFOA and PFOS. This is just to try to give the water treatment plants some extra time to comply with those MCLs. But these are just announcements of intent. The EPA expects to issue a proposed rule in fall of this year and a final rule in spring of 2026 that actually reflect these changes. It's also worth mentioning that the lawsuit is scheduled to resume on July 21st. So it'll be interesting to see if this press release has any impact on those proceedings. So next slide.

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So now pivoting to looking at state action, I focus my research on southeastern states, specifically Florida, Georgia, North Carolina and South Carolina, and what those states were doing to respond to PFAS. Next slide. So one of the general trends that I noticed that there's pretty limited legislation in these states. There's only four statutes addressing PFAS across those four states. Georgia has one statute. In 2020, it banned the use of Class B firefighting foam containing PFAS. There is some exceptions to this rule. For example, it could still be used in emergency firefighting situations. It can also still be used in training facilities designed to prevent the release of that firefighting foam into the environment. North Carolina for its part has two different statutes. The first allows the North Carolina Department of Environmental Quality to order polluting parties to provide a new drinking water supply for homeowners whose wells have been contaminated with PFAS.

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And the second simply requires utility scale solar projects to report any PFAS that they used on their projects. Florida has one statute, it requires the Florida Department of Environmental Protection to set cleanup levels for PFAS in groundwater drinking water and soil if there's no federal regulation for those by 2026. And then finally, South Carolina does not have any statutes so far. It's worth mentioning though that legislation is still consistently being introduced to these states. It's just not having a lot of success

passing. For example, eight different bills were introduced to this year's legislative session while only one of them has passed. That was in Florida and it was extending its deadline for the statute to 2026. It was originally set for 2025. So next slide.

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One of the other trends that I noticed is that agency action tends to be focused on research. Every single state that I looked at had some type of PFAS sampling program. The ones listed on the side represent the statewide sampling projects that we have. The very first of these projects started in 2012. That was Georgia's surface water sampling program. And some of these projects are still ongoing. Those are the ones that are marked in red. On the slide. You can see that Florida sampling tends to focus on contaminated sites. They've sampled fire training facilities that were suspected to have used firefighting foam containing PFAS. They've also sampled dry cleaning sites and waste cleanup sites as part of their waste cleanup program. And then they've also begun sampling Department of Defense facilities that were also suspected to have used firefighting foam containing PFAS. The other three states, their sampling tends to focus on PFAS in water, whether that be surface water, groundwater, rainwater, or even drinking water. Though South Carolina as part of its surface water project did also sample oysters, freshwater fish and blue crabs. Since the EPA released its maximum contaminant levels for those types of PFAS, some of the states doing sampling with drinking water have compared their results to those MCLs. It helps provide context for those results. It also helps demonstrate what water systems might be out of compliance and need to adopt new treatment mechanisms by 2031. Additionally, most of those results of these projects all are available on the respective agency's website. So next slide.

(41:54):

I also wanted to mention some of the private well protections that these states have. As I mentioned earlier, the Safe Drinking Water Act only applies to public water systems. So these state policies are really important to helping fill the gaps left by federal policies. So South Carolina has two different programs. The first is the PFOS, PFOA and Emerging Pollutants Remediation fund that's been approved by the legislator for the past several years. 60% of those funds are designated to private well owners and small water systems to address PFAS contamination. The South Carolina Department of Environmental Services also offers free private well testing. It's prioritized wells for sampling based off their vulnerability to PFAS pollution, either because of their proximity to a known PFAS contamination site or just because of environmental characteristics. They then share the results of those samples with the well owners and if the results are over the department screening levels, they'll also provide a filter certified to reduce PFAS. In North Carolina, they have the statute I mentioned earlier that allows the Department of Environmental Quality to order polluting parties to provide a new water supply. The North Carolina Department of Environmental Quality also has a PFAS treatment assistance program. This provides assistance to well owners if the contamination in their well exceeds state or federal limits. Similarly, the Florida Department of Environmental Protection has a water supply restoration funding program. It provides funding for a new water supply if the contaminant exceeds state or federal limits as well. Next slide.

(43:34):

As part of my work this summer, I also created a story map that goes into a bit more detail than I was able to today on Southeastern State's responses to PFAS. But in addition to just providing information on past and ongoing projects, I wanted to make sure to provide links to resources so you can do a little bit of your own research because PFAS policy is continually evolving, so it's important to know how to stay up to date. So I've provided links to different agencies' web pages so that you can keep updated on any new projects that they have going on. Also link to the bill search pages for legislative websites so you can research if any new PFAS bills are being introduced and then stay updated on the status of those. So thank you.

Cathy Janasie ([44:22](#)):

Alright, thank you Blakely and Ilinca and Savannah. I saw that Savannah, you answered Amalia's question in the chat. So if anybody else has questions for the students, feel free to put them in the chat or you can also come off mute and ask them yourselves. Yeah, Stephanie, thanks for putting that in the chat. I was pretty sure we were doing that, but I didn't want to say, so Ilinca's research, we're going to continue and we're going to have a report coming out in the fall.

([45:16](#)):

So question we have from Siena saying, are there natural deterrence to harvesting shellfish in restoration areas? For example, would people get sick from eating the shellfish if the water is not clean.

Ilinca Johnson ([46:01](#)):

So that is a big deterrent, but the question is, would that be enough to deter potential poachers who could just enter them into the market, maybe being clear where they came from or not entirely. So it's discussing various ways, like New Jersey has a program with virtual monitoring of these kinds of sites so that to kind of ensure that there's no poaching, but marine patrol is a little bit limited, but you would hope, because these are intentionally, they're not meant to be commercial products, they're meant to just enhance the environment and make the water quality better for everyone, that they would just be left there to do that job and not become a commodity to be consumed.

Cathy Janasie ([47:12](#)):

Alright, I'm not seeing any other questions. So I just wanted to thank our students once again. And as I mentioned at the beginning of the webinar, we have recorded this, so we will be posting it on our website and sending out a message for when that posting is up running. And then we are having an upcoming webinar as well. Let me get the date for everyone so we have it. So our next one will be September 17th. And in that webinar we will be giving an overview of the last Supreme Court term as well as updating the effects of previous rulings. And so be on the lookout for that webinar as well. And I will drop a link for you guys to register if you haven't done so in the chat. So you could do that before you sign off. And then with that, I will say thank you again. Thank you for joining and thanks to the students.