Terra Bowling (00:04):

Good afternoon everyone. Thank you so much for joining us today for our webinar series. My name is Terra Bowling and I'm a senior staff attorney at the National Sea Grant Law Center. So in today's presentation, we're going to be hearing about some research from Sea Grant Law fellows. We're going to have from Maryland Sea Grant, Kerry McClaughry, is going to talk about law and policy solutions for climate adaptation and coastal communities. Scott Luis, Georgia Sea Grant Legal Fellow in partnership with the Carl Vinson Institute of Government is going to share about enhancing coastal adaptation and resilience through research on existing ordinances. And then Amy Kraitchman, the NSGLC ocean and Coastal Law Fellow is going to discuss her research on PFAS policy and litigation in the southeast region.

(01:12):

So before we begin, we just had a few quick housekeeping notes. We have everyone on mute right now to cut down on background noise. Feel free to use the chat box at any time if you have questions. We are going to hold questions until the end after the three presentations. If you do have any technical issues, you may private chat with Lauren Fremin, the National Sea Grant Law Center, project coordinator and webinar host. And I also wanted to let everyone know that the webinar is being recorded and we will post that to our website as soon as we can after the webinar. And just before we get started, I wanted to tell you a little bit about the National Sea Grant Law Center in case you are not familiar with us. So we were founded in 2002. We're housed at the University of Mississippi School of Law and we conduct legal research, education, and outreach for the Sea Grant network and stakeholders. And if you'd like to see more of our work, please visit us. There's a QR code there in our website. So let's go ahead and get started. We're going to skip to our second speaker, kind of reverse order and we'll start with you Scott. So take it away.

Scott Luis (02:34):

Good afternoon. My name's Scott Luis. I am a research professional and the Sea Grant legal fellow here for Georgia Sea Grant. I'm at the Carl Vinson Institute of Government. A little bit about myself, I've been here for 18 months as a full-time sea grant fellow, but I also work here as a student doing a lot of different stuff for local communities and local governments in Georgia. And so now I've got an opportunity to do this research project on coastal resilience, looking at adaptation ordinances that have been implemented around the country and also kind of how legal practices are reacting to sea level rise. And so I was an engineer officer before this and so I was in the army travel all over and now I'm really getting exposed to local governments and I'm very excited to help do this research with the Sea Grant Law Center. Next slide.

(03:30):

So real quick, the agenda, I'm going to talk a little bit about just the overarching goals of our research. Then I'm going to go into what are we looking for and break down those goals of the research a little bit more. And then I'm going to talk about some of the research challenges we've had. And then I'm going to go through kind of the main takeaways and trends that we've seen so far. This is the best time to do a presentation during research because I haven't actually published anything, so I get to be very non-committal. And so when you have questions, I can tell you exactly how I feel about it without really having any sort of hard thing that you can yell at me for later. But right now we've done a lot of research all over the country and so these are just trends that we've found.

(04:06):

We don't have any sort of super solid percentages or anything yet, so just take it, this is just, we're halfway through the research right now and these are what we're seeing a lot of. It's pretty common sense, but it's been fun to kind of see how different communities are reacting. The other unfortunate downside of doing ordinance research is that my slides are a little texty and finding sexy action shots of what ordinances look like is pretty difficult. So I'm sorry this is going to be the most exhilarating PowerPoint

we've ever seen, but I hope it's still fun for you. Anyway, next slide. So the real two prompts of our research are, first off, what adaptation ordinances have been implemented across coastal communities in response to sea level rise? And the second prompt is who is doing the work? There's a lot of legal aspects to sea level rise, and then we've kind of just been figuring out who is actually going to have to handle these cases on the ground. You see a lot of legal lawsuits about environmental work across the country, but really who's doing the nitty gritty and helping communities adapt to these changing climate that we're in? Next slide.

(05:12):

So what are we looking for? The main thing is ordinances and codes that are implemented by local governments adapting to sea level rise. And so really the main thing we want to see is we've been using this thing called the para framework. It was created by the intergovernmental Panel on Climate change in the nineties. It was originally four of them. It's protect, avoid, accommodate, and retreat. And those are three methods. You can kind of see this chart, it's more recent. So over time the para framework has kept the name, but it's grown a lot and there's a lot of different interpretations. But ultimately it's just what are strategies that either communities already developed or people developing near the communities. Additionally, what can they do or what are they doing to accommodate with rising sea levels? So you'll see a great diagram. This is kind of the gold standard diagram that I've seen it.

(06:00):

If you Google para framework, you'll probably see it come up and it's just a quick picture. You don't have to know exactly what it is. We aren't sticking to these categories, but I think it's a good demonstration of the kind of ordinances we're looking for because those pictures don't come from nothing, right? There has to be some sort of local ordinance or code or building or guidance that has to come out to make communities do that, to make builders, to make property owners change. And so that's what we're really looking for. So we're kind of using that as a guideline more than a hard rule, but just gives you an idea of the kind of ordinances that we're looking for. And then so next, getting into assessing the extent to which practicing attorneys in coastal states are engaged in this work. When something floods, who is being called?

(06:38):

There's not really lawyers on the coast that are just sea level rise lawyers. And there might be soon, but right now it's not. It's going to be property lawyers, city attorneys, a lot of which. And then we're even seeing things like saltwater intrusion are happening. So there's public health and water quality issues. And so as sea level rise becomes more of an issue, who's actually going to start taking up the mantle to take on these cases when someone has a nuisance claim? You got tort law. And then also how are state bar organizations handling this? Are they changing? Are they adapting? I'll talk a little bit more about that at the end. But we do continuing CLEs, continued legal education programs. Are they adapting to meet sea level rise? Are they staying a different category when it comes to environmental law? So if you go to the next slide.

(07:28):

So the research challenge is obviously the first thing is we are trying to look at adaptation ordinances around the entire country, all 50 states. So what does that mean? It's a lot of land cover, a lot of communities, a lot of digging through things like muni code, digging through City Minutes, digging through news articles and trying to find out what's actually out there. Because a lot of times, a lot places have great plans, they want to do it, but even then when you dig into it, it never gets implemented or it's changed so much that it really doesn't quite meet what we're going to do. So determining what counts has been a huge factor when I'm working with our law students and Katie Hill, my counterpart who's helping me with this, do we take a really broad view? Does any ordinance that could possibly affect sea level rise? So does that mean a coastal community changing their setback a little bit that will affect sea level rise or

that is the community accommodating or adapting to sea level rise? But it may not have anything to do with sea level rise when they did it? So there's pros and cons to both, which I kind of listed out.

(08:31):

If we take every single thing that could possibly be affected by sea level rise, it's going to be quite the overload information and it's going to be almost so broad that it really won't be useful. But if we go too narrow when we're doing our research, we don't necessarily want to go so close that we need a written part of the ordinance that says this is being implemented because of sea level rise. Because there's times we've seen where communities are just adapting ordinances that other communities in their area are adapting to. And there's no actual language that says we're doing this because of sea level rise and we want to be able to include that because that's communities adjusting to the effects of sea level rise. And then the big one for coast communities, obviously the NFIP is omnipresent, that's the National Flood insurance plan through FEMA.

(09:17):

And so that sets a lot of code requirements across coastal communities. And so we have to consider, do we actually want to count those for the purpose of this research? And so it's come like everything, there's always a gray area, sometimes yes, sometimes no. But that's just part of when you have all these codes that some of it's going to be NFIP tied and are we going to tie that to adapting to sea level rise or do they just want better insurance opportunities? And then so the last two points too is that we're not evaluating these for efficiency. So there's ordinances that we see and we'll talk about a little bit shortly, but we're not here to evaluate whether it's good, bad, right, wrong, we're just trying to see what are people doing. Ideally down the road we will get more into the weeds on these, but for right now we're just trying to see what is out there.

(10:05):

We're still in the information gathering phase of this much bigger research product that'll take longer to implement. And then lastly, for attorney engagement, it's really hard to quantify. It's hard. You can't just go to a coastal area and say who's doing your sea level rise stuff. Like I said, it's through lots of different kinds of laws, so it's easy to go to a bar website and see what they have posted. But it's not necessarily to find out who in Brunswick, Georgia, if you have saltwater flood your land, who's going to actually take on that case? We don't. It's you can't just open the yellow book to say sea level rise lawyer. So again, we're just kind of digging through and seeing what's out there right now for attorney engagement. Next slide. So we have four main takeaways right now that I'd like to go over today. First, urban areas generally lead the way in implementing adaptation strategies. Second, altering existing ordinances, the most common and generally the easiest way to implement change. Third, many ordinances require consideration of environmental effects, which will make more sense here when I talk about it in a minute. And then for attorney engagement at the lowest level, lawyers conducting adaptation work come from many different backgrounds and higher up the legal practice is not necessarily being the most proactive to adapt to these new requirements and what we found. Next slide.

(11:31):

So where is this happening? Like I said, generally we're seeing that major urban areas implement more. I don't think that would be super surprising to most people because bigger areas usually have bigger planning staffs. They have lawyers, they have legal power, they have resources, they have better opportunities to write for grants. I mean there's just a lot that comes with being an area like a Boston or Savannah or New York City that you don't necessarily have if you're in a Waveland, Mississippi, which is my bottom example, there's just a higher potential cost of not adapting their infrastructure when they flood. They have more damage, is caused higher bills to pay. So they are more inclined to try to get ahead of it even though the cost is higher as well. And there's always the risk associated with implementing anything. Whenever you get into any sort of regulation adding codes as a lawyer, there's a risk that people are going to sue you.

(12:24):

They're not going to like that. They now have to use stronger building materials or do some sort of different setback or different elevation. It's going to affect their ability to develop generally more regulation does not make people happy when it comes to building. And so small communities are going to be less inclined to take on the risk of implementing something cutting edge as far as new ideas because they don't want to be the testing ground for potentially a lawsuit that they may not be able to afford because they may not, their attorney in small town may be a criminal lawyer by trade who's a part-time city attorney and does not necessarily want to go to the Georgia Supreme Court one day to fight about a sea level rise ordinance. But what they will be do will be happy to do is see what another city down the road does, see that it works and then take that for later because when people think ordinances, they think, oh, you just write an ordinance, but there's a lot of research and monitoring and before and after that you have to consider to implementing it.

(13:20):

That just, it takes a toll, it takes resources. So generally the biggest trend that we've seen so far is that smaller communities are going to take from the bigger communities what they do and it's the bigger communities that are leading the way. Next slide. So existing ordinances, altering existing ordinances by adding strict requirements is probably the most common of our spreadsheet ordinances. A lot of them are just doing things like increasing setback, changing site selection and design choices for builders and cut fill requirements, porous pavements, making sure water isn't going to stay when it hits the ground that they want away for that water to go where the city wants it to go. Utility elevations is a big one. And so I have two examples here on the side that I really liked. So Hawaii, obviously between wildfires and sea level rise has had a lot going on in the last couple of years and they've been extremely proactive in trying to adapt for the future, specifically sea level rise.

(14:22):

And they have a very comprehensive ordinance plan that adjusted a lot of what you can and can't do developing around the shoreline. But this was just the quickest and easiest way to just demonstrate this ordinance just moves their setback. And that's generally very easy for communities to implement, especially unfortunately after a disaster, people are much more understanding in the aftermath of a disaster than they are being proactive later if there hasn't been a reason to make a major change. And then the bottom one I found was interesting and that's from Longboat Key Florida, sorry, I left the state off there from Longboat Key Florida and FEMA actually changed the freeboard requirement of the community and they liked it and they wanted to keep it high. So they actually voted to not change their ordinance to match because traditionally they had just been changing their requirements to whatever FEMA required for, it was a FEMA requirement plus one foot Florida building code on top of that.

(15:17):

And when that changed, it shifted their whole freeboard requirement down and they actually voted to keep an optional one so that way no one had to argue it for their permitting process and would make builders. So obviously it wasn't mandatory, but there if someone did and they explained the risk of having a lower freeboard long-term, they were able to do that without any sort of additional regulatory process. So I also wanted to mention that sometimes maintaining the status quo can also be adapting in some ways. And so really it's just is your existing ordinance, is it a bandaid or is it a solution long-term? How can you make small changes here and really save on those resources at a cost implement Huge big projects like you'll see a lot of major cities when they do this sort of implementation. They'll do a huge plan that's over 10 or 15 years with a lot of stuff, but a lot of communities just need to get at one or two things quickly to make the best change with the least amount of heartache and sweat equity.

(16:17):

Next slide requirements to consider sea level rise. So this is extremely common and I think it's probably the most rapidly growing in major areas is many municipalities are passing ordinances just requiring that either the board that approves it or the regulatory body that approves permits. So variance planning zone boards that they make sure they either have an official statement or that they at some point during their agenda acknowledge sea level rise. And as officially acknowledged it on the record, it's NEPA esque, which I put that, sorry, that's kind of lawyery a National Environmental Policy Act. I imagine most of you're semi-familiar with it, famous for making people do actual scientific work when they do any sort of federal work across the country. But also there's actually no requirement that anyone do anything. You just kind of have to do the work and do the analysis and think about your environmental impact.

(17:20):

And so that's why I've been calling this NEPA esque in that it's good. I don't think anyone would argue that making people think about sea level rise is bad, but there's also the argument of it's not actually requiring anyone to do anything sometimes. So putting the issue in the spotlight is good, but should there be a requirement that's more of just food for thought As for yourselves, when you think about how the legal system works around this, I don't really have an opinion either way right now, but there's give and take on both ends. And so I gave two examples which I highlighted again, very wordy, sorry, not the best. This is lawyer life looking at ordinances like this. So I highlighted the key pieces, but this is from Miami-Dade. They actually have to submit a official statement signed by their commissioners whenever they vote on county infrastructure projects.

(18:11):

What I did find funny about this is that the resolution just says they have to consider it, but then when you read the bottom, that last highlighted sentence, it says, in order to ensure that infrastructure projects will function properly for 50 years or the design life of the project, which that is adding requirement, the way their ordinance reads it says they just have to consider it. But when you read that, they're saying that basically your project has to last at least 50 years. Hopefully your infrastructure project is designed to last that long anyway. But I did want to mention there are some gray areas when you actually dig into the weeds, there may be more requirements they think they're illegally adding. Then lastly again, food for thought. This is from the city of Newark, part of their building codes. These are just additional recommendations they have related to environment.

(18:54):

And so number three is consider sea level rise models when citing buildings no requirement, it's just a recommendation and it's kind of just again, food for thought. Do you think that's enough? Do you think they should do more? They don't have to put any sort of advisement in that. They don't have to tell anyone to do that, but give people that idea. But at the same time, I think there's an argument that they should be pushing more and they could just make some of those official requirement in their code if they wanted to. Next slide. So attorney engagement. I had a really hard time finding good pictures for this, so I just put a bunch of headlines of people suing each other. Some of these are pretty entertaining. Annapolis sued oil companies for their contribution to sea level rise. My favorite is the New Jersey Town and state Settle.

(19:40):

If you have not been following that in Wildwood, New Jersey, the state and the city have been going at it for a decade now over a wall, a seawall, and it finally was settled just a couple months ago. But billable hours are undefeated in the legal world sometimes no matter who's on either side, there's always going to be people affected by these. And so when we're trying to look at attorney engagement, like I said, it's difficult because when you look at all these different types of law, different lawyers are kind of handed cases that, and it is an insurance case, I'm an insurance lawyer, but then you look and it's related to flooding or not getting a payout related to stormwater or post-disaster flooding, public health, salt water intrusion and water quality issues. Governments unfortunately are always afraid of either doing too little or too much and being sued either way.

(20:29):

So their lawyers are staying very busy and actively engaged in this. And like I said, the state bars are not generally very proactive. And even in Georgia, when I've looked at the environmental law section and the CLEs offered, it's very much from the private practice matter of battling over property, but not necessarily climate change effects. And for government, public health, public welfare, it's more who can make money, who's going to get in trouble, where can you kind of cover yourself? If you are involved in any sort of property deals like this down the road, which maybe we'll get there, but right now every state's kind doing their own thing and they're going to have to adapt over time. But we're still in the very preliminary phase of the attorney engagement piece because it has been so hard to quantify. But I don't think he's on the call.

(21:16):

But I did want to give a shout to Dennis Wong from Hawaii. I'd say they're probably the most cutting edge. He runs a CLE that brings in real estate attorneys, insurance folks, and everyone. Hawaii has been really proactive in bringing all sorts of aspects into sea level rise and climate change, including business continuity plans. And so I'd say Hawaii right now is I'll give them the gold star from all the states I've looked at. And they're just a great example of how more states can incorporate sea level rise issues into other issues, I think is kind of what we're seeing as the most successful way. But again, very preliminary in the research and so I can't really quantify that. Anyway, that's more of a Scott Luis gut lawyer instinct is roping sea level rise into other prevalent issues in the legal world of the time to make it more important. I believe I ran way over my time. I have a question slide, so please feel free to drop anything in the chat and I'll be here at the end of the Q and A as well. And then you can always contact me if you'd like to know more about what I've done in your state. I like to talk to people all the time, so please reach out. Thank you

Terra Bowling (22:27):

Thank you so much, Scott. We are going to move next to Amy Kraitchman, so go ahead and take it away, Amy.

Amy Kraitchman (23:48):

Hi, I'm Amy. I'm the ocean and coastal law fellow here at the National Sea Grant Law Center. And yeah, today I'm going to talk about PFAS specifically. I want to go to the second slide. I talk mostly about the southeast, but we're going to start first with a little bit of an overview. So for those who are not aware of PFAS or class of chemicals that are pervasive in the environment due to in part how long it takes for them to break down, they're used in a lot of really common items such as waterproofing and stain resistance of carpets, jackets, couches, also used in cosmetics. And then class B firefighting foam is a big one. And so here at the law center as part of our projects and funding, we are doing a national analysis to look at how all the states are regulating PFAS contamination and exposure.

(24:42):

This picture on the slides right now is showing PFAS contamination in the states nationally, but as I'll get into more, it's only showing the known contamination and there's a lot that's unknown still. If you want to go to the next slide specifically, I have been looking at the southeast, and that is for today's purposes, including Alabama, Georgia, North Carolina, South Carolina, Florida. At the federal level, there's not a lot of PFAS regulations. So it's really left to the states to determine how they're going to regulate and address PFAS contamination. And it's pretty inconsistent about what's happening regionally and then state to state. Next slide really briefly, we probably have all heard about this by now. Last April, the EPA announced a final rule setting MCLs or maximum contamination level for five PFAS and one mixture and went into effect in June. And starting then public water systems were to begin monitoring their water quality until 2027 and then determine what their contamination levels are and set a plan for how they're

going to address it in the treatment stage. That starts in 2029. It's currently still on the books, but it's a little unclear about the future of it moving forward. And then really quickly, so the middle column is the aspirational goals, which is ideally what we'd want to get to with our contamination levels. And then the one for this, right, is the actual enforceable level. So where if a public water system is above that level, they would be subject to some sort of fines or penalties. Next slide, please.

(26:33):

Even if the law still is in existence, there are several lawsuits that were filed after the final rule was announced, challenging the validity of it. Basically they're arguing that EPA does not have the authority under the Safe Drinking Water Act to set these contamination levels, these MCLs. And as of last week, not much has happened to them and these lawsuits. So it's unclear to see where they'll go or what will happen. But it's good to be aware of these lawsuits because even if the drinking level requirements remain on the books and remain good law, they still are up for this challenge and potentially could be overturned that way. Next slide please. Alright. So without guidance from federal agencies, it's largely left up to the states to determine how they want to address the PFAS contamination and exposure risk in their countries. And most states have kind of taken one or two ways, a reactive approach or proactive approach.

(27:40):

States that go reactive is usually identifying and addressing contamination after the fact. So they've figured out that there's contamination and then they're working to clean it up in some way. And then states that take a proactive approach, usually it's happening through their legislator and it's them addressing and preventing ways to preventing future contamination or exposure before it happens or preventing current contamination from getting worse. And that's usually in the form of a ban of some kind. So banning a product or banning PFAS and packaging, it's a common way to get about it. And a lot of this decision on the state level depends on the interest and how proactive a state legislator may be in addressing PFAS. And that varies very much by the region that we're in. Next slide please.

(28:33):

So looking at the southeast, so the first step of our analysis was to do a legal scan where we captured everything that a state has done to address PFAS for each of the states that I am going to talk about today. That included looking at existing databases of PFAS legislation, looking at state legislator websites, agency websites, and basically if it included any reference to PFAS in some meaningful way, I captured it and put it into a document. And it was anything from like is it a fact sheet that they have put out to the public? Is it a log trying to ban something but didn't go through? Is it funding to do some sort of research? Anything you can think of related to PFAS work, I have captured that. And then also I captured any lawsuits at the state or federal level, and that was found mostly through legal databases, but then also state attorney general websites and any nonprofits that may be doing PFAS work.

(29:34):

So that was compiled into legal scans. Those are not public, but I'm happy to discuss more later on about what is actually in all of them. Next slide, please. Here's a quick example of what they kind of look like. As you can see, this was for Florida. This was their enacted legislation, so legislation that made it through both the House and Senate. I captured the name when it was who was having some sort of responsibility under this action, every summary, and then if it was setting a regulation of some type and was codified somewhere, then I captured that as well. So that's just a quick example of what these documents kind of looked like. Next slide.

(30:15):

All right, so what did I find? Unlike a lot of regions that are really driven by their legislator, the southeast wasn't like that. And they all took a very different unique approach and it kind of depended a lot based off of just how interested they are, how much they know about PFAS in their area. So really quickly, I'm going to try to summarize each state, but I by no means I'm going to capture their full work so I can

answer state questions later. Alabama is mostly researching work, and then there's some litigation by municipalities over contamination that is interestingly coming down from Georgia, so it's not contamination within their state In Florida, it's a lot of research, a lot of funding to research and identifying where contamination is. Georgia is a little mix of the two. There is some known sites that have been getting a lot of litigation at them over PFAS, contamination in drinking water.

(31:15):

So there's a little bit of something going on in those three. South Carolina is a lot of research. And then what I will discuss later on is it's home to a really big MVL that is covering PFAS and firefighting foam. And that's the bulk of what's happening. South Carolina. North Carolina by far has done the most in the region. They have work with their universities to address and monitor known contamination and to help communities that are affected by PFAS contamination or drinking water. They've also done a lot of litigation over the fact they have a Chemour consent order from 2019 where the Chemour company has agreed to help clean up existing contamination and provide alternative water sources to affected communities. And a lot of this is driven by the fact that they were able to really identify where the PFAS contamination was coming from and who was the main source and then hold them accountable, which is something that the other states just haven't been able to do yet. Next slide.

(32:20):

And then during my research, we have come across this A-F-F-M-D-L multi-district litigation, which is a form of litigation that's a bit unique, and it is when all the pretrial discovery proceedings get consolidated into one court, usually they're against one defendant in this case is all lot of defendants and to try to streamline the litigation process. So really quickly, I can talk a lot about this. The MDL was created in 2018 to consolidate cases regarding AFF use, which is class B firefighting, foam containing, intentionally added PFAS. And that's usually used at fire stations, military bases, airports, and there's a lot of cases popping up about exposure, about illnesses, cancer, various diseases from prolonged exposure, and then contamination of environments. As you'll see on the slide, about 9,000 active cases are in this MDL right now. And I could talk a lot more, but I think I'm running out of time.

(33:26):

So I'll just briefly mention going back to earlier when we were talking about our EPA drinking water limits. This is a way that some public water utilities can work to address and meet those requirements in that the district judge who's overseeing this case, he has been prioritizing settlements that involve public water systems that know their contamination but don't have funds to address it. So they're getting funding from these manufacturers and are able to put it towards addressing contamination, researching the extent their contamination, and basically making strides towards reducing their overall contamination and exposure levels. So that is one way to do that. Both this and the Chemour consent order are available on the website that Lauren shared a link for in this chat. And then last slide please. And then finally, all this information is in a PFAS explainer that I worked on. And basically that was a, translate all this information and give it to our Sea Grant partners and basically summarize what each state is doing where you can find this information and pretty much use this as a tool to figure out what's going on in your state and help to address PFAS work. And yeah, that's it. Thank you.

Terra Bowling (34:45):

Alright, thank you Amy. Now we're going to move to Kerry and just a reminder, if you have questions, just drop those at the chat and we'll have time at the end.

Kerry McClaughry (34:58):

Thank you, Tara. Hi everyone, I'm Kerry. I'm the law and policy fellow for Maryland Sea Grant, and I'm going to talk to you about the project that I've been working on during my fellowship, the Chesapeake Rising Innovative Law and Policy Solutions for Climate Adaptations in Coastal Communities. This

project was started by the previous fellow Kai Hardy, and we had, he was able to secure funding for this project from National Sea Grant Law Center. And then we've been working with our partners organization partners, Georgetown Climate Center, the Environmental Law Institute, and the AG Law Education Initiative. So the impetus of this project was looking at how coastal communities are trying to adapt to climate change and what those challenges are in the laws and policies that are kind of hindering those adaptations. And then trying to think of solutions.

(36:04):

So the reason why we started this project, and especially looking at the Chesapeake Bay, is because it's the largest estuary in the US and it's particularly susceptible to effects of climate change with more severe weather events, sea level rising or extreme well lands beside flooding because it's naturally flat and lowlying terrain. And then it also has a really high coastal population density. So that makes the Chesapeake Bay region really susceptible to climate change impacts. Moderate surveys by the US Geological Survey estimate that it's going to be impacted about 1.3 to over five feet sea level rise in the next century. And that'll of course take out a lot of coastal cities and towns. So that's kind of the reason why we started this project. You can go to the next slide, please. So we had these three goals for this. The first is to explore coastal adaptation gaps in laws and policies that are existing and in legal scholarship and through the lens of law and science and policy. And then next was to engage early career lawyers and law students, kind of new voices in this field. And we did that through their participation in our symposium and by writing law review articles, which I'll talk more about in a minute, and then facilitate collaboration between different stakeholders and partners in the Chesapeake Bay region. So law policy experts, scientists, students, just all over.

(37:50):

So we had these two deliverables for our project. The first was the Chesapeake Rising Symposium. We had that earlier this month. And the goal was to, at the symposium was to highlight those gaps to kind of get a bunch of different experts in one room, be able to hear about some of the challenges that different areas are facing, and then talk and discuss with one another and network across and try to form these partnerships that could potentially implement solutions for those challenges. And then the second goal, the second activity is our law review articles. So as I mentioned, one of our goals is to encourage new voices in this field, so law students, early career professionals to become involved and engaged in this, especially as down the road, they will be the ones taking up the mantle. And so we wanted to really make sure that they were actively involved and engaged in this project.

(38:51):

So what we had them do was we asked researchers, law students, early career professionals who I will be referring to as researchers for the rest of the presentation to think about some of these issues that they're seeing. And then they presented at our symposium, and then they're in the process of drafting a law review article, which we published by National Sea Grant Law Center's Sea Grant Law and Policy Journal, which is very exciting. Next slide. So first things first, we had the symposium, as I said, it was earlier this month in DC at Georgetown Climate Center. It was really great. We had about 80 to 85 people in the room and they spanned across different states. We had representatives from not just the Chesapeake Bay region as well, but some other people from further states like South Carolina and Georgia. And then we also had a really diverse group of people in the room, people who work in state agencies and NGOs as scientists, as professors, science students.

(39:57):

We even had a high school student who was interested, who came. So we just kind of very broad group of people in the room, which was really, really what we wanted. And the way that we went about the day was to split it up into two sessions. So we had our morning session, which focused on government frameworks in the Chesapeake Bay region, so kind of the larger scale pictures, the interplay between federal and state cooperative, federalism, tribal and indigenous peoples and their role in everything. And

then of course, state and state and then intrastate agencies as well. And that was kind of the morning session and then the afternoon looked at more narrow scope, more local localized governments and implementing work there, including private ownership. So I'll get some more into that as we go through.

(40:53):

Next slide please. Thank you. We kicked off each session with a keynote speaker. So these were really, really great. They were really inspiring and that was a goal, especially since we knew we'd have so many law students and science students in the room. So the first keynote speaker was Secretary Serena McIlwain. She's the director of environment at Maryland Department of Environment. So she was really great and she made a lot of points about how taking science and putting it into policy and putting it into laws and that you have to go beyond engagement with communities. Just engaging isn't enough, but actively listening and then bolstering their voices, keep bringing it back to them and circling back to what community goals are and trying to protect them and bolster their role in everything. That was a really big point that she made. She had also discussed some regulations that MD had made that kind of went towards protecting Maryland coasts and those communities while also acknowledging that that's just the first step taken, but they aren't enough.

(42:02):

It's a step in the right direction, but that there really needs to be a lot more going on and a lot more policy changes to really protect those coastal communities from issues that they're already facing. I personally live in Baltimore and I live very close to Inner Harbor and it floods often by feet. So it is things that are happening now. So really taking that next step, and the advice she gave for young lawyers was to not let the opposition get you down. Don't let them deter you, especially when you're trying to advocate for new policies or regulations that'll make great impacts. There's always a learning curve, and just because you get knocked down once, especially for bills, they usually take more than one session to pass. And so kind of keeping on that, Professor Vicki Arroyo also spoke.

(43:03):

She's a professor of practice at Georgetown Law. She previously worked in the EPA, so she talked a lot about the history of that and also with the changing things and new administration changes that are happening. So talking about trying to shift the focus back to the original administrator of the EPA, William Ruckelshaus, to improve the environment and not let administration changes set you back so much. So the next part of each session was expert panelists. So these were really, really great. They were able to talk at length about some of these issues. And in the morning we had Emily Steinhilber, who's the director of Climate Resilient Coasts in Watersheds in Virginia and for the Environmental Defense Fund. And then we also had Anna Killius, who's the executive director of the Chesapeake Bay Commission. If anybody is unfamiliar with the Chesapeake Bay region, the Chesapeake Bay Commission is a group that carries out the work of the Chesapeake Bay Watershed agreement. There are seven jurisdictions that make up the Chesapeake Bay watershed. So there's a lot of different stakeholders and groups that go into that and into organizing and coordinating all environmental regulations and efforts.

(44:37):

A few things that they brought up were revisions to the Chesapeake Bay Watershed agreement that are coming. And then the struggles of working collaboratively across so many different agencies and states trying to get everybody on one page because just because something happens in Maryland, it may affect Virginia or Delaware. And so really trying to work collaboratively. Next slide please. Our afternoon panel was made up out of these three lovely panelists. So this looked at adaptation more in place, so more localized groups because it's not just the big picture trying to look at cooperative federalism. It's also always trickles down to these smaller communities and localities are the ones really implementing tailored regulations and ordinances for, as Scott had mentioned, all the ordinances. They're the ones implementing these, and so they can have a great effect on an area as well as thinking of private landowners.

(45:46):

So something that Steve Klein, who is the CEO of the Eastern Shore Land Conservancy, and Molly Mitchell who's a professor at Vims Virginia Institute of Marine Science, something that they brought up was living shorelines. And so those are usually put on private land. Landowner has a coastal house and it's going away all of his land. And so even though a landowner might want to implement some type of living shoreline, the realities of the cost prohibitiveness of those as well. And just that you have to try to convince private landowners to make that change, but then also help them with the funding of actually implementing that.

(46:37):

Jon Mueller is the environmental law clinic director at Maryland Carey Law. And so he talked a lot about litigation and the use of litigation in driving advocacy, especially now, and that a lot of litigation that he has been seeing is actually spurred on by new lawyers, by young voices. If anyone's unfamiliar, like the Juliana versus U.S. case is a great example of young people really trying to make a stand and protect their environment. So as I said, we were trying to inspire and encourage new voices into this field and that was definitely one way to do that. Another really interesting thing that they touched on in this panel was Eastern Shoreland Conservancy did some kind of program where they looked at the loss of property tax for localities because of sea level rise. So essentially if you're losing property because sea level is rising and the land subsiding, then you're losing that tax income as well. So that's another kind of really big reason that you can take to smaller localities to say you should implement harsher or not really harsher, but more stringent regulations to protect this land because it will hurt you in the long run if you do not.

(48:07):

Next slide please. So this was another aspect of our day of our symposium. We had these two breakout discussions. They were really great. As I said, one of the things that we wanted to do, one of our goals was to foster this cross collaboration. And we had so many different types of people in the room. So something that we did was actually assign people as they came in based on their profession, were you a lawyer, a policymaker, a student, and assign people to tables that way so that we didn't end up with, for example, one table full of students. Then they really could only learn so much from one another. So that was really great. And one of the feedback, probably the most positive feedback we got from the day was how much people enjoyed these breakout discussions and wish they could have gone on even longer.

(49:00):

We asked them some discussion questions. So the first thing that we had them do was take five minutes and reflect on what gaps they had heard from all of the previous speakers. What had they identified as some key things. For example, funding came up at many tables as a really big issue that places have. So after this gap gathering to talk as a group about what solutions could be driven. So for example, access and awareness, increasing those for funding. Some other big takeaways I could talk forever about. I'm currently compiling all of the notes from all 10 tables into a report that we'll share. And we got so much great feedback. We also had flip charts and post-it notes and just all kinds of great discussion was happening. So there's a lot of different feedback I could talk about, but one of the biggest was the importance of including indigenous voices and respecting their cultural ecological knowledge.

(50:13):

That was a big one. One of our participants talked, for example, about they went to go find Shad in a river for a cultural holiday. It was a tradition that they had shad and they could not find it in the river. And everybody told them, oh, well it's too late in the season for that fish. And they like, no, it's not. This was a tradition that it was always here and that's why we ate that food at this time. So kind of looking and saying, well, maybe it's not as normal as we are thinking of it, and that's something that we need to address and look into.

(50:52):

So really bolstering there. One solution to that issue as well was looking at Washington state and how they've incorporated tribes and resilience planning, and that was really interesting. All right, next, actually, we're going to skip over this one and go to the next one, I promise we'll go back. So these are our researchers I mentioned. These are our law students and early career professionals. We sent out a call in the fall, I believe throughout the fall to every law school we could think of, and sent out a call for articles, for research, asking for students and recent graduates to think of a challenge that a community is facing in the Mid-Atlantic region because of climate change, and then to think through some solutions.

(51:55):

So we chose these lovely six people and they came one from Georgia. So they came from all over kind of to the symposium in DC to present their research. Right now they are working on that second half, that second deliverable of ours, which is a law review article. We also are still accepting interested people who are interested applications. A few were spurred on by the symposium, which was great. We had some people reach out to me about that and asking if they could also write a law review article. So if you hear anything, please ask them to contact me. I'd be happy to talk more with them.

(52:39):

This was our morning group of researchers. Kim Wood talked about state level resilience, governance and the role of Virginia's chief resilience officer. So she talked through their legislative history, where they fit in state agencies and what their purpose and roles have become and how that's shifted. That's what she'll be discussing. Elizabeth Jefferson, the next one, is talking about empowering Tangier Island and community led managed retreat. So she's looking at Tangier Island, which is in Virginia, and it's under threat of disappearing because of sea level rise and land subsidence, soil erosion. And so looking at community led efforts to adapt. And so she's proposing as one possible solution managed retreat and looking at what might work and what might not. And then Kai Hardy is doing an overview of coastal climate litigation in the Chesapeake region. So he'll be giving an overview in his article about all the different cases, some key cases that are being brought. Next, please. Then we had our afternoon, these researchers. So first we had Kathleen who talked about the role of critical area in preserving the Chesapeake Bay. She actually is in the early stages of writing her research paper. So she was also kind of asking the crowd for concepts and ideas. She had a paper that she'd written before.

(54:23):

And then Bill talked about saltwater intrusion into agriculture on Maryland's eastern shore. And then Sydney actually talked about the impact of coastal wildfires and their impact on environmental policies when they're rebuilding. Okay, so we can skip ahead a few wrapping up. These are their article titles. If anybody is interested, obviously they'll be published in the Sea Grant Law and Policy Journal. And then also we had our great project partners. I think we're very close to time, so sorry. But if anybody has any questions, please, please let me know. Feel free to reach out.

Terra Bowling (55:07):

Thank you so much, Kerry and Scott and Amy for those wonderful presentations. So we are close to time, but if anyone has any questions, you're welcome to let us know. I don't see any in the chat. Okay. Well, thank you all so much. It was so great to hear about all of your research. I want to thank everyone so much for joining our webinar. Big thanks to the presenters. We will be posting this recording on our website as soon as we can get it available. And just stay tuned to our social media channels for future announcements about other webinars. And thank you everyone for joining. Have a great afternoon.