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Julie Kuchepatov [00:00:13] Three generations hit the road to explore key seafood producing regions across the US and hear from people working at the intersections of fisheries, aquaculture, seafood, and conservation. While grappling with the effects of the global climate crisis. We may represent three generations, but we have a lot in common, namely a love of seafood and a dedication to contribute to the community driven generational effort and movement towards climate justice.

Cameron Moore [00:00:37] The results of these travels? Welcome to In Hot Water, a Climate and Seafood podcast series. Join us.

Julie Kuchepatov [00:00:42] Julie Kuchepatov, Gen X,

[00:00:44] Crystal Sanders-Alvarado, Xennial,

Cameron Moore [00:00:46] and Cameron Moore, Gen Z, as we travel the country and chat with people who share the challenges facing their regions and their personal stories along the way, we experience some moments that make us ask "What the fish?" as we try to understand why we are in hot water and what we can do about it.

Crystal Sanders-Alvarado [00:01:01] We started the series in the Lone Star State, Texas, with a visit to the Coastal Bend along the Gulf of Mexico. One of the most important offshore petroleum production regions in the world, making up one sixth of the United States total production and a critically important source of seafood, supplying more than 40% of the U.S. domestic seafood. And the second series, we traveled to Maine, where we crisscrossed the state, starting with the bustling hub of Portland, making our way Downeast and ending with a visit to the Passamaquoddy tribal lands. Fishing in the Gulf of Maine generates nearly \$4 billion annually and supports up to 100,000 jobs. And also, there's a growing aquaculture sector. Maine's identity is intricately tied to the lobster fishery. And with the Gulf of Maine warming faster than 99% of the ocean, this way of life is in jeopardy.

Julie Kuchepatov [00:01:47] Due to the uncertain future of the lobster fishery, some harvesters are leaving the fishing business.

Sam Alznauer [00:01:52] So my name is Sam Alznauer and I am the director at Canopy Farms. So, Canopy Farms is an aquaponics facility located in downtown Brunswick, Maine, and it is a really awesome space because it features not only a market cafe and restaurant, but also a really amazing operation of both plants and animals.

Julie Kuchepatov [00:02:15] What challenges are you seeing in the region?

Sam Alznauer [00:02:17] Yeah, I mean, it's pretty devastating seeing like family businesses and people who have been on the waterfront for generations not being able to do what they've always known and what their family has always known that they are able to do with certain types of populations and animals that live in the ocean. There's a good handful of lobstermen that I grew up with, and at least like half of them, are no longer within the business because of how difficult it's become or how what the demand has been and how the water has been really rising and how it's just a different, little bit of a different climate currently, a lot of a bit of a different climate than how it used to be 50 years ago.

Julie Kuchepatov [00:02:56] You mean economic climate.

Sam Altnauer [00:02:57] Economic and environmental as well.

Julie Kuchepatov [00:03:00] Some lobster harvesters are diversifying their income and turning to new ways to work on the water like kelp farming. Here's Jesse Baines, who at the time of this recording was the chief marketing officer at Atlantic Sea Farms.

Jesse Baines [00:03:12] So Atlantic Sea Farms is a woman-run, mission-driven seaweed aquaculture company based in Maine. We work with a community of partner farmers all up and down the coast here, as well as in Rhode Island and Alaska to grow seaweed in their off season from fishing. So, it's a completely vertically integrated company. We provide our partner farmers with seed that is produced in our state-of-the-art kelp nursery just down the road here in Biddeford, Maine. All of that seed is then deployed on their independently owned farms. These are all family farmers, small scale. We provide technical support. We work with them on the leasing that they need to go through, leasing process that they need to go through the Department of Marine Resources to ensure that every farm is in the best possible spot. And then we guarantee purchase of every pound that they grow. And we guarantee a price with a contract before they even get into the water. So, all of these things ensure a really stable supply chain that we're very proud of, a very strong partnership with our partner farmers. We also do our best to replicate as much of what they're used to in their fishery businesses in seaweed. Create a natural progression to seaweed farming for them. And with those products, with that kelp that we purchase, we create award winning products that are on shelf in grocery stores all over the country. We have a sea veggie burger. We have fermented condiments like a seaweed salad and a spicy gochujang seaweed salad that's launching soon. But we also have a really robust food service sales arm and an ingredient sales arm. So, our kelp is going into products like crackers and nutraceuticals and biomaterials and all of these really exciting outlets for what to date has always been either imported or wild harvest seaweed. And now companies have the opportunity to buy domestically cultivated seaweed for their products, which is a really exciting proposition for them.

Julie Kuchepatov [00:05:12] So you mentioned that your Atlantic Sea Farms is a mission-driven company. And is that the problem you're trying to solve really is to help kind of support the lobster community diversify and continue to be, right?

Jesse Baines [00:05:27] That's how we started. It was very focused on our lobster industry here. And it still is. This is our home. This is our community. These are our neighbors. There are family, literally. in my case. My father is one of our partner farmers and my cousin is on his way to becoming one as well. And they're career long lobster fishermen. So that is our heart and home. That is where we are. But also, we're not the only community facing down climate change with some uncertainty, right? So, let's look at Alaska. There's an incredible community of people looking at kelp farming in Alaska with a ton of great support from the state. There's Rhode Island. We're working with a family run mussel farming company in Rhode Island that we're really excited about. And this was their first harvest season, and it went great. So, you know, but that's just in the U.S., you know, where else can we look in the United States? I think there's lots of opportunity there. But you know, can we look at New Zealand eventually? Can we bring this idea to New Zealand? They're asking for it. You know, Canada is really doing some really interesting things. You know, we're not exclusionary as to where the solution can land. What we are really dogged about is making sure that if this is something that's exciting to the people

who live there, great. But what we're not looking to do is implement a solution that's worked really well in Maine, other places.

Julie Kuchepatov [00:06:47] Why kelp?

Jesse Baines [00:06:48] So, first of all, we have to work with the species that are local to our waters. But kelp is really the species that has been grown traditionally in Korea, which has a very similar climate as us. Their kelp industry is massive. They're looking at like 2.5 billion pounds a year. So, we just went through a harvest season that probably yielded about 1 million pounds, all total in the United States. Atlantic Sea Farms is the leader in kelp farming in the United States. So, it's a species that has just kind of naturally progressed. Is it the only species we should be looking at? Absolutely not. I will not be able to tell you how many hundreds of species in the Gulf of Maine alone have market value, but it's a lot. And so, there's a lot of opportunity to grow different types of seaweed that are delicious and nourishing and have all kinds of different applications throughout our food system, not just in a seaweed salad. They can be going into all kinds of different things.

Julie Kuchepatov [00:07:45] Did you have to almost create a market for here in the U.S. for kelp products?

Jesse Baines [00:07:51] Yes and no. I think, you know, is there a new trend with seaweed in certain communities in the United States? Yes. Have people been eating seaweed in the United States for generations? Absolutely. So, I think what we're working to do is twofold. We're working to introduce more people to seaweed and make it an everyday option for everybody and also improve the supply chain for existing seaweed consumption. 98% of what's eaten in the United States is actually imported, oftentimes grown in compromised water with questionable labor practices. Not always. But tracing that supply chain is really tricky for the consumer. So, if nothing else, we're providing traceability. And I think that's something that consumers are looking for more than ever right now. Kelp and many other seaweeds are really one of the only naturally occurring sources of iodine outside of dairy and meat and fish. So, if you're on a, if you're eating a plant based or vegan diet, chances are that you might not be getting in enough iodine in your diet. So that's exciting. More calcium than, you know, one of the most naturally occurring, naturally dense calcium.

Julie Kuchepatov [00:09:02] Calcium.

Jesse Baines [00:09:03] sources. Yep. Yep. Which is exciting. But it's one of the most nutrient dense foods on the planet. So, there's all kinds of these micronutrients and macro nutrients that are coming from seaweed.

Julie Kuchepatov [00:09:13] So you mentioned that you try to make this process for your farmer partners as smooth as possible in regard to their fishing businesses. So, what is that?

Jesse Baines [00:09:23] So we knew that working with lobster fishermen was the right move to help mitigate some of the effects of climate change on our coastal economy. You know, diversification has always been something that's been practiced in our working waterfront communities until very recently when the lobster just became such a valuable industry. It's the most valuable wild fishery in the country. Right. And so things like shrimp and groundfish and scallops and all of these different other wild species kind of fell by the wayside and people were really investing their entire business in one wild species, right. And with the Gulf of Maine warming faster than almost any other body of water in the world

and other efforts being put on our local lobster fishery, we knew that there was a need there, right. So how can we utilize existing infrastructure and incredible skill, set the boats, the knot tying capabilities, the, you know, generational understanding of the tides, the currents, the bottom, all of that, that is almost impossible to train. How can we use that, right. And the natural answer is aquaculture. Mussel farming is growing in the state, which is awesome. Oysters as well. Those are really beautiful business opportunities for anybody and for fishermen, too. But they're a little bit more expensive and they take a long time to get up and running and to become profitable. Whereas seaweed farming, as long as you have a buyer and somebody who's going to drive a market on your behalf, can be profitable in its first season if you already have the existing infrastructure and skills to be successful. And so, our local lobster community here, we have about 4,000 plus lobster license holders in the state of Maine. They all have a boat. They all have a stern man. And they all have the social license to operate within the waters that we're talking about, which is super important. And they're all, the opportunity for growing seaweed farming just in Maine alone is pretty exponential when you think of it that way. We have more coastline than the state of California. We've got really well regulated clean, cold water and opportunity is knocking for seaweed farming in Maine in particular. But this is also something that can happen in other working waterfront communities throughout the country.

Julie Kuchepatov [00:11:42] Right. Right. So, you mentioned social license to operate. Could you give me a little idea of what that actually looks like?

Jesse Baines [00:11:50] There's two things that we consider when we're looking at the importance of social license. One is the opportunity for people. We want people to be successful in their first year, and that comes with some stipulations. Do you already live in the community where you want to operate your farm? Are you already a member of the fishing community or the water working waterfront community where you want to operate your farm? Those are two really big check marks that we're looking for. And in addition to that, social license plays into the success of this industry in a really strong way. If we're not considering that first and foremost, then we're missing an opportunity to grow an industry at scale at the rate that we want to grow it to make an impact. So if we're talking about the difference between the success of a farm that is run by a third generation fisher out of Spruce Head, Maine, versus someone who maybe just graduated with a degree in marine biology and is really stoked about seaweed farming, we're going to go with the person who knows the community, is on the phone with their neighbors and friends talking about why this is an exciting proposition, and why they should get on board. Is it right that anyone can't get into aquaculture in these local waters? Maybe, maybe not. But it's what's going to move the needle faster and for the most people in the shortest period of time and create more opportunity along the way for everybody.

Cameron Moore [00:13:25] What the fish? That sounds pretty exclusionary. Let's dive deeper into social license and what it means in this context. It's bringing up like the whole social license stuff that we were talking about with the people at the Minorities in Aquaculture barbecue and talking to the like Black and Brown people trying to enter the aquaculture industry and just how difficult they were saying it was to enter because of basically what it comes down to is social license. And so, the definition that I grabbed is the term social license refers to the level of ongoing approval a community gives to an industry or project and, in this case, people. And it was just really interesting to hear firsthand experiences of this coming to terms and just how I think the level of unconscious bias within the industry about how harmful things like social license can be to excluding Black and Brown and Indigenous people from the industry.

Julie Kuchepatov [00:14:41] We heard a lot throughout these interviews around social license and the social license to operate, you know, a fishing enterprise or a fish farm or an oyster farm or a kelp farm in communities around Maine in these coastal communities. And what we've heard was, you know, people we talked to were like, we have, you have to have social license to operate in these communities and Cameron shared that definition. And so, the idea is, is that these communities kind of bless you with, with their support, right. Even though we also hear in these conversations a lot of talk about NIMBYism and, you know, not in my backyard and that's happening also. But if you have this social license to operate, then that's less, that NIMBYism is affecting you a little bit less apparently. And then at the same time, we have this barbecue again with Minorities in Aquaculture, and it's young Black women, women of color who are trying to break into the aquaculture business in Maine, and they do not have social license to operate in these coastal communities. And so, I'd love to hear from you both. Is there a solution to this? Like, how do you overcome this?

Crystal Sanders-Alvarado [00:16:03] Start to through like self-reflection, and then how do we start to use our power and privileges to actually, like, step away from them and relinquish them, right? And not hold and hoard them. And that's tough work, right? Especially in liberal areas like Portland, Maine, Portland, Oregon, the Bay Area, right. Like people want to think that they have this idea of, quote unquote, diversity, equity, and inclusion, and that they are aligned with those thinking, but when the rubber hits the road and you have to actually give up and put things on the line, most people then back away from what they have, like, what we call virtue signaling, saying that they believe, right, but when it's like you're faced with the actual scenario of what you've been saying you believe in, a lot of people don't act in the ways that they have said that they believe.

Cameron Moore [00:16:56] And I also I think in this case, Crystal, going back to what you were saying about this, it is really interesting of like, Jesse Baines, when she was talking about social license, she said they're doing all of this stuff to do what's going to move the needle fastest and what's going to make the biggest change in their industry is to hire people who have social license. And I would argue that that's actually not the fastest way to move the needle forward. That's just the easiest way for you to do it because your community is white, cis het men that are your neighbors. If your community was of a different makeup, that would be better. But with the identity that these people are holding talking about the issues that they are, you know, their community is a little bit different of like the people that they are. And if, when we're talking about moving the needle forward, you know, like, what is that needle? And for me, it's getting more Indigenous land back and to get Indigenous people the licenses and the fishing that they have because they like Indigenous people, protect 80% of the world's biodiversity. And so, letting them steward the land that they have traditionally been a part of forever is, in my opinion, what's going to move the needle fastest in a way that is good for both the environment and people. And so, we need to work to restore Black, Brown, and indigenous peoples' social license in this way. And also, to answer your question in terms of what is the solution. I think the solution is more decolonizing education. And for like what Crystal was saying, for people that look like you and me is to start to give up some of our privileges and also use our privileges to amplify and uplift other people, which was, I think, really cool of what we did for our Out of Hot Water series, talking to those Indigenous women and then the queer people in aquaculture. But, yeah, definitely using and learning more about decolonization.

Crystal Sanders-Alvarado [00:19:29] And I think when we talk about moving the needle right, it's like moving the needle for who, when.

Cameron Moore [00:19:33] Exactly.

Crystal Sanders-Alvarado [00:19:34] that conversation and who has social license. It was really just saying, how can we maintain the status quo? Well, it's not actually about moving a needle, it's about maintaining access and power for a specific group of people. And it's not moving a needle in a way that actually changes things meaningfully in an equitable way.

Cameron Moore [00:20:00] Yeah, I think that's a really good point. And I, I think that Jesse and all the people who talked about social license, like I'm not trying to excuse them, but I think that there needs to be more learning about like the harm that that kind of thinking does because you know hiring local people and, you know, people who have been a part of the community sounds like a really good idea. And for me before, like, really working to continue to, like, decolonize myself and the language that I use, I would have been like, that's great. I'm so glad that you are, you know, hiring these people, right? But then we need to be looking at it through a more intersectional mindset of, like, how can we make sure that everyone, not just these cishet white individuals are growing and expanding and having access to these things.

Julie Kuchepatov [00:20:58] Other efforts are happening to support Maine lobster harvesters to diversify their income, including the Maine Sea Grant program that provides training support. Here's Jaclyn Robidoux, who works for Maine Sea Grant and the University of Maine Cooperative Extension. Maine Sea Grant is a university-based program under NOAA that does research extension and education. She works on the extension team, which she described as, quote, the boots on the ground for translating science to people and then back again, unquote.

Jaclyn Robidoux [00:21:26] Yes. I mean, lobster is the bread and butter of our fisheries in the state. We have many, many folks who are commercial lobster fishermen and have a long history of doing that. The income diversification side of things, really, I think we've seen an uptick in the face of changes that are happening in the lobster fishery, whether that is climate related changes that have to do with where the where the lobsters are moving towards in the face of warming waters or other types of changes like interactions with right whales or with wind. So, there's a lot of pressures facing the lobster industry right now. I should mention that previously our fisheries were more diverse and over time it's become a very, very narrow lens on lobster. And so, when we think about diversifying incomes, it's tough because lobster can be a moneymaker for folks. And when it's good, it's really good. So, what we've been working on in terms of income diversification is we run a training program that teaches, that's geared mostly toward commercial fishermen to start shellfish and seaweed farms. For kelp particularly, it's a nice parallel or it really fits the puzzle piece nicely because it happens in the winter and most of our lobster fishery is happening in the summer. So, it is kind of that like year-round income diversification that people talk about. Year-round income is really important. And is anyone like a full time, 100% kelp farmer? Maybe a few, but most people are doing it as supplemental income and most of those people already have lobster boats. Or work on the water otherwise.

Julie Kuchepatov [00:23:07] So a lot of them are recognizing that there's a lot of things happening, and they need to think about something else potentially. So, it's pretty well received, the program?

Jaclyn Robidoux [00:23:16] I would say. Yeah, we've I mean, in the training program specifically, it's called Aquaculture in Shared Waters and it's been running for ten years. And in the past, I'd say five years, we've seen big upticks in the number of people that want to take it. Pre-COVID, we had about 35, 40 people per class and this year we had 117 students in the class. Part of that is also like we've expanded access to the program by offering a virtual track so people can join by Zoom, which is helpful because winter weather in Maine is not always lovely and accessing training programs from places that are really rural or remote like our islands can be difficult too. So yeah, lots of interest.

Julie Kuchepatov [00:23:57] So you train them and then they just kind of go off? Or do you have like an ongoing support system?

Jaclyn Robidoux [00:24:04] We do, yeah. So, the training program is meant to be like a real 101 and we go everything from the leasing process to the different species to business planning, to marketing and try and give folks a good like 3,000 foot overview about what it takes to be a farmer and if it is the right move, because it's not always easy. And a lot of folks come in with ideas, you know, like, I'm going to become a millionaire on kelp, and then we have to kind of work them back and say like, okay, let's think about what this actual business model would look like and how much you can reasonably expect to make here and then we'll continue part of the program. I think part of the success of the program is that we continue to be resources for those folks. So many of the folks that I currently work with doing on-farm technical support are folks that have taken the program. And so, we kind of serve as resources for them throughout their farming time or not farming time, no matter what they choose.

Julie Kuchepatov [00:24:59] Why would we think they could become a millionaire off of farming? Kelp thinks that that's a, I mean, there must be something out there that makes them think that.

Jaclyn Robidoux [00:25:07] I think there's a lot of news headlines and there's a lot of excitement around kelp. So, I saw one of the things that you wanted to maybe touch on was the challenges. And this is a seaweed specific one that there's a lot of hype and that is both good because it shows that there's interest in this and that people really are excited and believe in the potential. But on the back side, it's a really small industry so a lot of times the news articles, you know, it's like Instagram versus reality, where the news articles are saying like, you can make tons of money farming kelp and there is these giant kelp farms in Maine. And then the reality is that these are really small family-owned operations that operate seasonally and are an income diversification strategy versus like become a millionaire overnight farming of all things.

Julie Kuchepatov [00:25:55] Yeah, that's really misleading. I get it. I mean, seaweeds are so hot and popular right now. It's like, it's true, That's all. You see, honestly.

Jaclyn Robidoux [00:26:04] They leave out like a lot of the details about how hard it is. Like that it's happening in the winter, you know, and I get calls from people all the time who read articles like that and are really genuinely excited and they might be in Arizona, and they want to relocate to Maine and start a seaweed farm. So, that's actually not that uncommon.

Julie Kuchepatov [00:26:23] Kelp and aquaculture are being touted as a solution but not a silver bullet by any means to the changing lobster industry. According to the Maine Aquaculture Association, quote, Maine is home to a variety of aquatic farms. As of 2019,

Maine farmers raised Atlantic salmon, eastern oysters, blue mussels, different species of seaweed, scallops, soft shell clams, razor clams, surf clams, rainbow trout, brown trout, brook trout, halibut, and green sea urchins, both experimentally. While many of these species are relatively new, farmers have been raising oysters, mussels, and salmon in the Gulf of Maine since the 1970s. The aquaculture industry in Maine has continued to grow and diversify, especially in recent years, unquote. And it's big business, as the Maine Department of Marine Resources reported in the 2018 total harvest value of Maine grown seafood alone to be roughly \$72 million. To tell us more about aquaculture in Maine, here's Afton Vigue, who at the time of this interview was the communications and outreach manager of the Maine Aquaculture Association.

Afton Vigue [00:27:29] So a couple of things. Aquaculture in Maine has been around since the 1970s, effectively, so it's not entirely brand new, but the sector started to grow in the, around the 20 tens, especially in 2015, 2016. More and more people started to get interested in this. So, in the beginning, in the 70s and 80s, there were a few operations that started up very discrete, pretty small farms in really rural areas where there wasn't a lot of development. And you know, over the years, I think there's been increasing interest in different people from different backgrounds, starting farms, moving to Maine, in some cases, in some cases growing up here and diversifying into aquaculture from commercial fishing backgrounds. So, I think the increased interest in aquaculture and sort of it being more top of mind for people now has also heightened the controversy, right? Because now it's sort of a topic of discussion in the media and in the communities, both as a is a beneficial thing and also as something that's maybe a little scary, maybe a little bit of a change. I think people are generally afraid of change, just as human nature tends to be that way. But coastal communities in particular, I think, are fearful of change and new things, especially outsiders. And I think aquaculture is a bit of an unknown at this point in time. We do our best to sort of bring the curtain down and try to show people what aquaculture could be, what it is, what it looks like, the benefits and who is doing it in Maine. So, it's a big part of what I do to try and build connections between coastal community members and growers and people who are out there working. And it's not just a bunch of gear in the water, right? This is someone's livelihood. They're feeding their family and really what that means for the community and for the state of Maine.

Julie Kuchepatov [00:29:12] Let's dig deeper into if there's any opposition to aquaculture in Maine.

Libby Davis [00:29:17] So I'm the founder, owner, operator of Lady Shuckers, Mobile Raw Bar and Event Company. It's a combination food truck and event catering company based here in Maine. Yeah, I think if there is opposition, it comes from a lack of education. Overwhelmingly, the circles I run in are supportive because I hang out with people like you guys and other folks in the sector and we all kind of mirror each other back that this is like a dream industry to work in. And it does kind of the twofold effect of good for human health and good for environmental health. And so how can we just like do more of it sustainably, of course, and within the regulations of sustainable growth and not growing too fast. But I think there definitely are folks, you know, we call them the NIMBYs, the Not in My Backyards, who maybe are not as familiar with the traditions of a working waterfront community, which Maine is. We're here on GMRI on Commercial Street, which is a very historic working waterfront and, you know, I think Covid saw a large migration of folks from out of state moving to Maine because we were worried. We didn't know what was going to happen. So they wanted to have, you know, their kind of escape plan, maybe a little vacation there, their summer house, which a lot of stay vacant throughout the year as opposed, except for the 1 to 2 weeks, maybe they come up and then, you know, maybe

they're not familiar with the traditions of farming the ocean or they don't understand why all these buoys are marring their million dollar landscape. And so, they think it's different. So, it's bad, you know, and why should they have to look at it? But that's why it's very important, especially for farms that are increasing in acreage, you know, taking large standard or experimental leases to hold these public hearings and that is a part of the lease process here in Maine and to have public hearings about what they're doing, because the way, again, to sensitize people that this is something we should be supporting and encouraging and not be scared of.

Julie Kuchepatov [00:31:19] What happens when someone is opposed to something and goes to a public hearing. I mean, does it get like.

Libby Davis [00:31:27] It can get tense. Yeah, I think it can get tense. I mean, from my perspective, I can see both sides of it. You know, if I had just worked for a long time in my life and like spent my life savings on like a gorgeous summer home on the ocean, you know, maybe you wouldn't want to see it, smell it, hear it or whatever, but I would also take it upon myself to get educated on it and then probably make a decision from there. So, I would just encourage anybody that is skeptical about sustainable aquaculture, you know, maybe they have a bad taste in their mouth from some of the stuff about finfish and salmon farming industry, which oyster aquaculture is different from that. To just get educated about it. You know, the farmers there out there, it's a very labor-intensive job and it's a lot of hard work. The money come slow, but they're out there because they love it and they wouldn't be out there if they weren't also ready to talk about it with people.

Afton Vigue [00:32:14] We see a lot of pushback from academic communities around scale and growth in aquaculture. The connection I see made most often is that aquaculture will make the same mistakes as terrestrial ag, the consolidation, industrial scale production, that kind of concern. I don't think it can necessarily be equated that way because when you're farming in a public space like the ocean, it's very different from terrestrial farming on private land. Companies can't just come to Maine and buy up the ocean. That's not how it works. You don't get to own the ocean. It's publicly leased from the state. There's a public hearing process. All the stakeholders come to the table and have a conversation and it's heard in an adjudicatory setting. So I don't really see that being a real concern because, honestly, the social carrying capacity of an area is going to be hit far before the ecological carrying capacity, like the number of farms that could be supported sustainably on the coast of Maine is far greater than what could actually be permitted because of NIMBYism and because people don't want to look at stuff in the water. They want to buy a nice house and they want to see a beautiful view and maybe see 1 or 2 people out there working. But they don't want to see gear. They don't want to hear boats starting at 4:00 in the morning. It's funny because there was a woman who moved to Maine from away in the town I grew up in, and she tried to start an ordinance in town to prevent fishermen from starting their boats at 4 a.m. because she didn't want to be woken up. So that's the kind of thing that's happening at the town level in the municipal meetings and select board meetings to try and stop development just because the coast is changing so quickly and the uses on the water are shifting.

Julie Kuchepatov [00:33:50] Let's dive deeper into the NIMBYism or Not in My Backyardism as related to aquaculture in Maine. Here's Jesse Baines, formerly of Atlantic Sea Farms.

Jesse Baines [00:34:00] One of the biggest threats to the growth of aquaculture in state of Maine isn't actually fishing communities. It's actually wealthy riparian landowners who don't

want to have aquaculture in their view. So, there's a movement of misinformation in our state, and I think on a national level too, that is villainizing aquaculture at large and using fishermen as sort of the scapegoat for that. And I think that it's really important to understand that if you follow the money for where those initiatives are going, then what you're looking at is actually wealthy people who are here a couple of months a year, don't really understand the importance of aquaculture or why working waterfront communities are actually why they come to Maine in the first place. For the great food and the oysters, the oysters and the lobster and the mussels and all those things. And so, making sure that we do a good job of educating the newcomers to Maine as to why our working waterfront communities are the heartbeat of our coast. And I think that it's working. People just want to better understand what's going on.

Julie Kuchepatov [00:35:06] How does that education happen? Is it through? I mean, clearly this podcast can be a tool for that, but how else is it?

Jesse Baines [00:35:14] I think that, you know, the Maine Tourism board is a great ally. Well, let's talk about making sure when we're showing photos of lobster rolls, we're also showing photos of where the lobster rolls, where lobster was landed for those lobster rolls. And I think things like that, you know, any sort of storytelling that we can do to really help people understand that there are people associated with this brand that is the Maine brand, and their livelihoods are dependent on that. And, you know, I think one anecdote that, you know, so the Maine Aquaculture Association put together a film that is a really lovely film, and I absolutely encourage everyone to check it out. But one of the stories in there is from one of our partner kelp farmers. Her name is Jody, and she was having a hard time getting a lease approved just off of Boothbay Harbor, which is a very wealthy area of the state. And she couldn't get it through, couldn't get it through because there was one landowner who was really having a hard time letting it happen because you have to get the approval of the people who own the land within a certain amount of space from the lease. And she went to the tax records, got an understanding of what people were paying in property taxes, and just went to them and said you were spending more in one year on property taxes on this one property that you're in two months, a year than I make an entire year. I just want to make a living. And that brought it home for them. They were like oh, now I understand. You know, and I think that there's a lot of power in that. And it's the people don't, people don't want to keep people from making a living and having healthy lives. They just don't have the time to understand what's going on. And so, by providing them with the resources to better understand the communities that they live in, I think that what we're providing is an opportunity for more people to get on board with why this is an important thing for me.

Julie Kuchepatov [00:37:00] What does it mean to the community to have farms in it?

Afton Vigue [00:37:04] Well, it means an independent living for people and that's really important because Maine is a state full of independent people. Our commercial fisheries are set up that way. It's a very big part of our culture and our identity as Mainers is building our own businesses and working for ourselves, working out on the water. Aquaculture is another way to do that. It's not the only way, but it's another tool to be able to be independent and go out there and be in a beautiful place and not answer to anybody, right. I think a lot of people, that's why they get into fishing ultimately. And it translates very well to aquaculture in that regard. It also means economic development and that coastal communities can continue to exist without being so reliant on tourism, which is still a big problem in the state of Maine, is the overreliance on tourism. Especially in the coastal communities, because when you grow up in those small towns, you can work in

restaurants, and you can work at inns and you can clean houses and you can do carpentry. That's pretty much it. Besides fishing. There really aren't a lot of jobs. So, growing up in one of those small towns, I knew I had to leave. And there really isn't a lot of affordable housing either. So, it's very complicated calculus to try to figure out how to grow a sector that could provide jobs like aquaculture, but also make it so that these communities are habitable and affordable for people. Very, very challenging. That's kind of where we're at right now. I think that's our sort of crossroads.

Julie Kuchepatov [00:38:25] That's the challenge here. Yeah, I mean, how do you keep the community intact when there is no place to live that's affordable.

Afton Vigue [00:38:36] Yeah, A lot of it does come down to the gentrification as being the main cause of this and Covid has exacerbated that.

Julie Kuchepatov [00:38:44] How so?

Afton Vigue [00:38:44] Well, because when people start working remotely, they sold their homes in Boston and New York and made a ton of money and then brought all the cash from those sales up to Maine. And it's a lot cheaper here than it is in more urban areas to the south of us. And so, growing up in Maine and making kind of an average salary or working part time and doing several different gigs year-round doesn't really make you enough to be able to buy a house. And you're competing with out-of-state buyers that are coming in with cash offers. So, it's very tough and obviously people just sell to the highest bidder, so. What we really need is the towns and the communities to step up and start to create affordable housing, which is starting to happen in some island communities, in some rural coastal areas. And in some cases, businesses are offering housing for staff because as the tourism industry grows and as the number of people who move to Maine who want to go out to eat and want those services and those amenities grows, there's an increasing need for staffing those places. So where are they going to live? So, workforce housing is a huge conversation happening at the state level right now.

Julie Kuchepatov [00:39:50] I mean, it's beautiful here in the summer, but how many people actually realize what they're into when they move here, and they have to live through a winter? I mean, do you think people have a hard dose of reality? Because it's tough, right?

Afton Vigue [00:40:02] I think yeah, I think that happened during Covid because historically people had summer houses in Maine, and they would come up and they spend three months of the year or two months or a couple weeks in Maine and they don't see the rest of the year. What it's really like here when people start working remotely and moving up here full time, there start to be changes in terms of the demographics year-round. And I think that that has put increased pressure on aquaculture specifically and kelp farming, in particular, which happens in the wintertime because all of a sudden now you have more eyes peering out over the bay to look at the activity that's going on. And these folks really didn't have an idea of what was going on in the winter before they started living here year-round. So there needs to be a lot of proactive education on the part of the growers and also the supporting organizations like MAA to do public outreach to those communities and to help people understand what it is that's going on out there. They're not just looking at a bunch of floating objects. There's something underneath that is growing, and you can't really see it from the property, so.

Julie Kuchepatov [00:41:08] Because they're complaining?

Afton Vigue [00:41:10] They don't want to look at it.

Julie Kuchepatov [00:41:11] And they make that known. And so, you're like, well, we have to tell you what's actually happening.

Afton Vigue [00:41:15] Yeah. So, because kelp farms are submerged, you can't see what's growing. It just looks like a bunch of brightly colored buoys or poly balls out in the water. And so, typically, the lease applicant who's applying to lease the space from the state, they will be holding public hearings and scoping sessions where people who live in that vicinity are notified and are able to attend these meetings and raise these concerns. Thankfully, visual impact is not a criteria by which someone can be denied a lease. So, but there are other things like navigation, ingress, and egress. There are other uses obviously, of that water space, so those uses are taken into account during the permitting process and the farms are not going to be placed in an area where there is a lot of existing commercial fishing or heavy recreational use that would cause navigational harm hazards.

Julie Kuchepatov [00:42:06] Here's Sam from Canby Farms, an aquaponics facility located in downtown Brunswick, Maine.

Sam Altnauer [00:42:12] A lot of coastal communities are definitely facing a lot of issues when it comes to erosion on the land going into the ocean with new developments being put in. There's a lot of protected land in Maine, which is really great. And, you know, being able to fight for the land that we stole. I'm a white person, so that was stolen when colonizers came to this land. So being able to give that land back, but also being able to protect it and make sure that there aren't these huge condominiums that are going up, you know, beach side that will crumble, you know, because it's below sea level within the next 40 years. You know, it's just like the same thing with Boston Seaport where, you know, they're facing a whole issue down there where it's like, okay, now you have all these luxury high rises, but it's going to be underwater within the next, I don't know, like what, 30 years or something like, it's not a lot of time. The Bostonians are. That's a whole other aspect. But like that's another podcast. It's a whole other podcast, but it's definitely something where it is. And the thing is too, another issue with that is it pushes out the locals. So, the locals who have been there for generations are the, you know, the locals who want to work on the waterfront or want to work on the land aren't actually able to afford to live in these communities because of the house prices being so high. And so, yeah, you got to live an hour and a half away from the place that you're working or an hour or two away from the place that you're working in order to afford to live in this area, which is like, you know, Portland, Maine has rents right now going comparably one bedroom to Boston, Massachusetts, which is like, you mean to tell me in Portland, Maine, I want to get a one bedroom and it's going to be \$3,200 a month? Why would I do that? That's disgusting. No, and it shouldn't be like that, just no. So, yeah, definitely a lack of affordable housing has been an issue for Maine's working waterfront as well. Being able to afford to work in this area that so important?

Seraphina Erhart [00:44:06] My name is Seraphina Erhart, and I manage Maine Coast Sea Vegetables on behalf of its 20 employee owners at this point. But I am also the second generation of this company because my parents started it in our kitchen before I was ever born.

Julie Kuchepatov [00:44:22] What's your take on people moving to Maine and access to the ocean?

Seraphina Erhart [00:44:26] People were coming from all over and buying houses because they wanted to live in rural America and not in a city anymore. I get it. I love where I live too. But it's created more access issues because private ownership often then leads to shutting people out. One of our harvesters just yesterday told me that he's lost access to one of his primary areas because the place he had been putting in and had known the homeowners forever got sold and he hasn't been able to meet the new homeowners and figure out whether he can get access. And there is a private family lobster industry group right up the road, but they're very tightly holding their access and not wanting to share. I think that's more of a cultural difference potentially. I wouldn't say that's a universal truth. That's just this particular area or group of people. I think there's a lot of fear around losing control on both sides of the equation, right? So, if you're the homeowner, you want to have control over what you believe you just spent a lot of money in and that in for many people, whether it's true or not, includes their line of sight. Right. Right. And the ocean is often what they pay top dollar to have line of sight over so then they get pretty negative about harvesting. So, in Maine, there's less of an issue for anyone who is harvesting beyond the low tide marker in the subtidal so lobster industry not a problem but clams, mussels, periwinkles, a number of seaweeds, not all seaweeds, are all in that reality and are finding it harder and harder to find places where they don't get shoved off or threatened of any number of things.

Julie Kuchepatov [00:46:22] Is this a concern for your business?

Seraphina Erhart [00:46:25] Over time. Yeah, it is. I think right now, I actually just, what I just told you about that harvester, I just learned that yesterday. This was new information. So, in some cases I hear stories of whatever fishery we're talking about, they're having to travel farther by boat, so there's an environmental impact to that. That kind of frustrates me. Yeah. But they're doing what they got to do to make a living. And the fisheries that are able to access where they are from the water side and not from the land side and don't actually have to physically stand on the land to do whatever constitutes harvesting, they're having less of a challenge, but even then, sometimes they get shoed off for complaints filed against them or any number of things. And it, the Department of Marine Resources has, like so many government entities that are underfunded, although they are growing and have had more budget sent their way, partly because of the lobster, so there's a place to be grateful for the lobster industry, right? But they don't have enough. They can't be out there monitoring everything that's happening in the fisheries world. It's unrealistic.

Julie Kuchepatov [00:47:36] In the next episode of the special edition of In Hot Water, a Climate and Seafood Podcast featuring the state of Maine, we learn more about working waterfronts, the importance of their preservation for the future of the state's fisheries, gentrification of Maine's coastal communities, and how the need to adapt to climate change is endangering the physical and mental health of harvesters and their families.

Crystal Sanders-Alvarado [00:47:58] Thank you for joining us for In Hot Water, a Climate and Seafood Podcast by Seaworthy and SAGE. Let us know what you think by leaving us a review on your favorite podcast platforms. And don't forget to share with your seafaring friends. In Hot Water is a production of Seaworthy and Seafood and Gender Equality, or SAGE. Soundtrack generously provided by Mia Pixley. Audio production, editing, and sound design by Crystal Sanders-Alvarado and the team at Seaworthy.