

- Q: [0:00] OK, if we could just start by telling me your name and how you spell it.
- A: [0:05] Sure. Do you need me to get closer?
- Q: [0:07] No, you're perfect.
- A: [0:08] My name is Giulia Cardoso, and it's spelled G-I-U-L-I-A. Last name is C-A-R-D-O-S-O.
- Q: [0:16] Great. How do you like to introduce yourself?
- A: [0:19] Well, my name is Giulia. I'm a 30-year-old fisherman living in Bar Harbor, Maine. I've been fishing for, I think, the last five years. I kind of lost track, but I think it's been about five seasons. I mostly fish for lobsters, but I also go halibut and scallop fishing. I've been working on oyster farms and harvesting wild oysters of my own. I started harvesting wild mussels as well recently. I'm very, very passionate about direct sales. So, a big part of what I do is selling directly to consumers through farmers' markets, restaurants, or just direct sales. Hopefully, next year, I'll start fishing for green crabs, too, because I applied for a grant through the Maine Sea Grant to get some money to start doing that. So, if you interview me a year from now, I might have that on top of everything else.
- Q: [1:11] Great. Can you tell me a little bit about where you grew up?
- A: [1:14] Yeah, sure. I grew up in Italy, actually, in a big city called Milan that has the same population of the state of Maine, but in one city. It's a two and a half ride from the ocean, but my family was never really like a sea family. I always tell people my dad's scared of swimming to give you an idea of how comfortable my family is on the water. Yeah, I grew up there, had a very nice, sheltered upbringing, and when I turned eighteen, I went to London for college. I was studying geography, and at the same time, I started scuba diving, which is what fueled my passion for the ocean. At first, I was trying to find a way to scuba dive in a way that my parents wouldn't be angry at me for. So, I started doing dive-based research.
- My first big project was looking at the invasive lionfish in Cuba. Once in Cuba, we started tagging sharks, which completely deranged my passions and interests. I started working with sharks for a little while there in the Bahamas and then on Cape Cod. As I was doing that, I also realized that I was more interested in a type of conservation that had a more holistic approach and included humans in it. That's how I landed at COA to do my master's looking at the local lobster industry from, I guess, a human ecology perspective, I should say. Once here, I started fishing as part of my research, and then I stuck with it. Not sure if I actually answered your question, which was more about where I grew up. (laughter)
- Q: [2:57] Yeah, definitely. What year were you born?

A: [2:58] '93

Q: [3:00] '93. Where are your parents from? And what did they do?

A: [3:03] Both my parents were born in Milan, Italy. They both graduated with law degrees. My mom worked as a lawyer for a few years, and then once my sister was born, she transitioned to being a stay-at-home mom, which was a lot for her because there were three of us, so definitely a full-time job. Then my dad has worked in the pharmaceutical industry his pretty much entire life.

Q: [3:28] Do you have any siblings?

A: [3:29] Yeah, I have an older sister who's two and a half years older than me. She lives in London, works in TV and film production, and I have a younger brother, two years younger than me, who lives in Rome right now, I guess, and it's kind of unclear what he does, but kind of like a photographer/artist.

Q: [3:48] Sure. You've kind of answered this already, but do you have any history of fishing in your family?

A: [3:51] No, not at all. (laughter)

Q: [3:55] Then, we can move from that question. Are you married?

A: [3:59] I am to my husband, Josh, who also happens to be my captain right now. It's a lot of –

Q: [4:08] Yeah. How did you two meet?

A: [4:10] We actually met on the water. It's kind of a cool story. I was fishing with my first captain, and it was middle of May, beginning of June, so halibut season here in Maine, and it was my first year fish – well, it was my first season fishing full time. I had started the fall before, just at the tail end of it, and I really wanted to go halibut fishing, so I asked Steve, my old captain, if he knew anybody that would take me. He said, “Yeah, absolutely. There's Josh Kane, super nice guy. He'll take you. No questions asked.” I was like, “OK.”

At that point, I had only met old-timers, so I thought Josh was going to be another 70-year-old man. Then, the next day, we're steaming back in, and we see a boat on the horizon. It's like, “Oh, look at that. It's Josh.” I'm like, “OK, cool. Maybe I'll get to go halibut fishing tomorrow.” Then we pull up, and Josh is not a 70-year-old man. He's a man in his 30s, much better looking than I expected a 70-year-old fisherman to be. He agreed to take me halibut fishing, and the next day, we went. He caught a nice big fish, which I'm sure helped his success in catching me. The rest is history, I guess. We started fishing together about a year and a half later. I

did a full season with Steve and then another half a season, and then I quit and went fishing with Josh.

Q: [5:25] Do you have any children?

A: [5:27] No, not yet. I have two stepchildren, I should say, Wyatt, 19, and Kenna is 16, but of my own, no.

F1: [5:35] Does your husband, Josh, have a history of fishing in his family?

A: [5:38] Kind of, but not really. His dad was the chief firefighter here in Bar Harbor. His mom worked at the bank. Most of the older generation didn't fish, but pretty much all of his cousins and he went fishing because they grew up in the late '80s, early 90s, when the lobster fishing started to really boom. So, by the time they were old enough to go working, that's what he wanted to be doing. That's where the money was. So, he is a first-generation fisherman. I'm sure some of his uncles, at some point, jumped on a boat, but they weren't career fishermen. Yeah, he started fishing when he was 16, went ground fishing for a little bit, and then transitioned to lobstering. Like I said, most of his cousins, actually, all of his cousins still are fishermen or work on the water.

Q: [6:27] And how would you describe your role in the fishing or aquaculture industry in Maine?

A: [6:33] (laughter) I feel like I've explored a lot of different fields in that big field of fishing and aquaculture. Because, like I said, I've been fishing for a few years now, and I've been very lucky to experience a lot of different fisheries, which is sort of unusual around here because lobstering really is the main source of income for most fishermen. Josh kind of belongs to an old-school group of fishermen because he grew up around fishing, so he was exposed to that culture and that group of people. He kind of retained a lot of that with him, and he's always looking for new opportunities. He's not just a lobsterman, and it also means that he does things a little old school, so I got to see a lot of very cool things that I don't think happen that much anymore, like rigging very old boats to go scalloping in the middle of winter, or we have a federal permit to go fish for scallops down in Massachusetts in the spring. So, we go do that and live on the boat. It's been a lot of fun. It's definitely been an adventure.

I've been able to see most of the major fisheries in Maine because, like I said, I've been lobstering for four or five years, or whatever it is, and scalloping for three or four, and we go halibut fishing pretty much every year. I feel like I have a pretty good pulse on what the fishing world looks like. We also have a federal lobster permit, so we go offshore in the winter, so I get to do both summer and winter fishing.

Then, in the last – well, actually, before I get there, pretty much since I started living in Maine, every winter, I picked up a little bit of work on aquaculture farms, partly due to my personal interest and partly due to the money that you need to survive. That's been pretty interesting, too, because I've been able to work on two different oyster farms and one mussel farm. I think that's it. Yes. So, I've seen very different styles of operation, both for the product being raised and the way that they raise it, because the two oyster farms I worked on use different methods. I don't love aquaculture, to be honest. I like that sense of adventure and like things changing every day that I feel like you get in fishing, but not as much in aquaculture. We can talk more about that later because I'm sure you have more questions about aquaculture. (laughter) I've got a good – I feel like I have a good sense of, at least, how aquaculture farms operate here. I obviously stayed friends with a lot of the people that I worked with, so I hear about market dynamics and all that.

Then, last year, I started going oystering and musseling on my own, which was great. It's a low-entry easy-access fishery, both of them, because all you have to do is look at a tide chart and bring a basket with you and a measuring tool. So, yeah, I'm starting to get involved in that, too, which I thought would have been like a walk in the park. But of course, it's not always like that. There's the Bar Harbor Marine Resources Committee is starting to talk about maybe regulating access to oysters differently, which might impact the way that I'm able to harvest them. So, even with what I thought was going to be just a fun little thing to do on the side, now there's conversations and regulatory changes and work outside of the actual fishing that I'm probably going to have to put some time into. Does that answer your question?

Q: [10:26] Yeah. Can you talk to me a little bit more about what you'd like to do with green crabs?

A: [10:29] Yeah, of course. I'm very excited about that, actually. I'll go the long way around if that's okay. Both Josh and I want to look for a new crew for his boat. We work really well together, and it's been great for us to get the business started in the last few years, but realistically speaking, his traps are too big for me, and he wants to go fishing a little harder than I want to and having two people from the same household on the same boat at all times just doesn't work when you have a home life and pets and things to take care of. Basically, because of that, I'm going to step off the boat, but I really don't want to stop fishing because I really like being on the water. It's how I've always really made a living. I also don't really want to have another captain because I'm a little over being bossed around and not being able to set my schedule.

I'm one of those people that has a million projects going at the same time, so I really value being able to say, "Oh, I don't want to work today. I'm not going to because I have these other things to do." I get that flexibility with Josh, but not really. I'm his crew. He treats me as his crew. So, if we need to go fishing, we're going

fishing. Anyway, going out on my own seemed like the perfect solution to keep my time and my independence and also keep staying on the water. Because, as you know, access to fisheries is very strict in Maine, actually the easiest thing that I could do was going green crab fishing because it's an invasive species. There's not really any regulations. It's an open-access fishery.

On top of that, I've always been interested in invasive species. Like I said earlier, my first big piece of work was on invasive lionfish. I think it's a great resource that's there and it's untapped. I'm excited about the work that I'm going to be doing, which involves not only catching them and figuring out how to catch them, which I don't think will be hard. I think the harder part will be selling them because there's not much of a market in the States.

As an Italian, to me, this is crazy because you have good food right on your doorstep, and just because you've never seen it before doesn't mean that it's not a viable option for you. I'm actually kind of excited to talk with people, and – I don't want to say teach them how to eat green crabs because that sounds a little patronizing, but just share some information with them. We work with a few restaurants in town through our lobstering business that have said they're interested in buying green crabs. I'm pretty excited about that. That gives me an outlet that I'm more sure about than selling to people and trying to convince them to buy it.

Then, I'm also going to turn them into compost because I'm looking for other viable alternatives. Just because you're fishing for something doesn't mean it has to end up on somebody's table. In a way, they would still end up on somebody's table through the compost. So, I think that's pretty cool. I'm really trying to – and I wrote this into the grant. I'm really trying to basically show people that fishermen do more than just go out and hang out on the water and make a lot of money because none of that is actually true, down to the money part. I think there's a lack of awareness about how much we're part of the food system, and we're part of the food systems in ways others then – “Oh, I'm bringing lobster on your table.” Creating compost is a pretty cool thing. You can go to Salisbury Farms and buy bags of compost for a premium price, and they're going to have lobster shells and crab shells in it. So, there's no reason why I can do the same thing in my own backyard, basically.

So, that's the plan. I'm going to catch the green crabs. I'm going to keep most of the volume for composting. I'm going to sell some to restaurants for direct sale. For restaurants and for direct sales, I want to differentiate between soft-shell and hard-shell crabs. When the green crabs are molting – when they've just molted, you can cook them up like you would a blue crab, so the whole the whole animal. That's actually how they're eaten in Italy. They're a delicacy over in Venice. I was kind of excited. We went to Venice. I was hoping to get to meet fishermen, but we were only there for two days, so no such luck. That involves a little bit of extra work because you have to monitor the crabs. You have to figure out how to tell when they're about to molt, and then you have to isolate them in individual cages, let them molt, and monitor them as often as you can so that you can take them out

of the water as soon as they molted and not let the shell harden. That only happens twice a year during their seasonal molts, which I think is May, June, and then, September, October.

I remember last year I was oystering. I started oystering in July, so it was after the first molt, but even into October, I remember finding – because you see a lot of green crabs out on the flats. I remember finding a lot of softies. So, it goes further into the fall than I thought, which probably ties well back into the questions that you're going to have about climate change because, obviously, it's all temperature-dependent. Twice in the season, I'm going to be doing that, and then the rest of the time, on their hard shell, I just sell them to make broth or to pick the meat or whatever people can come up with.

Q: [16:08] Great. Thank you. Can you talk a little bit about how you got into fishing here?

A: [16:13] Yeah. When I first moved to Maine, I wanted to look at changes in the lobster fishery. It was a very generic idea that I had for my masters. Once I got here and I started reading *Lobster Gangs of Maine*, I became really interested in the territoriality aspect of it, and I decided to do my thesis on that. I always knew I wanted to interview fishermen. I wanted it to be a ground-up research project, as opposed to looking at numbers or stuff like that. So, the next step was to realize that fishermen around here don't love researchers and don't love certain institutions more than others. I knew that to really be able to interview them about a sensitive topic like territoriality, which sometimes involves illegal behaviors or behaviors that are generally not understood by the wider population, I really needed to build a trusting relationship with fishermen. The best thing that I could come up with was to go fishing, which actually worked perfectly for me because I wanted to go fishing anyway. I wanted to be out on the water. It was kind of a win-win situation.

Then, it was really just a stroke of luck. I was taking a documentary class, and I decided to do a project on a fisherman. It wasn't totally random. I was trying to find ways of meeting fishermen, and this seemed like a good opportunity. Somebody put me in contact with Steve Burns, who's an old timer here in Bar Harbor, who's been known to take women as his crew for a long time. It just so happened that his crew was getting done, and I jokingly said, "I'll come fishing with you." He said, "OK." I had no experience. I'd never been commercial fishing before. But he clearly didn't care.

So, I actually started with him that fall. I started going with him and his then crew to take up traps. It was a kind of – I don't know if you say this in English – a baptism of fire. That's what we say in Italy, yeah. Because it was November, there was snow on the ground, and it was cold. Looking back now, we weren't doing anything that crazy. Ever since then, I've had way harder fishing days. But for that to be my introduction to fishing, it was quite something. But clearly, it worked out

because I stuck with it. That's how I started fishing. His crew got done at the end of the year, and then Steve and I worked on his boat the whole winter to do maintenance. I don't even remember what we did, but I learned a lot. Then we started doing gear work in April/May, and come end of May/beginning of June, we started setting traps out, and that's how I started fishing.

Q: [19:10] Great. And what commercial licenses do you hold or have held?

A: [19:15] I have a commercial shellfish license, which allows me to harvest mussels and oysters. I've held the town of Bar Harbor clam license. I've never actually used it, but I had that for one year. I had a green crab license this year, which I'm obviously going to renew. I might be wrong, and the mussel license might be a separate one. I'm just saying this in case NOAA then tracks me down for harvesting without the right license. I have the lobster apprentice license, which technically counts as a commercial license, but it doesn't allow me to land any product. It's just to be registered in the apprenticeship program, and I think that's it. Oh, and a halibut license, of course. Sorry, yes, halibut license.

Q: [20:04] Do you have any experience in the industry beyond directly fishing or harvesting itself? For instance, in bookkeeping, bait, or gear preparation?

A: [20:13] Yes, I do all the bookkeeping for me and my husband, like a typical fisherman's wife, and that's been a learning curve for me because I had never done any bookkeeping before. I am not good with numbers, and it's also infuriating because Josh can do his bookkeeping in his mind. He knows down to every cent what we have or doesn't have in the bank account. I don't understand how he does it so easily, but then the actual bulk of the work is on me, which is fine. It was kind of the agreement that I take care of it.

Yeah, I do all that, and definitely the bait part of it because I've always gone around with whatever captain I was working for to get the bait. I've never actually harvested bait, but that's another one of those projects that I'd like to get on this summer. I'd like to get some pogies. You can get a personal use license, and there's different ways that you can catch them. I think I'm going to use a net, kind of like a fish trap system, and try and catch a few pogies, both for myself, for the green crabs, or for Josh, for lobsters. So, either way, would stay in the family. But yeah, definitely sourcing bait. I've been all over the state. Josh and I like to buy bait in bulk. It saves us money and time, so we often go down to Rockland, to O'Hara, and buy bait directly from them. So, a lot of time spent on Route 1 with a lot of barrels.

Then there's the whole like dealing with the bait aspect of it that I never thought when I got into fishing. If you fish out of a wharf or a co-op, it's kind of like a supermarket. You show up, and they load you up with bait. You might have to bait it out, but the really heavy lifting is done for you. Where Josh and I are independent, and we're just starting out – because Josh got his license three years ago, now four years ago – we don't have all the resources that more established

fishermen have. We don't have a nice forklift to unload the bait off the truck, which means a lot of dumping the barrels into other barrels or other less-than-pleasant ways of moving a lot of bait. I can tell you everything you want about bait, honestly.

And then gear work, yes. I've done a lot of gear work. I've always got traps ready, both with Steve and Josh. In the last year or so, Josh was a little more independent with gear work. I probably only helped him 25% of the time because we also have a house to run. Gear work is one thing that he really enjoys doing, and he often does it during the winter, so he's not rushing at the end of the season to get everything ready. Well, at the beginning of the season, I should say.

Then, the really cool gear work I've done is rigging the boat for scalloping. So for one, two, three years, yeah, three out of the – yeah, for the last three years, pretty much Josh and I have on our own turned our boat from a lobstering boat to a scalloping boat. That involves putting up the mast and the boom and installing the winch on deck. And obviously, you can't just put these things on deck. You have to figure out distances, is the boat going to be balanced, and all this stuff. And that's Josh's work as the captain to do the brain work, but I've been there. I've done a lot of stupid stuff that I wish we hadn't done. Last year, we got a new winch, and we had to move the wire from one winch to the other. I can't remember exactly why, but the only way we could do it was by hand, and this is like half-inch metal wire. It's not rope. So, a lot of pulling and winding and spooling on the winch and then getting the winch on the trailer with no forklift. So, yeah, a lot of (inaudible) and pulling with ropes.

I can also tell you all about how to rig a rope for scalloping. It's been cool. I've learned a lot of things. I've learned how to – I came from a very sheltered environment, growing up in a big city with white-collar parents, so I had no mechanical knowledge. I barely even understood how that stuff worked. And now, I can diagnose simple problems. I've run fuel lines. I've run hydraulic lines. Josh has been great in this sense. He's always treated me like his crew to a fault, almost. But now I feel way more confident going out on a boat on my own, fishing for green crabs, even if I'll be inside of land the whole time. If anything happens, I feel like I wouldn't just be totally lost. I would at least be able not to panic, I guess.

Q: [25:10] Do you have any experience in post-harvest processing, marketing, or trade?

A: [25:14] Yes, (laughter) because we do all these direct sales. Well, Josh has always sold his lobsters on the side. Once we got together and started working together, especially with the pandemic, we made it more established – gave it more of a structure. We have a business name now and logo and all that stuff so, and that's my department. I've worked with a handful of restaurants on the island, moving different types of product – lobsters, scallops, halibut, oysters – and I've started selling at the farmers market, which I was always surprised that there was nobody

selling there in Bar Harbor, but I guess, I'm glad they didn't, because now I get to do it. I started that, I want to say, three years ago now. I think I've had two full seasons under my belt and one half-season. We're going into our fourth season, I guess.

That's a whole different way of selling seafood, from having to think about the setup and how am I going to bring this product over to – it's been really interesting to realize that people actually don't care about lobster that much, which is obvious. It's not rocket science, but nobody wants to eat lobster once a week. I mean, I'm sure there are people that do, but the majority of people want to eat seafood but don't want to eat lobster once a week. That's kind of why I started going for mussels and oysters, because I wanted to be able to bring more diversity to what I had. There's obviously a demand, and I almost want to say a need that people feel to be able to access more fresh seafood. So, yeah, I have experience with all that, too. But if you have more specific questions, I'm happy to answer them, because I feel like I'm just talking generally about my life. I don't know if this is useful.

F1: [27:10] You sell crab as well.

A: [27:12] Oh, yes. Crabs, thank you. (laughter) I forgot about those. Yeah. We catch Jonah crabs in our lobster traps.

F1: [27:18] They're just bycatch, right? And you're marketing them?

A: [27:21] Yeah, it's just bycatch. I mean, we're allowed to keep it under our lobster license, but it's generally considered bycatch. Most fishermen throw it back. And if you ever had Jonah crab, you'll know how tasty it is. It, again, seemed insane to me that there was no good market for it. This is something that I'm still trying to get my head around. I can move a few hundred crabs a year at the market. I have to sell them whole because selling the crab claws, which is what people usually want, is a whole different license. I think that limits me a little bit because a lot of people don't love handling live animals. I can understand why. But anyway, I started selling crabs at the market, and I didn't think it was going to go anywhere. It was a total experiment. I'd say they're more popular than lobsters now, and I'm really happy to be able to do that because any money I make off crabs is totally a win. Anything I make is better than the zero dollars we would make, so I don't sell them at a very high price, which makes them very affordable, and everybody's happy.

F1: [28:30] And then, one more follow-up. In terms of your marketing that sounds like you manage, how do you identify who you're going to market to? Is it existing contacts? Do you use Facebook? Do you use word of mouth?

A: [28:41] It's a mix of both. I'm sure that marketing is the thing that I'm weakest at because I don't love spending time on laptops and social media and all that. But I use Facebook and Instagram. Mostly Facebook. There's a few local community

groups that I post on. At least once a month, I try and advertise for sales, and that's how I get new customers. But we have a lot of repeating customers that just get in touch whenever they know that we're fishing every day. I'm going to change the structure of how I sell a little bit this year, but the idea is that people can always come to us and be like, "Hey, do you have lobsters?" In the summer at least, we usually have them available.

So, it's a mix of both reaching out to new customers. I usually try and target locals, mostly, and then once a year, at the beginning of the tourist season, I drive around the campgrounds and bed and breakfasts or motels that have kitchen space on the Bar Harbor side of the island, and we have flyers and business cards that I leave around. That gets me more into the tourist section. Then, by now, a lot of our customers have – a lot of our customers might have Airbnb's, so they ask me for business cards or flyers to put in their Airbnb's. We've had a lot of new customers that way. I think that's it. That's pretty much – yeah, I rely a lot on word of mouth because there's not many of us that sell seafood directly. It actually works pretty well. Once a few people know, "Oh, we can buy lobsters from this person," they spread the word pretty efficiently.

Q: [30:27] Do you have any experience in advocacy or community-based organizations related to fisheries?

A: [30:33] Not yet. (laughter)

Q: [30:36] Do you hope to?

A: [30:37] Yes. Yeah, for sure. I used to do that stuff in the past in my previous life in Italy at the student level. So, it's something I have experience in, just not related to fisheries here. But I definitely see a need for it. I always feel a little uncomfortable talking about this because I don't want to sound like a conspiracy theorist, but it really doesn't feel like the state or the federal government are very supportive of small-scale fishermen. Between the really heavy regulations that are imposed on us with virtually no ability for us to talk about them, discuss them, or have weight in what gets decided and the lack of infrastructure – what I was going to say about the crabs is that there's no place to pick crab meat in Maine. You'll go to any restaurant, and you'll get crab rolls and crab cakes. But I'm not even sure that's crab that comes from Maine waters. We don't have a stable wholesale crab market because no wholesalers want to buy crabs because they have nowhere to send it to. To me, that's crazy.

The state of Maine prides itself in being the lobster capital of the world, and they make a lot of money basically off the fisherman's back by drawing tourists in, but they don't support us in any real way. I've never seen the state come to us and ask, "Hey, what would help you?" – outside of just being able to go fishing because I would love to say, "It would really help to open a processing plant here," both for lobsters and crabs because that would create such a stronger local economy. It

would create so many more jobs connected to fisheries. It would really reintegrate fishing into the rest of the community here. There doesn't seem to be any interest on the state side.

The last few years have obviously been dominated by the right whale issue, and I understand why that takes up a lot of time and energy for everybody involved. But regardless of what happens to whales, fishermen are still going to be fishing in Maine, and you can't just stop everything else and not think about anything else just because you have this really big, pressing issue. There's the whole – I'm really frustrated at the lack of entry. I want to go fishing. I want to be able to go fishing on my own. I have every right to. I have the skills. I have the interest. I know I would be a good steward to the environment. There's no reason why a person like me shouldn't be allowed to go fishing, but there basically is no way.

I'm doing my apprenticeship for lobstering. It might take me ten years to get my license, which is great. I can keep it there in case when I'm 40, I want to go lobster fishing. But other than that, you know, the scallop license is a lottery system I enter every year. I enter for dive and drag, and I never get anything. There's no way for – well, it's the same with the elver fishery. It's a lottery-based system. I was going to say that it's hard as a woman sometimes – that's another reason why I'm very excited about green crabs because it's a novel fishery. Nobody's really doing it, so it creates a level playing field for everybody. But it is harder for a woman to start going fishing for things like lobsters or scallops because of the cultural environment.

I've never had to deal with really limiting sexism. There definitely is sexism. It's more like the cultural obstacles that you're going to face as a woman to try and find a boat and get a boat and get it rigged and get the collaboration and help that most young fishermen get. I don't know if you would get that same treatment as a woman, and I don't see the state, again, doing much to help it. I know it's a delicate issue. They can't just be like, “Oh, we're going to reserve a few licenses for women,” when already it's such a difficult system to get into the fishery. They can't just set licenses aside for women, but I don't know. I don't know. Maybe we could have at least some conversations about what we could do now that there's a growing number of women and nonbinary folks that want to start fishing.

Q: [34:53] I definitely want to come back to that, but just before we get into that – and I know this is a hard question to answer, but what does an average day of work look like for you?

A: [35:02] In what fishery? (laughter)

Q: [35:05] Take me through them.

A: [35:06] OK, cool. I'll start with the easy ones. So oystering or musseling, the way I do it, it's very chill. It's just supplementary for me. I get to pick my days. I get to

pick my tides, and then it's just very relaxing. I go out. It's my alone time, and for two and a half hours, all I do is walk around the flats and look around. If I find an oyster, I check that it's the right size. It goes in the basket. And if not, it stays there. So, that's pretty straightforward.

What else? For scalloping – well, scalloping is different if you're state fishing or northern Gulf of Maine fishing, which is what we did last year. We've done both. We've done two seasons in the state fishery because we found someone with the license that would come on the boat with us, because neither one of us has a state license. I think that's honestly the toughest fishery I've worked in, mostly because of the environmental conditions. It is winter in Maine, and you're out on the water four days a week, and you're so limited. They tell you which days you can go, and the season runs from December 1 through March 31, so that's four months. You pretty much have to get every day in that you can. So, unless it's blowing a 100, you're going to go fishing, which means that I've been out there in 10-degree weather with scallops freezing on deck because it's so cold. You just have to get through it, and it really sucks. (laughter)

But a typical day would start a little later than lobstering because you have to wait – I think they changed it now, but you usually have to wait until sunrise, and they go by Augusta times. It might already be sunlight here, but you still have to wait. So, say by 6:00/6:30, usually, you're starting to fish. You might have to travel to your fishing grounds. You might leave a little earlier than 6:00, but it's not like lobstering, where in the winter you might be going out at like 3:30, so it's a step up. You get to your fishing grounds. Usually, you already have your tow. You already know where you're going to be towing unless you're prospecting, but let's assume that you already know what you're doing. You just set your drag out in the water, tow for about 10-15 minutes, half hour, depending on a lot of factors.

Then, once the scallops come back aboard here in the state fishery, you catch so little that you can process what you've caught and shell them before the drag comes back from the next tow. So, that's what you usually do. You just dump the drag. If you have two people on board, you'll set the drag back in the water. One person does that. The other person starts picking through the pile. If you're on your own, you set the drag back, and then you go to the pile. There's a minimum size. You usually keep every last scallop that is of legal size, and then you start shelling them. We can only land the meat. So, you set up at your shelling station, and the cycle goes on and on until you try and get your limit, which is three – well, it's 15 gallons of meat a day. So, it's three buckets. There's a conversion between how many bushels of scallops in the shell you catch that gives you those three buckets. I don't remember what it is. For the northern Gulf of Maine, it's like 25 bushel. It's probably like 18 to 20 bushel here in the state fishery. You just keep track of it, and you try and get your limit. Usually, you can, especially if you have a bigger drag.

The first year that we were fishing for scallops here, we started very late in the season because we had a lot of trouble getting the boat rigged, and by then, it was

kind of drying up. We never got our limit. But you just go until the end of the day. I think you have to stop at either sunset or like half hour before or after, and then you come back in. Most of the time, we were selling scallops direct. There's a great direct sales market here in Maine for scallops, and people usually buy them in bulk, so by the gallon, which is awesome, but it also means that you come home after a day of fishing and you now have to bag those scallops and weigh them and label them and either have people pick them up that night or find a way to get them to them the next day, which you might be fishing. So, a lot of logistics involved.

If you're fishing down in Gloucester, it's a lot easier. Well, for one, we're living on the boat. So there wasn't much – just wake up and go fishing. I want to go diving on Stellwagen Bank and see what it looks like because no matter what point in the season, no matter what we were doing, the drag would come back bulging with scallops. There's scallops everywhere, and they're beautiful. You have so many that, at that point, you actually get to choose because you can get different prices depending on the size of the scallop. So, you're getting enough scallops that you have the luxury of saying, “OK, these are small. They're lower price. I'm not going to deal with these. I'm going to focus on the big ones.”

Then the actual process is the same, except that you're getting so many scallops, the piles are so big that you don't really have the time to pick through it and shell. What we did was just pick through the pile, get the drag back aboard, pick through the pile, get the drag back aboard until we had our 25 bushels, and then we would start shelling. We'd start steaming back and shell. When we're down in Gloucester, we sold to the dealer because we weren't home. At the end of the season, we kept the catch from the last day and brought it back home to sell here. The idea this year – I'm not going to be there full time, so I'm probably going to go back and forth a little more, bring back a few more scallops than we did last year. But it's so simple there. You just pull up to the dealer and unload everything, and then you're done.

Am I talking too much? Because there's a lot of fisheries to go through. (laughter) OK, halibut. I love halibut fishing. We go pretty hard with halibut, I think partly because it was Josh's first fishery as a captain. It was the first time that he could really do something on his own, and so he went 100% in, and that's all I've ever known. That's how I know how to go halibut fishing. You want to work with the tides. Be really careful about when you set your hooks, which might mean that you're fishing in the middle of the night, but it's also kind of neat because you don't have to go that far. If you have a fast enough boat, and you're fast enough at setting you can set your gear, come back in, have a couple hours of downtime, and then go back out. The actual fishing might take a couple hours, might take you a couple hours to set, a couple hours to haul. It's not like lobstering, where you're out of all day. But it's equally as exhausting, if not more. (laughter)

The way we do it is we get the bait, obviously. It works out pretty well, unsurprisingly, because nature has a reason for everything, but halibut season is usually around alewife season, so we get to buy fresh alewives, which is a great bait

for halibut. Then, usually, I'll bait the tubs on the way out, and then we set them together. I drive the boat, Josh sets the hooks, and then you just leave them there for a couple hours. Then, you go back, and you haul them back. If there's a fish, you bring it aboard. Make sure it's legal. If it's not legal, it goes back in the water. If it's legal, it stays on the boat.

Then, we also bring the halibut home and cut it up in steaks and filets and sell those, as opposed to the whole fish. That goes like hotcakes because there's not many ways to get fresh fish around here. Then, for lobstering, which is the most, I guess, complicated one, just because there's so many different sides of it. If we're fishing in the summer, it's pretty straightforward. We'll leave the harbor. We get the bait ready either the night before or the morning of. We usually leave the harbor around 5:30/6:00. Josh doesn't have his full 800 traps yet. Last year, he had 500. Yes, yes. So, we were hauling 250 traps a day, which is really not that many. We'd be done around 2:00. My job on the boat, as a sternman, is to get bait bags ready, tend to the traps, empty them, measure and check all the lobsters, band the legal ones, put them in the tank, and make sure that things on deck are running smoothly so that Josh can just focus on basically driving the boat and finding good spots to set the traps.

Once we come in, if we have any orders, that's actually the part that takes us the longest overall, is crating up, so going through the catch and grading it. We have such a complicated system because we sell to so many different outlets, and each outlet has its own requirements. Even the dealer this year required us to grade our lobsters. We had to separate them based on basically the quality. So, you might have to differentiate three different types of lobsters for the dealer. And then, if I need lobsters for the market, I sell a certain size. So, you have to set those aside. Restaurants ask for a certain size. So, you have to set those aside in separate crates for each restaurant. It takes us an hour, sometimes, to crate up. But that's the name of the game, I guess.

Once we're done that, we unload to the dealer right at the pier. Any orders or restaurant orders we deliver or bring home for people to pick up if they're private sales. In the winter, it's pretty much the same, except that we leave a lot earlier, we come back a lot later, and we haul the whole gang. We haul 500 traps when we go out, which means that we usually take a third person so that I don't kill myself on deck, and we can go a little faster. The third person usually manages the bait, so I'll tell them what to do, and they just get the bait ready, and then I'll do everything else. So, same thing as before – get the lobsters out, go through those, send the traps back. But it does make it easier to have a third person to help.

Q: [45:37] Great. Then, returning to something we were talking about a little earlier. How do you feel that your background or identity as a woman shapes your work in the sector, including the way people perceive and treat you?

A: [45:50] I'll start from the last part of the question because it is the easiest. I was very worried at first because I'm a very small woman and I'm not from here, and I felt like it was the perfect cocktail to not be taken seriously by fishermen. But apparently, I was wrong in the sense that, yeah, they probably laughed at me and giggled, not in my face, but I'm sure that they had things to say about me, but I've always been a very serious and hard worker. At the end of the day, that's what fishermen like to see that you put in your work. So, Bar Harbor fishermen – I've always felt accepted. Once I started fishing with Josh, who is well known to be a very hard worker and a very serious fisherman, it solidified my position, I guess, and my reputation because they knew that he wouldn't cut me any slack. So, if I was going fishing with him, it meant that I was doing my part.

There's still the occasional few things here and there, like, "Oh, I'll help you with that bait," or "I'll help you move this," even if I probably don't need the help. They wouldn't help a man in my position, but I kind of brush that off, and honestly, at this point, I even take advantage of it. If they're dumb enough that they want to help me, it makes life easier for me. I mean, after a few years, I finally feel like I'm a part of the fleet. People will talk to me, even if it's just me and Josh isn't around. It's harder, obviously, once you get out of your harbor. I've been very lucky. I've been jumping on random boats here and there on the island, even on highliner boats. I know that being Josh's wife is a great reference. But it also takes a certain kind of captain to take a woman because there are still a lot of captains out there that don't think we can do the work or don't think we are strong enough to stand for 16 hours or whatever it is that we're not strong enough for.

I know that people probably think I don't understand as much about the ins and out – I don't want to say the theory behind fishing. They probably don't think I'm as qualified a mechanic as I am, which I'm not really that qualified, but I know it enough that I could help. But I don't think people assume that about me, and they do assume that about guys in the harbor that I know for a fact have zero mechanical experience. (laughter) I have a lot of people – I usually get more sexism from other crew members than captains. We have a lot of issues with men coming to work on our boat and not really respecting me as the sternman, so technically, their boss. So, they'd either not do what I say or question it, or instead of talking to me, they'll talk to Josh. It's frustrating. I've worked really hard to be where I'm at today. I know that it looks like I cheated the system because it's my husband who's running the boat, but I did not cheat the system at all. Josh is a wonderful husband and a wonderful captain, but like I said, and I'll say this until the day I die, he treated me like his crew, and I will forever be grateful to him for it. But people don't seem to understand that.

There's been a lot of friction with people that we've taken for a day. Down in Gloucester, we took a guy to help us, and he wanted to change the setup of the boat, things that they would never have done had the sternman been a man. You don't change somebody's setup on the boat the first day that you get on that boat without even knowing what you're doing and without asking. But because I'm a short

young woman, it's apparently okay to do so. So, that's very frustrating. That's part of the reason why I want to go out on my own is to kind of prove people that you – there's nothing about being a man that makes you more skilled or more capable of going fishing on your own or as somebody's deckhand. Can you ask me the question again, because it was the first part there that I feel like –

Q: [50:19] Sure. How do you feel like your identity shapes your work?

A: [50:22] Yeah, OK. Thank you. I'm going to try and be articulate about this, but I don't know if I can. (laughter) I'm aware that my boots are making a lot of noise. I feel a big difference between me and how other women in sea fishing is what are we trying to get out of it? A lot of men around here are like, "I basically got to catch every last lobster. I got to go as hard as I can. I got to go offshore. I got to fish trawls. I got to fish big traps." My question is always, "For what?" You know what I mean? You're going to go out there. You're going to be really hard on your body, on your boat, on your equipment. Yes, you're going to feel great at the end of the day and like a hero. But did you really achieve anything bigger or more useful to society than if you had been in the bay hauling pairs and singles and just maybe bringing in like a third of what you would from offshore?

Maybe at that point, you have the time to do what I do, which is to sell directly to consumers, to keep it local, to not just unload it to the dealer and go home. I see this a lot in other women, like, if you look up and down the coast, there's a bunch of women captains that actually are very innovative about how they run their business. They might have a restaurant, they might have an oyster farm on top of their lobstering business, and I don't usually see men doing this. Men just go fishing. I feel like, as a woman – I don't know if it's because I'm a woman or because I'm a newcomer in the industry, but I feel like I bring a little more creativity and a little more innovation than people that have been in it for decades, or that have seen it done the same way for decades and think that it's some sort of fight that you have to win against I don't know who. The ocean? The lobsters? I'm not sure.

Even from a financial point of view, I don't know if what they do is the smartest thing. I'm not here to – I know it sounds like I'm judging or criticizing, but it's not my goal here. I'm just saying that the answer you often hear is, "Oh, this is what we have to do to make it pay." But I don't subscribe to that because the further out you go, the harder you go, the more expenses you have. So, at the end of the day, I don't know if you're actually bringing in that much more. I think it's just a different attitude. Fishermen don't see the ocean as something to empty, for sure, but I feel like a lot of women in the business have a little bit more of a nurturing attitude toward what they're doing. At the end of the day, I think creativity is the keyword here.

Q: [53:12] How does your role in the fishing sector work with your family or caregiving responsibilities, including looking towards the future?

A: [53:19] Yeah, that's a tricky one. Like I said, we don't have children yet, but we have plans on having children. We have a lot of pets, though, because we have three cats, a dog, and nine chickens. We're building a homestead right now, and the plan is to have more and more animals, and that is totally because I want them. I'm very aware that all that doesn't really marry itself with being out at sea all the time. Even now, it's a little stressful sometimes not being able to be home and take care – when we're gone in the winter, especially, it might only be once a week, but we're gone for 14 hours. I never realized it until recently how – it's not alienating, but it really feels like you're so disconnected from home, and then you need a day to recover, and a lot of the responsibilities that traditionally fall on women, I feel like sometimes I can't keep track of all of them.

Josh is a wonderful partner. He's very forward-looking in that sense. I mean, we're kind of a 50/50 household, I guess, is what I'm trying to say. It's more like 60/40, let's be honest. Sometimes, it's self-inflicted in the sense that I love cooking, and I want to be doing the cooking, so I take that on for myself. It's not like Josh expects me to cook, I guess is what I'm trying to say. Everything that I do is because I chose to do it. I would have the option not to do it. But it makes it hard. You're tired at the end of the day. You might not feel like cooking or making a nice meal for you and your family. This is something that has become really important for me because, as an Italian, I grew up eating healthy food, and I refuse to start eating American food just out of convenience.

No offense, but I don't want to – we are lucky enough to live in Maine. We have access to a lot of fresh food, and I totally want to take advantage of this. But sometimes, that doesn't marry well with all the time that goes into fishing because it's not just the time on the water. It's also rigging the gear, going to get the bait, and that's why, in the last few years, we've transitioned to a system where Josh takes a little bit more of that on so that I can take a little bit more of the housework on.

In terms of looking at the future, it's very difficult for me. I really feel like I'm – stepping off Josh's boat is a huge thing for me, and I'm excited about the green crabs, but it's not easy because I feel like I'm giving away a part of my identity and a part of my independence and autonomy. I could do whatever – I could choose to be out on the water 16 hours a day because I had no other strings attached. I think that's a luxury that a lot of men have and women don't. It's hard to even put in words what it is because even with me and Josh – he has kids. He's the one with kids, not me. He's the one that technically has more strings attached. But even when he was raising them as a single parent, he always went to work, and he would have a network of family and friends that would help him take care of them, but there was never the expectation that he should stay home with the kids.

I think part of this is societal expectations on me that I've internalized. But if I see myself in, say, five years with one or two children, I don't know if I would feel that

comfortable being like, “OK, I still want to go green crab fishing,” or “I still want to go oystering,” or “I want to take a day and go scalloping with my friends.”

We're trying to set up our life so that we could have everything. Josh could go fishing, and I could go fishing, and we could have kids, and we're going to take the kids on the boat once they're old enough, which is when they can walk, I guess, or probably even before that. Just put them on the boat and get them used to it so that we can keep doing all these things that we both love without me having to sacrifice them. I have hopes for the future, but I don't know.

I've never had kids, so I don't know how likely it is that I can do all these things. With the fact that we want to have a very intense home life, we don't just want to get home and relax on the couch. We have animals. We want to have a big garden. We want to work the land. I'm very aware that I may not be able to keep doing this the way that I've been doing it forever, and it sucks. (laughter)

Q: [58:15] Thank you. We're going to sort of shift into environmental changes now. Can you describe any changes in the marine environment that you've noticed in your time on the water here?

A: [58:24] Yeah. I'm always wary of this question because I've only been doing this for five years, so I'm only just starting to notice patterns in the lobsters, for example. But I can definitely tell you that winters are not as cold as they used to be, and that has changed the way lobsters behave. This year was a very odd year for us, where usually you have what we call the September slump.

In late August, early September, you see a drop in your catch. This year, it went on for much longer than we thought. But at the same time, we're getting shedders now. We're out fishing 20 miles offshore, and we're catching lobsters that are soft. They shed the day before. I hate to not be able to give you a good answer, but I can definitely tell you that I've seen the changes. I just don't have enough experience for my brain to really process them and be like, “Here's what the changes are.”

I've seen a little bit of a drop in lobster numbers, but before you write anything down, I think part of it is due to the way that Josh and I have been fishing. We tend to fish in a very short set. By the nature of that, you don't catch as many lobsters. I mean, cumulatively, you do. But if you have a trap in the water for five nights, or you have a trap in the water for two nights, when you bring those traps aboard, they're going to look very different. I think that's where my impression of a declining number of lobsters is coming from. There are statewide trends that the numbers are going down slightly, but I haven't seen anything worrying. We're still seeing a lot.

That's one change that I've seen, and that you can definitely – I'll stand by it. There's a lot more shorts than there used to be. There's a lot shorter lobsters with eggs than there used to be, and there's a lot more eggers than there used to be.

When I say, “used to be,” I mean five years ago. Again, not that much of a timeline, but it's crazy. There are lobsters that are several times – they’re not close to legal size. They're maybe two, three molts away from being legal size, and they have eggs like teen moms. It's crazy.

F2: [1:00:43] That's so funny. I fish in Gouldsboro, and that's literally what we would call them. “Oh, we have another teen mom.”

A: [1:00:49] Yeah, teen mom.

F2: [1:00:50] And they were so small.

A: [1:00:51] Yeah, crazy. So, you find them in the bay, too?

F2: [1:00:53] Yeah.

A: [1:00:54] Because I've seen them mostly offshore. It's interesting to know that they're everywhere. Yeah, they're tiny. I know that it's connected to the water temperature because it triggers their sexual maturity earlier. So, yeah, definitely a lot more of those, and a lot more eggers in general, even big ones, oversized ones. I always hear Josh complain about the tides. I always hear everybody complain about the tides. This is not something I've directly observed in the sense that I don't – I mean, I pay attention to it, but I don't experience it as directly as they do because basically what happens is that the tide, instead of turning when it's supposed to turn, it's either early or late by one to two hours, which kind of messes your day up in terms of planning.

But this is not onshore. When I go oystering, the tide is usually spot on, but when you're out on the water, that's where they notice the changes. I know that it's not just Josh because I hear everybody on the radio asking, “Hey, what's the tide doing over there?” and complaining about that. What else? Let me think.

Q: [1:02:04] You had mentioned green crabs.

A: [1:02:06] Yes. Well, we don't catch many green crabs in the lobster traps, but I do see a lot of them when I go out oystering. We used to fish actually right here on the shore of COA, so very shallow water, and the traps used to be full of green crabs. I know that Chris does his survey there and that it shows so. When I go oystering, they're everywhere from, like, tiny, tiny, thimble sized crabs to five, six inches across, nice big ones. I hate to say it, but I'm not totally sure how they're reacting to the temperature. I don't know what their ideal temperature range is, so I don't know if they're already being affected by climate change or not.

But the other thing that I wanted to mention was that we're seeing a lot of codfish in the traps and dogfish. We never used to catch dogfish, and this winter, we've seen, I don't know, five to 10 dogfish, which is pretty cool. All alive. All released.

Same with the cods. Big cods. I mean, they're not big for what they used to be, but they're nice, sizable ones. We catch cusk, too, which we're seeing more of. There's one other thing that I thought. This doesn't often come up. Oh yeah, we've been catching these deep-water eels. I don't know what they're called, but I can try and look it up if you guys want to know more in detail.

F1: [1:03:30] Hagfish?

A: [1:03:31] They're not hagfish. They're just big black eels. They're pretty thick across, ugly looking. (laughter) Josh doesn't know what they are, not that he's an expert, but he's been fishing long enough that usually he knows what this stuff is, but yeah, he's not sure what those are.

Q: [1:03:59] And how are those changes impacting your work?

A: [1:04:02] Right now, for me as a deckhand, they're not really impacting it, to be honest with you, but being married to a captain and seeing the ins and outs of it – the tide thing drives everybody insane. It's not a long-term problem. It's more of an inconvenience. But I can assure you that it creates a lot of stress among fishermen. If you want to then talk about mental health and all that aspect of fishing, I think this is an interesting thing to think about. Most fishermen think that the tide changes are related to climate change, and so even something like that that doesn't affect your bottom line, but it affects the smoothness of the day. It increases your stress levels.

I'm joking about it, but it's not actually negligible to be angry the whole day because the tide is not doing what it's supposed to. But other than that, I'm more thinking about the future. In that sense, it's impacting me – in the sense that I know I want to make a living on the water, so I'm trying to think now, what can I do to be ready for whatever is going to come in the next decade or so? That's part of the reason why, yes, I'm doing my lobster apprenticeship, but I'm not planning my whole life around going lobster fishing.

I'm looking at green crabs, which I think is a great emerging opportunity. I'm starting to think about aquaculture, which, like I said, I don't love the work, but I see the value of it. I'm a little worried about what the lobster population is going to do in terms of how they're going to react physiologically. Are they still going to shed around the same time of year? Because it doesn't look like it. Are we still going to see those huge volumes of lobsters that people were seeing up until a few years ago in the summer? Because we haven't really, and with warming temperatures too, the quality of the lobsters, I think, has decreased. Their shells stay softer a little longer. They're weaker.

For us, where we sell to restaurants, sometimes we need to float lobsters because they might not need them that day, and it creates a problem for us because if surface temperature is too high, the lobsters might die. We've been trying to come up with

solutions to that problem. There are none. (laughter) We should probably set up a tank at home, but that's a lot of money. If we wanted to set up a tank at home, we would need to have a cooling system, and we would have to keep the water clean. It's not that simple. Luckily, it hasn't been a huge issue. For now, it only happens a few days of the year that we need to float them so we can work around that.

If I was running a business where I was entirely selling direct, that would be definitely something to keep in mind. I'll find out this year with green crabs – because you have to keep them in the water to let them molt. I'll see how they do being kept in a crate, in surface water, exposed to the sun, in warm waters, not being able to do what they would normally do, which is maybe they would hide under the rockweed after they've shed to stay cool. They can't do that in a crate. So, I'll see how climate change impacts me then.

Q: [1:07:34] Yeah. Is there anything that you've tried in response to this? I know you mentioned that maybe there's some stuff you can't do, but is there anything you have tried?

A: [1:07:42] I can't think of anything right now but let me think on this. I'll put it in the back of my brain. (laughter)

Q: [1:07:52] Yeah, we can come back to that. Is there anything you would like to try?

A: [1:07:58] Differently –

Q: [1:08:00] In response to these environmental changes, yeah.

A: [1:08:02] Yeah. I'd like to see more information being shared about potential new fisheries. I'd like to see a little bit more preparedness that isn't just, "What are we going to do about lobsters?" I feel like that's the big conversation right now. "Ooh. What are we going to do about lobsters with climate change?" It's like, well, the ocean is pretty big, and there's a lot of stuff in there that can be caught and eaten. So, maybe instead of thinking, "What are we going to do about lobsters," we could think, "What else could we do to keep the fishing community alive, and what would they need to succeed?" I don't know what the answer is. So, unfortunately, I can't give you a very good answer (laughter), but I think that's the thing that I'd like to see differently. Why is the state not encouraging more people to get into green crabs, for example? It's beyond me why there is no push at the local or the state level to do something about a problem that – it's not solvable, but it can be managed, at least at the local scale, and it would relate to – it is directly related to environmental changes.

Similarly, why, for example, are we not trying to expand the scallop fishery? There's contrasting views on how the resource is doing. It depends on who you ask. At the same time, it's kind of an underutilized resource. There's not that many scallop boats. There's a good market for them, and it happens in the winter, which

might make it easier. It might make it a little more sheltered to environmental change in a way. But there's not much being done there, either. Pogies are coming back. Herring, they're coming back. Clearly, cod is coming back. I'm not saying let's open ground fishing up again. But as far as I'm aware, it would be very hard for me to go out and catch codfish commercially, even if I wanted to hand line for it. And why is that? The resource is there. You don't always have to go big. It doesn't always have to be a 50-foot boat fishery that needs three people on deck and several \$1,000 of equipment involved.

You can respond to climate change and to environmental change by thinking, "OK, what do we have now?" and, "Are there ways to utilize these resources in a way that is sustainable?" I think there are. The lobstering industry is a small-scale fishery, but if you look at small-scale fisheries around the globe, this is not a small-scale fishery. If you go to most other countries and look at the size of the boats, the state of the boats, the amount of money that is involved in fishing is not like lobstering at all, and yet, fishermen exist everywhere in the world, and they make a living, and they survive. You might not have a million-dollar boat, but if you're just trying to make a living on the water, maybe you don't need the million-dollar boat. I think the state and fishermen alike are kind of missing out on all these smaller opportunities that I think should be pursued to make the community, the fishing community, more resilient to environmental change.

- Q: [1:11:29] Yeah, absolutely. What do you think your biggest concern is for the future, which I think is sort of on that note? If you could tell policymakers one thing that you really want them to think about and consider as we move forward, what would you say?
- A: [1:11:43] Let us go fishing for more than just lobsters. Let us actually go fishing and experiment. Give us the shoreside infrastructure to make these markets happen. Right now, if we wanted to go groundfishing out of our harbor, we could never do that. We need ice. We need trucks to get the fish delivered. We could do that, but it would take a lot of work, and usually, that work falls on the fishermen. That's not fair because being a fisherman is already like two or three full-time jobs put in one and to add more on top of that is not feasible. Put some money and some thought and collaborate with fishermen and people on the ground to figure out how we can diversify the fishing industry in Maine. Don't just rely on lobster. I know that it's a great money-maker. I know people love lobsters, but there's more to the Gulf of Maine than that. I'd like to see actual working waterfronts, and not like the Bar Harbor pier, where we have two heists, one of which never works, and the other one doesn't either, and the ramp' broken.

I know there's been a lot of big storms that have created damage. That's not what I'm concerned about. But we don't have good waterfront facilities in Bar Harbor. There's some waterfront facilities around the island, but a lot of those are privately owned. You have to work there to be able to use them. It's not always that straightforward. Really, the main concern for me is the marketing and processing

side of things, like the fact that there are no real resources right now in Maine for fishermen to keep their product here and to pursue value-added products in Maine without having to export them. The dealers go do a great job moving our product. I will never understand how they move all those lobsters that they move in the summer, but they do it, and it's great, and I'm thankful for them. I think there are more sustainable ways to deal with the thousands and thousands of pounds of seafood that we bring in every year.

Q: [1:13:57] I'm curious if you think that there are resources fishermen have in order to address some of these changes.

A: [1:14:04] Do you mean institutionally or any?

Q: [1:14:07] Any kind. I have a list here – relationships, knowledge, training, organization. I totally hear that the state needs to do so much infrastructure-wise. Do you think that fishermen have capacity in a certain way to address it in other ways?

A: [1:14:23] I think yes. In theory, yes. In reality, it's hard. I've been thinking for a few years now about starting a fisherman's co-op here on the island. For example, my main barrier is property. I would not have a place to do this, or not easily. I can't buy waterfront property in Bar Harbor. It's totally out of the question, or probably anywhere on the island. I haven't actively been pursuing this, so I'm sure that I could come up with something. The ferry terminal is a waterfront property that is being built right now. They're looking for ideas on how to use it. But yes. To answer your question, yes, fishermen can could. They would have the potential to self-organize.

There's a few really good associations out there, like the MLA. There's a new one that started recently called the – I think it's the New England Fishermen Stewardship Association. I'm not sure their acronym is NEFSA, and I know they've been doing a lot of advocacy work at the state and federal level. The biggest obstacle is getting fishermen together, I think, and getting them to work together, especially fishermen that work independently that don't go through a wharf or a co-op. The sense of identity and of "I'm doing this on my own" is so strong, and things are working well enough right now that it's hard to convince people that it would be useful to start thinking about the future in a different way. Because there technically is no need right now. If you're not being super long-sided, you could go fishing for another 10 years or so, probably, and make a good living and then worry about it then.

I feel like it's a little hard to get fishermen organized. I feel a huge barrier in this, being a woman and not being from here, to go back to your original question. I think fishermen around here take me seriously as a deckhand, but I think if I started to try and organize something, they'd laugh my way out of the town. I might be wrong. I hope I'm wrong. But I don't feel like I have enough social capital to really

get people together right now and be taken seriously. That's another barrier for women to answer your previous question.

What else could we do? I think the Bar Harbor case is pretty – it's a case in point because there's been a lot of discussions about what to do with the ferry terminal, and one of the options was to move commercial fishermen up there, and most fishermen around here – I helped the town do a survey and all that, so I have a pretty good idea of what fishermen thought of that idea, and they were not into it. I understand why. There's a lot of cultural and emotional attachment to the town pier, and there's something to be said about having a commercial fishing operation happening in the heart of town. But also, I thought that was a pretty neat opportunity to have a lot of space and to design it exactly how we wanted it, to design it thinking about the future. But I guess most other people didn't see it that way for now.

Q: [1:17:47] Have you participated in any climate resilience or adaptation strategy training programs that sort of thing?

A: [1:17:54] I actually have not.

Q: [1:17:55] What strategies do you think would be really effective in building resilience against climate-related impacts for fisheries?

A: [1:18:05] See, this is such a tricky question, and it's part of the reason why I've never been to training because I've been to other training along the lines of those, and I never really felt like the information is that's given to you is that useful in real life. They might say things like, "Oh, you have to diversify," and "You could diversify by starting an aquaculture farm," but those aren't – people already know this stuff. I mean, I'm talking without knowing what they actually tell you in these specific workshops because I haven't done one. I don't know what would be more useful. I'm trying to think because I also hate being one of those people that just complains and never has a solution. Ask me the question again.

Q: [1:19:00] What strategies do you think would be effective in building resilience against climate-related impacts?

A: [1:19:05] OK. For example, I'd like to see the state organize zone council meetings sort of with fishermen and say, "OK, we want to come up with – what would help you guys get ready for the future?" Maybe these are some of our goals that we'd like to see in the fleet. We'd like to see a more diversified fleet. We'd like to see an X-percent increase in aquaculture farms, whatever. I'm sure the state has some goals that they've set, or even the Island Institute or any other institution that's involved in resilience work. These are some of the goals that we've set. How do they align with your goals? Are you interested in these? How can we help you achieve your goals? Maybe fishermen want to diversify not by going into aquaculture but by being able to process their lobsters in-state.

I'm just thinking out loud here. Or creating an easier way to sell to restaurants. It's so complicated to sell to restaurants, especially for us with a federal license. It's not as straightforward as going to the chef and being like, "Hey, do you want some fresh lobsters?" Which is how it should be. Why is it not that way? What better way to track where your food comes from than to have the fishermen show up at your door and give you the lobsters? But it's not that simple.

So, maybe that would be a way to increase people's resilience because don't rely on just the wholesale market anymore. You can become a little more creative. You don't have to work as hard, which might mean that you can then have another job. It used to be a thing in Maine that people didn't just do one thing. They had a very diversified portfolio of jobs. A lot of fishermen did that, too. I don't think everybody wants to go as hard as they have to these days. So, if there were options to make the fishing work more valuable and free up some time to do other things, that's another way to create resilience, I think, and diversify. I'd go for resilience training like that. (laughter)

I'd like to see a little more help and qualified help in figuring out licenses and permits and a little more – yeah, a little more clarity. For example, selling oysters is very confusing. Maybe I'm just not very smart, but I also know that – I'm not saying this to brag, but I have a master's degree. I have training in reading complicated documents and extracting information out of them, and to this day, I sometimes read instructions on how to apply for fishing licenses, and I don't understand what I have to do. It makes me wonder, what about a person that might have come out of high school and decided to go fishing, and now they have to figure this out? If I can't, with all the years of academia that I have behind me – maybe I'm just dumb, and they're smart, and they figure it out. But it just makes me wonder – why is it so complicated?

Where there's a lot of different entities involved – for example, to sell at farmers markets, you might need authorization from the Department of Agriculture if you're selling a value-added product. I'm telling you right now, there is no clear way of understanding this from any website at all. So, something like that would be helpful to either have like a point person at the DMR that actually knows what they're talking about and can help you figure it out, or have a training once a year, once every six months – I don't know – where they say, "We're here to help you. This is what you want to do. You want to sell lobster. You want to turn lobster tail." Oh, my God. "You want to catch lobsters, make frozen tails, and sell them to restaurants. This is what you need to do to do that. You want to go harvest mussels and sell your mussels door to door. This is what you need to do to do that." Because the flip side of that is that if you don't do the right thing and you get a fine – I want to be in compliance. I have no interest in breaking the law. I can't afford to break the law most of the time because the fines are pretty hefty. So, that'd be a cool resilience training to go to.

Q: [1:23:10] Yeah. Are there any other kinds of changes that are affecting your work that feel super relevant or that you want to talk more about?

A: [1:23:18] I don't really want to talk about it, but I will mention it. The federal government is really coming down on us with all those regulations, and specifically for us, it's making it very hard to sell directly to consumers, which I really – can I swear? I really think it's fucked up. I don't understand why a government would want to put barriers into getting food to its people because that's literally what's happening right now. We are technically only allowed to sell product caught in federal waters to federally authorized dealers, and I just don't understand why. There is nobody that can talk me into agreeing with this or seeing any benefit to this. I don't think it benefits the resource. I don't think it benefits fishermen. I don't think it benefits the consumer. I don't think it benefits the local economy. It creates a lot of paperwork. It creates a lot of work that doesn't need to happen.

I might now have to become a federally authorized dealer, like me personally, with all the costs involved in that to be able to sell lobsters to the restaurant that's a 10-minute drive from the pier. I just don't see the point. On top of that, they want us – we have to report every time we fish. We have two trackers on the boat now that track our position every 30 seconds or so. None of that makes me want to be a part of the industry. There's a lot of other things that do, but that does not make me want to be a part of the industry. There's a very widespread feeling that it's been designed to do that to you, to not make you want to go fishing, to make it so hard that you're just like, “Whatever. I'm not going to deal with it,” especially if you're an owner-operated business.

Q: [1:25:14] Yeah. How are people coping with that feeling?

A: [1:25:16] There's a lot of anger and frustration. Like, a lot of anger. I think fishermen are a very stubborn group of people, thankfully, and very resilient, and they're probably – most of them are going to push through. But there's, like I said, a lot of anger, and a lot of people are tired and have no motivation or interest in working with the government anymore, which, again, I don't understand why you'd want to create that with your own people. You're supposed to be there to serve them and make their life easier. This is the exact opposite of it. Now, you have to report every time you go fishing, like I said, and it's a 10-to-15-minute process, but you can only do it online.

There's a lot of fishermen, not even older ones – I have friends that are about my age that don't feel comfortable doing that, and it's perfectly legitimate. I don't expect a NOAA person to be comfortable going out fishing. Their work is computer work. I don't expect a fisherman to be comfortable doing computer work. It's not their field of expertise. That means extra money because now these fishermen often hire – there's now agencies that offer their services to do the reporting for you, so now you have to spend extra money to do that. People are sick and tired of it, regardless of their gender or years in the industry or field that they're

in. From what I can see now, the result is that a lot of fishermen don't want to collaborate with the government anymore. I think that's really to the detriment of everybody involved, including the resource.

Q: [1:27:07] Can you tell me about any positive changes or opportunities that you've seen?

A: [1:27:12] (laughter) I can try. (laughter) Well, actually, after all that I've said about sexism, I do see a lot more opportunities opening up for women. There's a lot more captains that are willing to take women on board, and because of the student program, there's also a lot of young girls and women that have gone up – they've grown up fishing, and they're now coming into their full commercial license. So, I'm expecting to see an increasing number of women captains out there. To me, that's a really cool thing because that's how you get a strong and resilient fleet and a strong and resilient community, is by diversifying the kind of people that can access industries and can get a job and can be fulfilled and can have some personal successes. Not everybody wants to have a nine-to-five job, and it's important for the overall health of the community that each individual can, I think, realize themselves and their goals. I think that's pretty cool.

I see a lot more interest from the general public in eating seafood and eating local seafood. I think the pandemic helped with that. I think having a few people that actually go out and try and get their product to the general public helps. It's kind of a virtuous cycle. That's encouraging because it means that there's individuals in there that see the opportunity. They're like, “Oh, there's a demand for local seafood. Maybe I can start a process –.” I keep going back to the processing plants. But just to say there's people that are seeing shoreside opportunities in this increased interest in local seafood, and again, that's a great thing for everybody. It's a great thing for us fishermen. It's great for the community. You create more jobs and all the good things that come with it.

In terms of positive things that I'm seeing from environmental change, I tend to be a little doom and gloom when I think about climate change, but if we really want to look at the silver lining, there are emerging fisheries that could potentially become viable and support families in the future. Not quite yet, but between green crabs and – is it the black –? – yeah, black sea bass that's kind of coming in our waters, or other species that may appear or come back – I don't know. But if we have to find something positive in climate change, I guess that's it. The ocean is always going to provide. There's always going to be something that we can catch and make a living on. I'm a little worried about shellfish harvesters, but hey, what can you do?

Q: [1:30:14] Why are you worried about shellfish harvesters?

A: [1:30:16] Well, usually, things like oysters don't grow as – no, actually, that's not true. It's the cold that's not good for oysters. But it creates a lot of bacterial – what is it called? *Vibrio*. There's more risks of bacteria-born illnesses with warm

weather, warm temperatures, and higher risks of emergency closures when shellfish harvesters can't go to work. That's why I'm a little worried.

Q: [1:30:45] Touching on some of the things you mentioned at the end there, what do you think is your hopeful vision for Maine's future for fisheries?

A: [1:30:53] I'd like to see a way more diverse fleet than we have now in terms of fisheries that we have access to. I'd like to see more small boats out there. So, even if it means having more fishermen, I don't mind. Instead of having one big boat, I'd rather have two small boats. I'd like to see more creative aquaculture happening. When I said earlier that I'm thinking about that, I'm really interested in permaculture, and I really like to try and do that on the water. I think it can be done. Just having multi-species, more integrated farms instead of just focusing on one product. You can do it on land, so I don't see why you couldn't do it on water. It might take a little more work, but you can grow.

For example, my friends that have the mussel farm have nets outside the farm, outside the mussel ropes to keep birds out, and they're kind of effective. But for one, sometimes birds die because they get tangled up in them. And for two, you have to keep them clean, which involves work and time and money and equipment. I'm not into any of that. I've always been thinking, "Why not grow kelp around your mussels and have a high-density kelp forest with all the environmental benefits that that brings to the ecosystem and to your mussels?" You can harvest the kelp, probably, if you grow it right, maybe not all of it, but you can harvest some of it. You don't have to spend money on equipment. You don't have birds dying on you, which I'm not a big fan of. Maybe it's being done somewhere around the coast. But this is the sort of idea that I'm playing around with.

For example, oyster farmers have huge problems with green crabs. I've never seen an oyster farm set a green crab trap, and that, to me, is wild. When you have a garden, you put up fences against deer, right? Why not do the same thing on the water? You're on the water already. Whoever's working for you probably has the knowledge to haul a few green crab traps. It may not make – it would make a bit of a difference. It wouldn't make a huge difference, but it'd make a bit of a difference. Now you have a different product that you can market, and you can sell, and it increases your revenue and it makes your farm stronger. Yeah. So, I'd like to see more of that stuff happening in aquaculture.

Q: [1:33:24] Great. Thank you.

A: [1:33:25] You're welcome.

Q: [1:33:26] Is there anything else you wanted to share with us before we wrap-up?

A: [1:33:28] No, I feel like I've talked for so long.

Q: [1:33:32] Hillary or Jess, do you have any questions before we turn off the recorder?

A: [1:33:37] Let me think.

F1: [1:33:38] Oh, there was one follow-up question. You talked about being interested in having kids in the future. Would you want them to go into fisheries?

A: [1:33:46] Yeah, I'd love for them to be able to work on the water. So, Josh's kids fish. They've been fishing since they were eight years old, and they may not love it the way that we do, but it's so cool. I met them when they were 12 and 14. So, just coming into young teenagers, creating their identity and stuff, and just thinking of what opportunity that is for a young person to be out on the water on your own, and that sense of accomplishment and skill-building, and – what's the word? independence and ability to do things. I think it's great. I think not many kids get that anymore because a lot of us grow in – our life is usually pretty channeled from a very young age.

I think fishing gives you a lot of freedom, and not the kind of freedom that – it's not like, "Oh, I'm going to go partying" freedom, not that kind of freedom, more like an internal freedom that is very valuable. It's a cool job. It's hard work, but it's a cool job. It's better than being indoors, I think. So, yes, I would absolutely love for my kids to have a chance – my unborn kids to have a chance to work on the water.

Q: [1:35:12] Great. I will go ahead and stop the recording.

A: [1:35:15] Cool.

Q: [1:35:16] Great.

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