

Interviewee Name: Paul Anderson

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Interviewer(s) Name(s) and Affiliation: Galen Koch (The First Coast) and Griffin Pollock (College of the Atlantic)

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Interview Description:

Paul Anderson, a scientist and executive director for the Maine Center for Coastal Fisheries from Winterport, ME, talks about the encouraging trend of collaboration between scientists and fishermen in Maine, the necessary growth of citizen science on the coast, the failure of scientists at large to adequately address the problems posed by climate change, and the importance of integrating aquaculture into the larger Gulf of Maine ecosystem.

Collection Description:

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Transcribed By: Griffin Pollock

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GK: Galen Koch
GP: Griffin Pollock
PA: Paul Anderson

[0:00:00.0]

GK: Perfect. That's great, thank you. Alright, so I'll just have you first say your first and last name, and your home town and occupation.

PA: Okay, I'm Paul Anderson. I live in Winterport, Maine, and my occupation right now is executive director of the Maine Center for Coastal Fisheries which is in Stonington.

GK: And Paul, can you, I think just talk about some of the things that you've been hearing at the forum and what's on your mind right now in the fisheries and for the coast?

[0:00:32.1]

PA: Yeah, sure. It's been really interesting for me to get into this world, this work that I do, 'cause it's more fish than I had been accustomed to. I spent my whole career looking at communities and ecosystems. And, um it's really neat, even though lobster dominates, there's obviously conversations that are either going on, or need to go on about how the lobster relates to the other parts of the ecosystem. So we have this bait issue going on, right? That's about the herring fishery largely, but there's a whole bunch of other, I think, creative opportunities for thinking about solving the bait problem, not just beating up the herring, but actually getting more creative about that. So here you get lobstermen, and lobster regulators, and you know, the NGOs I think flexing a different creative muscle around what does that mean to us. Fishermen are so resilient, they're gonna figure this out, you almost have to get out of their way and let them. But, you know, the science and our kind of institution can help bring that together.

[0:01:41.8]

PA: Similarly, the whales. So the whales represents another conundrum for the lobster fishery, but there's some great questions being asked about, you know, what is the ecosystem doing to the whale population? It's not just the problem of wrapping whales in ropes and if we stop that everything's gonna be perfect and wonderful, because there's so many other factors in play. The whales are hungry, and the ecosystem that supports their food is fragile. And so in many ways, those three pieces that I just described are all part of one greater challenge. And so that excites me because we're launching a new initiative at the Maine Center for Coastal Fisheries, in partnership with NOAA fisheries and DMR, to explore ecosystem based fisheries management in eastern Maine.

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PA: And so we're starting a process right now of convening industry members and scientists to begin to ask ourselves, "What do we know we know about the fisheries, and the data from ecosystems, and the observations, and monitoring?" What do fishermen know, how can we integrate all that to kinda be a baseline so we can start asking the question, "What do we need to know?" You know, and one—those three examples I just stated are some obvious low hanging fruit. What do we need to know? Well we need to know migratory patterns of right whales, and what do they eat, when do they eat it, and how is the changing world affecting their behaviors so that we can better, um analyze that interaction with the lobster fishery. So that's what I'm hearing here in some of these hallway conversations, is that—that there's a broader, I think more exciting conversations happening. And the fishermen that are paying attention are asking those harder questions too.

GK: It seems like it's almost a more, like holistic approach. Like you're looking at the whole—

PA: Yeah.

GK: —how everything is interacting with each other. Instead of—and has that for you does that feel like that really is a shift from previous, kinda methods of regulations, or thinking about . . .

[0:03:55.4]

PA: I think it is. The whole thing about the ecosystem based fisheries management has been talked about for years. I read about it when I was in college, it was this idea that we shouldn't manage one fishery at a time, we should understand their interactions, we should understand how they interact with the environment. When do they breed, when do they fecund, what's their nursery grounds. And so we've talked about those principles for so long, but rarely do we change our behaviors. Rarely do we say, "Well let's stop fishing in that nursery ground, or let's think about how these things interact." And, um so the reason that I took this position, I left a perfectly good gig at the University of Maine, was because of this agreement that we're not just gonna study the EBFM, which is what you're asking me about. We want to actually explore how to change behaviors, how to create new policy that's informed by that local knowledge, that's informed by that local sensibility.

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PA: And, um if the industry is part of that equation, then they're gonna comply better. They're gonna understand why did we decide to preserve that mussel bed: because we found out that it was such an important source of spat, so we wanna leave that one alone. Because the ocean—oceanography tells us that it's providing spat and these other important places. So we can—if we can learn those things at a more sophisticated level with technology, but also at a finer scale, then maybe we can make some of these, um decisions and create a future that's smarter, longer term sustainability, but also nimble enough to respond to the right signals as they take place.

GK: Yeah, and it sounds—is it informed by people, by that local ecological knowledge about, you know, like fishermen would just say, "Oh, we don't go there at this time."

[0:05:47.0]

PA: That's, that's how we foresee it. That's one of the principles of the Maine Center for Coastal Fisheries, is not to do this to the communities, but to do it with them. And so their knowledge has to come into the room, and whether that's real, you know, scientific observations. Because I see this in my traps, or I see that. Or whether it's their sensibilities coming in to a meeting with scientists who are trying to plan an experiment, or something. And they say, "Well you can't do it there. This is there, you want to do it over there." And the scientist will usually go, "Oh, I didn't think of that." It's really awesome when you see that local knowledge kind of inform an experimental design, or something.

[0:06:27.2]

PA: On Thursday, the clam convening here was really striking. There was a couple of, um moments where I just thought, "Those are ecosystem based ideas." That if you didn't think across your own little world, you wouldn't get there. So one of 'em was a great guy, what's his name . . . Herb Carter from over in Stonington, Deer Isle. Clammer, been clamming forever, and he's got this real concern in particular bays, if you drag the bottom like you're dragging mussels or something, the silt, the geology of that particular bay is so fine that it kicks up and creates a different sediment profile that becomes a profile for the clams. And he's like, "We just—we shouldn't drag there. If you're gonna harvest those mussels, fine. But let's do it with hand gear instead." That's a pretty simple regulation to put in place. It's gonna upset somebody, but it's a change in behavior and it's responding to, um an observation that was made local, that's local ecological knowledge what Herb is sharing. And can you study that and prove whether it's true or false? Could we find out that some of these estuaries have that particular kind of geology and therefore—"Well let's be careful in those places, let's not just go take every mussel there is because it's there, let's think about what we're doing when we drag something on the bottom."

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PA: And the other observed observation that was really cool on Thursday was some modeling that these guys had done around mussel spat, and where it comes from, where it goes in eastern Maine. 'Cause it hangs out in the water column and it moves when it's—when it's tiny. And their science suggested certain areas were real sources of spat, and they were going to these other important harvestable areas. So that would tell me that, well, if you could prove that, maybe we call that a nursery area and let's not mess with it. Let's nurture that and keep it as a nursery area and not harvest it, or be careful if we do. And um, so thinking along those lines and understanding how to use that technology along with local observations—maybe we get smarter about managing the resource. And maybe it's all aspirational and it's all just gonna do whatever it does 'cause of climate change. But it's, um it's really exciting to be in a position as an NGO trying to bring public resources together with local community interests, and see if we can nurture deeper conversations.

[0:09:02.4]

GK: Yeah, I had Herb in here and I.

PA: He probably told you that story.

GK: Was great—well I mean, he’s—I’ve talked to him a lot about some of that stuff that he’s been doing and his observations, and I think of a thing that strikes me is just knowing that you’re listening from the position of the—a person in a position of power within a NGO that can connect people. And that he was really speaking about this need for people to work together, this is like the crucial moment. And I wonder, you know, even . . . Also with climate change, just how that—this moment feels for you in terms of bringing people—

[0:09:45.0]

PA: Well there’s another thing that’s, uh I think . . . Um, I’m trying to figure out how to articulate it because I think it’s an Op-Ed that needs to be written. Climate change is changing things around us all the time, and it has been for a long time. And, um I think that the science community can sit in our ivory towers and say, “You need to stop doing that, you need to change, you need to—” I think the science world needs to change. I think a lot of our experimental design, and the way we interpret long term data seriously needs to change. Because there’s not long term data series anymore. We used—we used to assume if you could measure something and associate it with something else, then it’s indicating something. And the longer time you measure that, the more credible your conclusion is. Okay, I’ve proven that relationship, right? It’s water quality, it’s acidification, it’s something. And it turns out that, no, that may not be true because there are variables in that mix that we assumed were stable and because the ecosystem’s changing around us so much, many of those variables are probably affecting those relationships we thought we were studying.

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PA: So, that trend line in some of this kind of science, and it probably relates to fisheries science. I’m not a fisheries biologist, but I know we go out and we count—we think we count the fish and we assume that’s how many there are, and therefore that’s how many you can take. I would call into question how science community figures out and understands the dynamics of long term data series and how to be sure that we’re not wrong, that those interpretations are taking into account this flux that’s in—that’s around us. So that’s something—I don’t even know how—I just rambled on.

GK: Sure, yeah.

PA: I don’t even know how to say that in a succinct way, but I really wanna figure that out. Because that’s—that’s one of the things I think we at the center can explore, and we can poke and probe and kind of call people on that, and demand that they come and dig in and admit those vulnerabilities.

[0:11:56.7]

PA: The other thing that I really want us to figure out, and I think we have an opportunity, particularly with this project, is how to take the LEK, the local ecological knowledge that you're talking about, and integrate that with scientific data. And figure out if there's a process, or a set of principles, or best practices for finding the quality control that's needed so that the formal science community and regulators trust local ecological knowledge, so that it's more than just a story. It's not a lie, it's not hyperbole, it's an observation and it deserves to be in the common knowledge. There's a lot of skeptics out there, you know? I was at Sea Grant when we started bringing citizens into citizen science. It was in the '90s, I mean it was brand new. We were kind of at the point of that here in Maine and, uh did a lot of things, and we had to talk scientists down, we had to talk regulators down and say, "No, we can do this. We can engage citizens, we can teach them how, we can do quality control, chain of custody, whatever it meant. And they can be legitimate contributors to knowledge." And so Maine has been at that vanguard, I think, for a long time. And, uh I think the furthering of that evolution so the stories *you* get, um aren't just dismissed as opinion. They're actually good information.

[0:13:28.3]

GK: Yeah, and we've been talking a lot about that this year, just because of the sheer volume—the volume of work that I've done up and down the coast too, independently. And just how much—how many interviews we have. And what is—what is the value of that? How does it become valuable for you, and what's that collaboration like? And I think it's a good conversation to keep going. And I also am curious, so you were kind of at Sea Grant when that was—some of that was starting. Um, and do you remember—I mean what the inspiration behind it was?

[0:14:04.9]

PA: Sure, let me tell that story. So I was actually at DMR, 'cause I ran the public health program for DMR. And was brought in in 1989 I think is when I got hired. And the federal government, FDA, had just declared that DMR's whole classification program for the shellfish areas was not making the grade. And FDA was gonna come in, and they did, they came in and they said, "You have to close all of these shellfish areas because you don't have the data to prove that they're clean. Therefore, they're dirty." And so the legislature said, "Oh my god. We've gotta hire some new scientists, we've gotta build a new lab." I got hired, I was the new microbiologist, I helped build the laboratory in Lamoine State Park, created that new capacity, and looked at the protocols that the FDA said—how many samples you have to have. You had to have 30 samples from every spot, and preferably over five years to prove that your area was safe. And we were like, "We can't do that. In five years, are you kidding? Our shellfish industry will die. And those are perfectly clean clams, can we expedite that? And further, how are we gonna collect all those samples?"

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PA: And so I worked with Esperanza Stancioff who was at coast—at Cooperative Extension, I was the regulator, and Kathleen Laden who was on the Maine Coastal Program. And the three of us really kind of pioneered the opportunity and just made it happen. And we said, "We're going to use citizens, we're going to help organize local volunteer programs. We're gonna let clambers

collect water, as long they train ‘em, and they do it right, and they bring their samples to us in a timely way.” And so we were able, within a couple of years, to turn that around, and ended up opening a whole bunch of clam flats. Because we got our shit together, frankly. And because we got some citizens to help. And I think we ended up with a clam community who began to trust us, began to say, “Wow, you are really here to help us, aren’t you.” And those were good years, through the ‘90s we, um we turned a lot of things around, we found pollution problems and we’d solve them, we opened up clam flats, we established citizen based volunteer monitoring in a fairly robust way. And, you know, I think if you play back the history, we were at the point of that around the country. And some of the scientists were, like skeptical. “No, you’re letting the fox guard the henhouse.” You know, and that kind of stuff. “You’ve got the blue-haired brigade out there.” It’s like, “No no no. Those are credible people that care, they wanna do that right.”

GK: And that perception that, I think Maine—I think when you’re at something like this, I feel it most strong—like very strongly, is that fishermen are invested in the resource as much as—they don’t want to ruin it. And clammers don’t want to see it go away. And having that—it’s a different narrative than you might here from some perspectives of some organizations.

[0:17:14.6]

PA: Right. And part of that training of them was convincing them that pollution’s a problem. You don’t really wanna make people sick with your fishery, that’s a bad thing, you know. You’ve got a valuable fishery here, you want to keep it valuable, keep it clean. And if anything, you should be fighting with DEP, getting money into the system to improve pollution problems. Talk to your code enforcement officers, get ‘em off their duff to do the right work. That this isn’t a DMR against—there’s other forces that we could work on. Another curious story at that time, the program I ran also ran the red tide monitoring, right? Marine biotoxin. And, um we had some of the shellfish community came to me and said, “There’s no such thing as red tide, are you kidding? That’s just a conspiracy, you guys are colluding with the blueberry industry to create cheap labor. You’re shutting the flats down in the summertime so that we’ve gotta go rake berries.” And I was like, “Well that’s—that would make a great novel, but that’s absolutely not true, come here.”

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PA: I brought them into the laboratory, injected live mice with an extract from shellfish that were toxic, and the mouse jumped around for 10 or 15 seconds in a beaker, and keeled over dead. And you never saw a bunch of clammers go white. Just like, “Oh my god.” So, I mean, it’s—I’m kind of hyperbolizing, but the point was we brought them into the laboratory and showed them, “Look, these clams are dirty, they’re contaminated, they smell bad. Now I’m gonna show you the microbiology. This has toxin in it, that mouse just died trying to show us that.” Which is—at the time that was the state of the art technology. But—

GK: And they—and yeah, it’s proving—it’s giving them opportunity to actually see it for themselves.

[0:19:06.5]

PA: Yeah, so we opened up the door and we brought ‘em right in, and I think we got better compliance. ‘Cause if you look at this coastline, you can’t possibly enforce all those clam flats, you can’t be there. So you’ve gotta have some trust, and you gotta have some compliance, voluntary compliance. And if they understand the system that they’re working in, they know, “It rains like heck, I’m not gonna dig for seven days because the water’s dirty, I’ll go do something else.” And they believe it, they understand that. So I don’t know how—it’s an imperfect system, but that’s some of the progress I think we tried to make over the last 20 years.

GK: Yeah, I think we have time for one more question, and I just want to, you know, obviously you’re looking forward to this, um to this new system of management, but is there anything else on the horizon, or concerns, or hopes that you have for either coastal communities or the fisheries?

[0:20:00.6]

PA: One other point I’d like to make, and I’m trying to make it in whatever audience will listen, is that aquaculture is emerging, and it’s been here for 30 or 40 years. But as it’s emerging in its’ latest incarnation, I think we’re suffering from our own tendency to separate aquaculture and wild fisheries. And that we have to find a way to combine forces and think about them as a seafood system. It can be integrated, it can use the same working waterfront, it can have some principles around quality control, and the ecosystem management. It can think through conflicts between fisheries and resolve them, and because the market opportunities, and the transportation infrastructure needs, the coastal harbors, and so forth, are all common. Whether you’re catching lobsters or growing oysters. And, uh if we can mature our way to a point where we do treat that more as a combined, and robust, and high quality opportunity, then I think we can create good economic opportunity, and good food. And I don’t know how we’re gonna get there, because the forces still seem to be stovepipes, but we have to keep trying.

GK: Yeah, great. Thank you so much.

PA: You’re welcome.

GK: That was great—

[0:21:27.2]