[..]My professor had a project, a semester-long ethnographic tour of San Juan Bay. We're talking about 1973, which was a completely different time; there hadn't been any revitalization of the area. So, that was where I, for the first time, had field experience related to fisheries, but since I was born in Old San Juan, my dad took me along the coast and all that, so I think that also influenced. At the end of high school, I worked in Archaeology with someone who was also one of my mentors, Gus Pantel, and then we did some studies in Cabo Rojo, and the last site we explored was Ostiones, north of Puerto Real. So, when we came down from, the place we stayed was in Boquerón, so when we left Ostiones, we would stop in Puerto Real for a beer. And that's when I said: this place is completely different from the rest of Puerto Rico, and that stuck in my mind. In '76, I went to Stonybrook to do my doctoral studies—master's and doctorate combined—and then in my ethnology course, I read Cat Harbor, by James Faris. And I said: well, what I want to do is study the fishing villages in Puerto Rico, the fishing and coastal communities in Puerto Rico. And I began gathering information from secondary sources, made some visits, and then in '79, I began a process of fieldwork, from '79 to '84, while I was writing my dissertation for Stonybrook, which I completed in '85 on Puerto Real, and a bit about the context of Cabo Rojo. But here with Sea Grant, I worked as a research assistant with Dr. Jaime Gutiérrez, who was a sociologist and had some projects on fishing villages—not just fishing villages—on fishermen's associations and some fishermen's surveys, and I collaborated with him, and that allowed me to meet and collaborate with Jon Poggie and Bonnie McCay, who came to work here in Puerto Rico.

[00:06:11]

And so, well, the die was cast, the writing was on the wall. And in '85, I finished, and in '85, I was recruited to be an Extension Leader, a marine extension leader for the Sea Grant program, and directly to the associate program. Another stroke of luck, because the person who was the program monitor or supervisor at the time was Shirley Fisk, who is an important anthropologist, and so I learned a lot from Shirley, about how to translate knowledge into action and all that kind of thing. So those were my origins, and that's why, and I was interested in understanding what had happened in Puerto Real and why it was different, and despite my approach being ethnographic, I began to think about the question of history, and I began to read Fernando Braudel, a collection of essays he had, called On History, and I said, well, without understanding history we cannot understand what happened here. So, back in '84, I wrote some oral histories, trying to gather information about what had happened over time. I also used my contacts with the local historian Antonio Ramos, who allowed me to see a series of documents and materials he provided me at the time. He had also written a book about Cabo Rojo that helped me enormously. So, I continued working on the historical issue.

-Can you tell me a little more about that, about what you've learned over the course of your career about Puerto Rico's fishing communities, especially Cabo Rojo? How do they agree or disagree with larger theories of knowledge about fishing communities and how they work?

-Well, let's start with my teacher from Puerto Rico, who was the most important, because my teachers in the United States were very good, excellent, but...

[00:09:05]

-You didn't tell me the name...

-Pedro Carrasco and David Gilmore. And I took courses with Louis Faron. I don't know if you recognize him, but Louis Faron collaborated with Julian Steward on The Handbook of South American Indians. And he was also a specialist in peasantry and the Mapuche in Chile. For me, it was also very revealing, right? What's happening? The approach of American anthropology was one of modernization, of the modernization process and the question of the economy, a formalist economic anthropology, of rational, rational decisions, which had to do with that. So I began to take a different look at the business issue, the issue of companies, because my professor was more affiliated with a model of political economy, based on Marxism, it must be said, which in the 1970s, Marxism began to be accepted in anthropology, interestingly, through Raymond Firth, who began to bring it back into the debate. And along those lines, there were people working on this, like James Faris, for example, and others like Ivan Breton, who was—I don't know if he's dead yet—Canadian, who worked with Mexico and other places. I began reading about all those people to see a political economy model of class formation, capital formation, and class formation in fisheries, and class relations. So there's a whole theoretical model, a little different from modernization theory, because of modernization, the state providing the mechanisms for people to progress. But what if there's a history of class formation, which is what I discovered in Puerto Real? That there was a history of enterprise formation, not fully capitalist, but with some of that, because these people had the facilities to monopolize the fish, but they also owned the boats and the fishing gear, the traps, and all that.

[00:12:12]

What's happening? The people who worked for them were semi-proletarianized forces; they weren't independent workers like the fishermen out there. They were people who were tied down, tied to the refrigerator, tied to the houses they bought, to the fish house. And so, well, that was completely different from what was happening in the rest of Puerto Rico. So, my approach was to try to understand that process on that scale of capital accumulation, reading people like Roseberry, and that kind of thing. And there in another fortuitous event, right, I met David Griffith, and then I had also read, interestingly, I had also read Michael Orbach, I don't know if you've read Michael Orbach, but Orbach wrote a book about the Tuna Seinermen in San Diego and for me it was interesting to see how they handled the issue of money, how they came and fished, and then, how they fished in the Pacific, crossed the Panama Canal and came and landed the tuna here in Mayagüez, because in Mayagüez there were the tuna boats: the StarKist, the Bumble Bee, and all that, which have now disappeared, that's another fantastic story. So, I met David Griffith, and the story is that they gave David Griffith—this is the apocryphal story, you know? I don't know how true the story is—an NSF grant to study fishermen in Puerto Rico, and they returned the grant because they didn't have anyone local and they didn't have Interviewee Valdés, who had done some studies; someone told him that. So he contacted me, and I said, well, great. And so we worked on a design of life stories—not oral histories, but life stories, work-life stories of fishermen in Puerto Rico. And we spent about two years working on the fill, and then we wrote the book, which was published in 2002: Fishers at Work.

[00:15:04]

And so, I learned a lot from David, because he's a very generous guy, also with his knowledge, and the discussions with him were important to me. And then we worked on other projects related to marine recreation and that sort of thing, here with Chaparro, and we had a great working relationship for many years. Later, he did some work for NOAA on coastal communities, and then he included Carlos García Quijano, another superstar in all of this. And so, I don't know if I answered the question, but that's where it goes.

-Yes, yes, he answered it, but one thing I want to ask you, I'm still in the beginning of understanding and getting to know the fishing communities and how they work here in Puerto Rico, but he told me that the community of Puerto Real, at least at the time I was studying it, was quite different from the other fishing communities in Puerto Rico, could you give me a little more details there?

-Basically, the boats were larger, they fished, they could stay in the water for five or six days. In the rest of Puerto Rico, they fished with pots, with traps, so they would go that day and collect. The pots began to decline in Puerto Real, and they fished with deep-sea lines, and they went to different fishing boats through the Mona Channel, throughout the Mona Channel. At that time, they even fished in the Dominican Republic, and they had fishermen from the Dominican Republic. For example, Tomás Rosa had fishermen from the Dominican Republic who lived on his premises there. So they would go fishing on their boats, and he would pay them and all that. So, in that sense, they were different because instead of people going fishing with yolas or sloops, on sloops and schooners, they went fishing on these boats. Even the people who worked the fish traps started buying boats. The government provided funds so they could buy them. And, in that sense, they were completely different from the rest of Puerto Rico, because we did a study of all of Puerto Rico, right, with the Sea Grant program and Dr. Gutiérrez, and we did a study of the fishermen's associations, and there, well, I was able to see that it was completely different.

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And I also conducted some surveys—some interviews, not surveys—all over Cabo Rojo, trying to gather information about what fishing was like in Combate, Corozo, and other communities, and it was completely different. They were already starting to try to fish in the La Mona canal. And in '84, '85, when I was finishing up, one day I found one of the people who worked with one of the businessmen, right where we were yesterday, who wasn't there (Good morning, how are you, how are you, greetings, doc), one of the people who was there, on a small dock, started welcoming divers. So that wasn't known, the fishing for queen conch (Strombus gigas) wasn't known and he started it, and he was one of the people who started promoting that, and from then on, from '84 onwards, the fishing for queen conch (Strombus gigas) and other species, by divers, exploded. I mean, it got to the point that most of the catches in Puerto Rico are by divers at this point, so well, that was another event there too, that I was able to observe.

-It's a change. I always wondered, why did the queen conch (Strombus gigas) suddenly become so valuable on the market?

-Yes, in restaurants and all that. It wasn't just a thing; somehow, restaurants started promoting it. And then the fishermen who preferred to go fishing back then, instead of taking boats for five days, went diving, especially the young ones. There were a lot of young people, right? Diving appeals to people too; it's an adventure and all that. And they started fishing for these species and others.

-The anglers I've spoken to this week told me they're seeing a rise in young anglers who want to dive and fish more, but it doesn't seem like it's something new and necessary…

-No, he's coming, there's a whole bunch of young people who have come.

[00:21:02]

-So, is that a new wave?

-No, the young people have been replacing them, because they don't want any other way to fish. Give me a second.

-Sure, sure.

(...)

[00:22:15]

-Sorry.

-No, that's fine. Let's talk a little about the changes you've noticed. In your perspective, have Puerto Rico's fishing communities changed in the last two or three decades, or since the 1980s?

-Yes, the communities have been undergoing a major transformation since the 1950s, since 1950, because the government here embarked on a process of industrialization. Industrialization in Puerto Rico began recruiting women in factories. Okay, so they took women out of their homes, because women were working from the domestic unit, from their homes, in various things, helping with fishing, helping with the reproduction of the domestic unit, to use anthropological concepts, helping, for example, the fishermen with the nets, helping with that, helping with the traps, all that kind of thing. And so, in addition to doing all those things, they worked in what was called the needle industry here, which is the garment industry, with gloves, putting pieces together, which was piecework. So, what happens? When I started working with fishermen, I worked as a child in the garment industry, because my mother sat down with the packages of materials that needed to be sewn, and everyone in the house helped with the process. Industrialization takes women out of that, and so, well, there's a problem because men are left alone and have to make the necessary adjustments. And well, that was one of the first changes that happened here. So, the government was determined to modernize the industry, use engines, change the boats, and all that kind of thing, go out and fish more, and all that kind of thing.

[00:24:51]

So, the sugarcane industry began to collapse. In the 1950s and 1960s, the sugarcane industry collapsed. The government subsidized the few remaining sugar mills, giving them money to maintain them, but basically, the sugarcane industry was going downhill. That meant that many fishermen who cut sugarcane no longer had that; they had to dedicate themselves a little more to fishing and other activities. So, well, fishing has always been like this, right? Fishermen have been people who have moved through different work environments, and the same thing happens in New England, the same thing happens in other parts of the United States, and in other countries around the world. And those are some of the changes, more or less, in addition to the technical changes that have occurred, well, the issue of traps, switching to fishing lines, the advent of GPS—that's a technology that changed a lot of things.

-In the book you mentioned, with David Griffith, Workers at Sea, if I remember correctly, one of the main themes is that fishermen are fishing but also having other jobs, and that's by sessions, out of necessity, depending. Is that something that happens today?

-That's a good question. It doesn't happen as much anymore. It doesn't happen as much because the number of fishermen has decreased, but they always have some other activity related to fishing. There are a lot of retired people, too, a lot of retired people, people who come with Social Security to work in fishing, you know, to supplement that, but yes, there hasn't been a recent study on that.

-Hasn't it been done?

-No, I think it's an interesting area to explore. What are the fishermen doing now? Are they fishing and doing other things?

-That's the word: chiripeando, yes I remember.

-Yeah, so, but I wouldn't know... The interviews I've done, the few I've done recently, people are focused on their tasks, because, what happens? If you're a diver, you don't have much time to do other things, you know, you go, you dive and you have to recover energy for the next 2 days to go.

[00:28:02]

And I think what happens is that women and children supplement the household income. They also receive PAN, SNAP, and all that. There are other ways, at least until the last few days when it was introduced, but there were ways to basically survive the economic conditions.

-I mean, having the money in another way.

-Exactly, exactly.

-Complement. And she mentioned the change that happened with industrialization, with women entering paid work, and how that evolved to this day. I spoke with Jannette yesterday, and she mentioned that yes, women are still involved in one way or another in helping the fish business.

-Yes, ah, definitely… It's happened that in Puerto Rico, those of us who have studied fishing have been men, OK. And so we've had tunnel vision about that, but the times we've looked outside, we've found women participating. We did a study here, about 20 years ago, on trammel nets, and mallorquines, and there we found a lot of women working, weaving nets and all that kind of thing. So, in oral history interviews, we've realized that women have a certain financial wisdom and so they even own boats and work. Interestingly, I was talking to some fishermen from here, near Añasco, who took their daughters out fishing, and their daughters were fishing. So it's possible that there's a new wave of women fishing and working in fishing, but they've always been fishers. I mean, women, what happens is that, since it's a fundamentally male profession, well, women have tended to have other perspectives. I was doing a quick little study, very quick, of a community to the north called Palo Seco, I don't know if you know it, Palo Seco is, do you know where Bacardi is?

[00:31:07]

-No, Bacardi? No, I'm not there yet, another trip.

Don't get me wrong, but all the tourists go to the Bacardi plant because they do rum tastings. It's a cool place. Well, next door is Palo Seco. Palo Seco was a—I won't go into the details, but it was a very important community in the 18th and 19th centuries, very important. There were fishing operations, corrals, people moving merchandise across rivers, taking it to San Juan in canoes, in dugout canoes, pirogues, that sort of thing. So, I examined the 1920 census and began to look at what people in Palo Seco did, and I found something I'd never seen in the data. And women appeared as what women did for a living: they were dedicated to sewing trammel nets, in 1920. Which means there's a world out there that we haven't explored historiographically, about women's participation in fishing activities, both in financial management, in sales, in fish processing, in all of that. I mean, I've collected some things like that, right? But we need people to come and start working on those particular things. For example, in Puerto Real, I had been told that one of the people buying fish was a woman. By the way, in other parts of the Caribbean, that's natural; women are the ones who buy fish and are the hagglers and all that kind of thing. So, yesterday I asked, when I was there, 'Oh, they told me that Gerardo's daughter is the one who buys fish,' and the person said to me, 'No, it's his granddaughter.' So I thought: the grandmother was the one who ran the business, the daughter took over, and now the granddaughter is the one who runs the business. In other words, there's a tradition there, a generation of women, running the thriving fish-selling business. So that's something that deserves people to start studying and looking at it more closely because, well...

[00:34:22]

-Since we're talking about women in the fishing industry, one thing I noticed when I was visiting Vieques—well, not that I noticed—I was in an interview that amazed me. I was talking to a woman, her name is Erika, and she was very modest, but at the end of the interview, I said, "It seems like you're a leader in your community." She was telling me how, after Hurricane Maria, the island's leadership completely collapsed; no one was doing anything. So, she said, "I'm going to gather all the women, put them to work, help the community, things like that," she was telling me. And when I returned from that trip, I heard from other people studying in Barbados or the United States who had heard similar stories. I don't know if you've heard anything like that. I mean, women come to deal with things that fail after such a major disaster. That story hasn't been repeated in Puerto Rico yet, as far as I know, since my interview. But I don't know if you've heard anything like that, or seen anything like that.

I have some colleagues here who have worked with women over time. I've learned something from them, and I've also collaborated with women in research and community work. In the field of conservation, and my conclusion—which isn't my conclusion—is what I've learned from these women; it's that without women, this doesn't work. You know, what happens? Men work on various things. Women may have a little more time—it pains me to say it—a little more additional time, or basically, the burden of working in the communities falls on them. It's the women who go to the assemblies, it's the women who go to the meetings, it's the women who take the lead in conservation.

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It's the women who, sometimes, are more educated than men in many communities, who have the critical discourse to deal with a lot of situations, and then they speak to the men, and the men work behind the scenes. So, if things have moved here in this country, it's because of the women, and that happens in all communities. In some, well, the men appear as, but behind those men, there are women who are, I mean, I've observed that the women here are the ones who go to assemblies, who read things, who interpret, who bring information, summarize information. And there have also been efforts by NGOs to empower women in that field. I mean, it's an organic thing, but it's also something that has emerged through the efforts of NGOs.

-A bit sustained, maybe. You mentioned the conservation movement, and I wanted to ask if there are conflicts, or how fishermen view the movement to conserve the marine environment, for example?

They see it very well. They consider themselves the custodians, the executors of those resources, and they're there to defend them. That said, what happens? They understand that federal and state agencies meet with them, ask them questions about their solutions, but then the solutions come from the scientific community, right, with prepackaged models about how fisheries should be managed according to all these curves and all these things. And so, some of the solutions they have aren't considered... So that puts them in a difficult situation. And it's very difficult for them to manage the issue of fish closures. For me, first, if someone asks me about closures, I say: I don't know, I have to go to some charts. I think managing closures requires artificial intelligence, because it's quite complex.

[00:40:01]

And when you look at them, it basically leaves many fishermen without options to fish. So the permits for highly migratory species and all that kind of thing, all of that imposes a huge burden on them, and many of them aren't willing to accept it, because many of them, especially the older ones, don't have the capacity to deal with those things, and I understand them. And the government made decisions for fishing licenses that are a failure, but they made decisions for fishing licenses that say 'full-time fisherman.' Damn! In Puerto Rico, there haven't been full-time fishermen, and there aren't in other parts of the world: historically, fishermen work in other jobs to support themselves, because fishing is a cyclical activity. So, that's when they started putting a tremendous burden on the people. Many fishermen have adapted, but the number of officially recognized fishermen has fallen. What does that mean? There are a lot of people who are outside the official statistics and are fishing on their own and, you know: if they catch me, you know, well, I'm lucky enough to get arrested and since there's no law enforcement here, you know, there's no surveillance here, then all those people are fishing illegally, and I understand them, I understand them deeply.

-When did that change happen?

-That change happened about 15 years ago, I think, 10 or 15 years. Don't ask me too much, because I'm erasing tape.

-More or less, more or less. That information can certainly be found out, but only…

-Yes, when the fishing law came into force, which is basically the regulation of who should be a fisherman, there are the documents, and they were told: look, you know, that goes against, that's almost unnatural, that goes against the nature of what fishermen are. But you know, those who are making the decisions are technicians who: number 1, don't understand the process; number 2, they have a very serious problem, and that is that they don't read Social Sciences. I have it written in a paper, I'll give it to you soon, they don't read Social Sciences and therefore don't understand what's going on nor are they interested. My dearest friend, Daniel Matos, do you know him?

[00:43:09]

-No.

-Daniel Matos Caraballo is the one who collects the statistics, he's the person in charge of them, a wonderful person. The work he does is wonderful, because the fishermen say whatever they want, right? But he doesn't read anything about the Social Sciences. I've never seen him quoting anyone from the Social Sciences. He didn't cite me, nor does he cite other people. Let's forget about me, there are other people. So no, that's my prejudice, my bias with these people.

-I understand very well. It's a question about how we make the culture of fisheries management in general in the United States or in Puerto Rico take into greater consideration what the fisherman does. It's a goal we have, but, well.

I think the answer lies in how the Fisheries Councils are structured. They're good people, they're all my friends. I owe them a lot. I've learned a lot from them. I think they've learned a little from me. But the way the council packages things and the whole process gives greater weight to some very important data. You know, technical fishery assessments are very important. But you have to balance that with other things, right? With other things. They say, 'Oh, well, the fish decline in Puerto Rico is due to these reasons and those,' and you say, 'But where do you calculate the fact that the estuaries have been destroyed, that coastal habitats have been destroyed in the last 100, 200 years?' You know? That wasn't done by fishermen, it was done by an agricultural regime that devastated and an urban development regime that devastated a large amount of coastal habitat. Where do you factor that in? Where do you use that information to get a more accurate picture of that?

[00:46:08]

So they complained that there was a collapse in the catches of Lutjanus vivanus and Etelis oculatus, which fell dramatically, especially since the 1980s and 1990s, they were falling, declining. And the response is: well, the fishermen wiped out the snappers. Well, those snappers had been caught in other habitats in the Caribbean; it wasn't that they wiped them out here, that's another topic, but, well, they caught them, they captured them, that's a story they don't want to acknowledge.

-We talked a little about that, about the changes that are important for fishing in the maritime environment, which fishermen talk a little about. What do you know about how the maritime environment has changed in the last 20 years, or something like that?

-Well, I'm not the best person to talk about that, but there's a tremendous impact from marine recreation. I think that needs to be calculated. There's a lot of illegal coastal occupation. We saw it yesterday. That's a change. There's been systematic sediment deposition on the reefs, which have been measured down to the mesophotic reefs, for example, at La Parguera. Sediment deposition, according to the USCS, is present in the riverbeds, which have enough material to continue depositing sediment for the next 200 years. Construction permits and permits for area clearing in the watersheds continue to be issued. All of that material is going to fall on the reefs, and it's falling on them. Add to that climate change, global warming, which has devastated the reefs, coral diseases, and why not? There's also been overfishing. Fishermen are aware of that.

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They would like to work more with that, but they have to go out fishing, and regulations also suffocate them. In other words, there have been a whole series of changes, and things that we don't know, because we still don't know how ocean acidification is going to impact the calcareous material of shellfish. You know, that's coming from there too, but there is an impact. We did a study on La Parguera. I don't know if you've seen it, but it's a study on La Parguera, a socioecological analysis of La Parguera.

-What is La Parguera?

-La Parguera is a settlement in southern Puerto Rico.

-Platform?

-No, it’s a community.

-Oh, Parguera, I haven't visited her yet.

-It's a community where there are 70,000 environmental issues. Well, all of those things, there was a great effort here, here there's the Añasco River basin as well, sedimentation problems, that is, due to agriculture, development, etc. All of those things contribute to habitats beginning to deteriorate and with them biodiversity, and with them a collapse in species richness, you know, so, I think those are some factors. But what happens? The Fisheries Council doesn't consider that, because the Fisheries Council considers catches, how catches and sizes are going, and with that they calculate the species' reproductive capacity, and from there then, I say, this is a synthesis, as I see it, but from there they calculate that, but I think the situation is highly complex, that there are nonlinear processes, we humans are involved in that, and that requires thinking differently.

[00:51:55]

Fishermen, like you, tell me above all about the challenges and pressures we have right now, the regulations, pollution, development, tourism, all of this. However, it seems to me, I'm not sure yet, that there's optimism about the future of fishing in Puerto Rico. And this optimism comes from the fact that fishermen believe that fish are very important to Puerto Ricans, especially local fish, and it also seems to have to do with the fact that they must continue to struggle, no matter what, with the difficulties. I mean, how do you see that? It seems to me that there's a bit of a disconnect, between the things that are very difficult—climate change, all of that are very difficult things—the regulations, all of that—and the fact that they remain optimistic, it seems. I'm not sure, but from what I saw.

-I don't know if it's optimism or a capacity for resistance or whatever we might call it, the Bad Bunny approach, you know? They keep going because fishing is part of the identity of the coast, I mean, they resist being eliminated and all the forces are there to eliminate them, but they resist that and they resist it through fishing, through local distribution, things that we don't see, they capture some species that they distribute around here among the family, they eat them and all that kind of thing. One thing that Jannette has studied and hasn't wanted to publish, but she has compiled a ton of data on it, you know, because it's not all about chillo (silk snapper) and cartucho (queen snapper) and carrucho (queen conch, \*Strombus gigas\*) (queen conch) and langosta (spiny lobster, \*Panulirus argus\*) (spiny lobster), you know, there are a lot of species. So they still have and they also have extensive knowledge of the habitat and the fish. We've done studies in that direction, so I think it's part of their resistance to change and transformation, to continue emphasizing a way of life they believe should continue.

-Are there cultural traditions that persist, such as fishing traditions?

[00:54:52]

-Yes, definitely, the Virgin of Carmen. That's an activity that's spread throughout the island, in many places. La Parguera is different because the saint is Saint Peter, but well, and in other places it's Saint Peter. But in most places it's the Virgin of Carmen, which is a Catholic tradition, and people ignore the Catholic aspect, because it's basically an activity where people praise the culture of fishing and basically emphasize that. So, I think it's a cultural tradition that's becoming stronger and stronger because I think people continue to resist it.

-Interesting, is it a tradition that is growing stronger?

-It's getting stronger. It's greatly strengthened. Yes.

-How did you notice that? Are there a lot more people or…?

-Yes, more people, I've done fieldwork, I've informally interviewed people, we've documented...

(...)

[00:56:44]

-OK. I have at least two important questions. We're talking about the fishermen's resistance. Is it an individual resistance, right, and also a collective one?

-It's collective.

-And also collective, with traditions, right?

-And the fishermen's associations and all that.

-We don't talk about it much, but what don't we understand about the resilience of fishermen and fishing communities?

-What do you mean, we don't understand?

-To better manage fisheries, for example, what doesn't the Fisheries Council or the Southeast Fisheries Science Center understand? What is the resistance and how can we address it?

[00:59:53]

-Well, because what is an ecosystem? Let's answer that question and we'll see that it's a 'bullshitting', as we say here in Puerto Rico, it's a 'bullshitting'. Because, where are humans in that analysis? Very far away, humans are very far away. So, there's very little ecological history, very little. People like Daniel Pauly have addressed that, with some success and with some gaps in the system, and all the people who have worked with Daniel Pauly have made a great effort with that, but more work is needed in that direction. What's this guy's name... Jeremy...?

-So, what you're saying is that the ecosystem approach is good, but the social aspect, the ecological and social history aspects together, have to be equally important...

-Yes. Well, the work Daniel Pauly has done also blends both, to a certain extent. I analyzed his work, and I'm not one to criticize Daniel Pauly—you know, he's in another dimension of reality—but yes, we need a little more work in that direction. That's my opinion.

-If we were to conduct an ecological, ecosystem study to advise the Council, what would be the most important aspect of Puerto Rico's fishing communities that they would need to consider?

-I think we need to have a holistic, socio-ecological view of the system. I think that's the most important thing, in my opinion. I'm pretty opinionated here.

-And one thing I forgot, before you left, there was a lot of support, supposedly, financial support after disasters like Hurricane Maria. What change did that bring about, if it brought about a change?

[01:02:51]

-Oh, I couldn't tell you, except that the money never appeared, the money never appeared for the fishermen. They're still in court because the Department of Natural Resources took them and wanted to use them and hasn't distributed them yet. There are some technical and bureaucratic difficulties, and they still haven't distributed funds to the fishermen, who lost a lot of money after the hurricane. The funds had been allocated, and there's about $7 million there. So, meanwhile, the fishermen carried out their own resistance and resilience activities to survive, and they've survived. In some places, they haven't been able to survive, because that's what happens with natural events. And governments aren't prepared; no one is prepared for extreme events, you know? We want the next day to have electricity and that kind of thing, and for things to work. No one is prepared for extreme events; people in North Carolina aren't either, people in Florida aren't either, people in the Netherlands aren't either. You know, extreme events, and now that they're more extreme, are going to wipe us out if we continue occupying nature's spaces the way we're doing. Well, that's nature, the beast, we continue to reproduce and continue, I have here, we wrote a treatise on the subject, I'm going to give it to you, it's called Connecting Humans and Ecosystems in Tropical Fisheries: Social Sciences and Ecosystem-Based Fisheries Management in Puerto Rico and the Caribbean.

I've heard the title before, I'll definitely have to read it. Thank you very much. Well, thank you very much for taking the time. It was a pleasure to learn from you.

-No, thanks for the interview. The dialogue also helps, to say, well, you know, there are things I haven't thought about, there are things I should think about, there are things that... But, I'm running out of time now. I'm waiting for other people to come, other scientists.

-Are there people interested in these topics?

-Yes, Carlos Quijano is one, Miguel Del Pozo. Carlos Quijano was my student too.

-I met Carlos Quijano and he does a lot of work with traditional fishermen's knowledge.