Key Informant Interview 18 USVI

Date:

Stakeholder Group: Research

Years of Experience in Occupation/Field:

Community/Area/Location: St

Speaker 1: All right. Excellent. Could you talk a little bit about your involvement with USVI Fisheries?

Speaker 2:: Yeah. [...] I'm a coral reef ecologist. [...] My major research focus, I'm so sorry, are coral ecology at large. I'm the coordinator for the territorial coral reef monitoring program. So we have 34 sites around the territory. We look at fisheries, we have visual surveys of fisheries, we protect coral heal and we look at color and take digital measurements. It also is a massive coral reef monitoring program, which is a more randomized sampling strategy, spatially stratified random across the seascape, which also involves reef visual census. So I get a lot of, in terms of the background of the environment and of a biological environment from those programs. And that's one of my major involvements over time has been. [...] Yeah, so I'm familiar with the Caribbean fisheries issues as well. From that.

Speaker 1: So, excellent. So how would you describe the ... the Virgin Island's coastal communities dependence on fisheries? Would you say that they are highly dependent on fisheries? Why or why not?

Speaker 2:: I would say moderately. The fishery, from what I've heard, is worth about $4.5 million. There are about 600 registered fishermen across the territory. And that can have knock on effects in the economics. So if you think of 1,000 people, let's say, or 2,000 people that might be directly involved in fishing, then ... out of a territory of 110,000, so it's roughly one percent to two percent of livelihoods might be involved in that. So I guess I would call it moderate for the territory. I think culturally it's important. And maybe you have a question about that later, I can wait on that. But yeah, in terms of economics I think it is moderate influence.

Speaker 1: Okay. What about the fishermen who are involved in fisheries in the USVI? How dependent would you say, or how would you describe their dependency on fisheries for their livelihood?

Speaker 2:: From what I know that most are quite dependent, although a lot of people who are registered do it part time. So they have other jobs and they do this on the side at various times. They're not going out all the time. So it's supplemental to an established income. I think culturally it's very important. I think certain communities, there's a French related community here, I'm not sure if you're familiar with. And in St. Croix, a more Puerto Rican/Viequean expat community that are highly related to the fishing aspects. So they're much more mariner people that are doing a lot of the fishing. So culturally, a lot of their culture's tied into that. Especially people on St. Thomas on the north side, French community, the French related community identifies strongly with fishing and being fishermen, certainly. I think for them the more ... The West Indian community that's more driven by slave background, they have less direct involvement with the fishery because they've just never been as associated with the water. But they're very dependent culturally on fish, and eating fish. People eat fish quite frequently. Even in a place like St. Thomas, and St. John, which hyperendemic Ciguatera fish poisoning, people continue to eat fish and demand it. Local fish. Because they have ... It's culturally important to them as a food source, I think, and they grew up with it and that's what they really want.

Speaker 1: And how would you describe costal communities, Virgin Island's costal communities dependence on coral reefs? Would you say they're highly dependent on the coral reefs? Why and why not?

Speaker 2:: I think they're highly dependent because it's evolved such to bring in tourism. So in terms of aesthetics of the coral reefs, for the maintenance of beaches and beach sand. So it's an indirect causation there. And maintenance of water quality, going in to help with water quality. So I think those aspects are probably highly important but under valued, because they're not seen as apparent. And then also costal protection, it can be important attribute of coral reefs. Especially in terms of northeast side of St. Croix, there's a barrier reef that ... And even other areas where there's fringing reefs that help buffer wave impacts during storms. That's very, very, quite important. So I think they're even ... more important than the fishery itself is ... the coral reefs are, I think are more valuable than the fishery itself. And then of course the coral reefs are important to the fishery. To maintain that fishery as well.

Speaker 3: So what do you think are some of the major problems that are facing the fisheries in the US Virgin Islands?

Speaker 2:: I think in terms of external problems, climate change, global warming, and resegregation is a big one. There's a strong linkage between the health of coral reefs and the provision of fish, then there's going to be more and more serious problems because of coral bleaching from coral thermal stress. We're seeing your annual hatching into the coral thermal stress thresholds on it now. We had a major bleaching event in 2005 where we lost about half our shallow water coral cover in just that episode. We had another major one in 2010, which wasn't quite as severe in terms of impact. And one in last year, 2019, which was severe, but also not as much in terms of the coral cover loss. We're also suffering a lot from coral disease right now. There's this disease from Florida that's a coral tissue loss disease which somehow, probably from shipping, spread to St. Thomas, and now it's radiating outward along the coral ridging shelf. So it's reached Culebra in Puerto Rico. It'll eventually encircle Puerto Rico, and it will then spread eastward. And it's already just hit St. John, and it will envelope the ridge zones. And then probably, just because shipping is so frequent between St. Thomas, St. John, and St. Croix, it'll jump to St. Croix. And it's a devastating disease that's almost as bad or worse than the effects of the bleaching event. In terms of coral loss. And it kills corals completely. There's not a lot of partial mortality. Which in bleaching, there's a lot of partial mortality, so the coral genotypes survive. In this case the disease actually will kill an entire genotype of the corals. So any recovery has to come from complete [inaudible 00:11:17] reproductive cycle of the coral from somewhere else. So this is ... this is going on, and it's going to be quite devastating. So there's external impacts, and their effects on coral reefs have a big impact on the fisheries themselves. And I think, in my view, the lack of regulation and participation in regulation has a serious impact on the fishery. The fishery, it's a small multi use fishery. You can target 100 different species in the same trap design. And so there's a lot of by catch. And then in terms of spawning aggregations for some grouper and snapper, where they become highly vulnerable, the whole population can become vulnerable. There's a lot of that there. And there's been some ... In better water conditions and good protections for some of the known spawning aggregations, and that's having a really positive effect. But I believe that the ones that are open are still [inaudible 00:12:18]. And even with seasonal closures, there's poaching and things like that. So there is sort of a ... I think among some of the fishermen a disrespect for the laws because of lack of enforcement. They don't see themselves ... Unless they're ... It's mostly through peer pressure that they would be limited rather than actual enforcement around legal issues. So it's other fishermen saying, "You're being unfair. We're not fishing there right now because of the laws. You shouldn't be fishing there either." And so that's really one of the main ... Because I see that there's some limitation on some of the worst activities.

Speaker 3: Right. Right. So if you had to rank these different stressors that you mentioned, how would you rank them in order of importance?

Speaker 2:: I think ... I guess I should also mention lack of knowledge of fisheries populations is really important too. So setting management Magnuson-Stevens style restrictions is really difficult because we just don't know what the stock is in many of these cases. We're getting better through some fisheries dependent data series, but it's really hard to do it from a catch based system here. It's possible, but it gets more expensive than the fishery's worth. So it's a question of do you really want to spend that much effort. So it's really hard to know what the stocks are, and there's so many, and there's poor identification of species, say among fishermen, in terms of what you would need for a scientific analysis of a stock. So that can be difficult. So I should mention that too. So in ranking in order, I would say it's fishing itself, and not knowing the stocks, and not knowing if you're over exploiting them is the biggest threat. And then after that I would say it would be lack of [inaudible 00:14:21] regulation. And then third I would put chronic change in external stresses on coral reefs.

Speaker 3: Okay, so what would you say are the most significant changes that have occurred in the US Virgin Island Fisheries in the last couple of decades?

Speaker 2:: I'd say the degradation of reefs has been one of the largest changes. And it's probably very subtle, its effects on the fish since we don't have a good assessment of fish. Or, at least they're not very long term records. So there's then this degradation of reefs that's been occurring. We've lost, even since I've been here, there's been a massive decline in coral. [inaudible 00:15:13] occurred since the 1970s, so I think that's been a huge impact. I think that fewer people are consuming fish, so there may be a less demand for fish. So that's actually maybe having a positive impact on the fish population. And maybe for the remaining ... It might be damaging for the economics of fishers ... I don't know this for certain. This is just kind of my ... that's the anecdotal opinion of mine, I guess. And then one of the positive things that's happened is areas where there's been protections of spawning aggregations, we're seeing some of those populations rebound. For example, the marine conservation district southwest of St. Thomas and the Grammanik Bank south of St. Thomas have been really important in protecting both resident populations of groupers and snappers that are commercially important, but also spawning locations of spawning aggregations of red hind, Nassau grouper, Yellowfin Grouper, dog snapper, cubera snapper, mutton snapper, and it goes on and on. So the Grammanik Bank especially is a multi species spawning area, and it's really important ... It's just a standard closed area, but it's enough to protect ... The annual seasonal closures of those fisheries during spawning periods has been enough to really reverse some of the declines in those populations. And for example, the Nassau grouper is very low right now. It's still very much rebuilding stock. But from the Grammanik Bank, they've completely fished out ... There was a [inaudible 00:16:49] irrigation in the main conservation district where it was estimated by Olson and LeClasse back in, I think, 1978 or so, they estimated about 10,000 Nassau grouper on the aggregation. Which is massive. And back in 2005, there was a group of us studying the Yellowfin grouper spawning aggregation is make the group here at Center for Marine and Animal Studies. We started to notice that in this group of about 400 to 500 Yellowfin grouper, there was 30 Nassau grouper showing up that were grabbing and spawning with the Yellowfin. And since that period, since 2005 to now, the aggregation of Nassau is about up to 450 to 500 fish. And they're very large. And we're seeing a lot of recruitment of Nassau, juvenile Nassau near shore areas. And then you'll see the younger, and then you'll see the medium sized guys. And then you'll see the 20 centimeter, 25 centimeter guys starting to recruit into the spawning aggregation after the three years, after [inaudible 00:17:47] recruitment pulse. So we're seeing a fully life cycle, and I think it was really the protection of the spawning aggregation and the seasonal closures that allowed ... Well, actually Nassau is totally protected, so that's helped as well. But I know there's some poaching, but at least people not being able to inconspicuously fish on the aggregation during spawning periods has really helped. So that's a success. That's a positive benefit I think in the last couple decades.

Speaker 3: Great. Thank you. And what would you say are the most significant environmental changes that have occurred in the US Virgin Islands in the last couple of decades?

Speaker 2:: I think I touched on them. Things like man made sources of pollution has always been a problem. I think they're fairly consistent in terms of there's new building, and there's new roads cut, and there's runoff and that impacts coral reefs and probably fisheries. It's not the level of the problem in Puerto Rico, but it is a known problem. But I think that's been fairly stable. I believe it's really the novel ... There's a lot of coral diseases and coral bleaching that have had the biggest environmental impacts in this period. But I don't think it's a lot of local water quality stuff. I think it's more global issues that are the biggest drivers.

Speaker 3: And have you observed any changes in the fisheries or the environment that you think can be attributed to changes in the local climate?

Speaker 2:: I think coral bleaching would be an example. Where we're getting more of these hot spots that occur during the warmest part of the year. That pushes corals above their bleaching thresholds and causes them to bleach. And then if they don't recover quickly enough, then they start to have central mortality. So I think that just more the ocean climate has been one of the biggest things. And just, we know that we're committed to at least 40 more years of warming. 20 or 40 years of warming, even if we stopped emitting now. So we know that the impacts are even going to increase, even if we got control of human emissions, carbon and other greenhouse gasses. Carbon dioxide.

Speaker 1: So Speaker 2:, would you say in your opinion that USVI fishers are concerned about climate change?

Speaker 2:: I don't know. I think some of them have seen changes with bleaching, they've seen the bleaching. But I'm not sure if there's a strong connection between that and global warming, per se. So I don't think there necessarily is. I think also it's inhibited because there's been an antagonism between people with more of an environmental bent, either through NGOs or the government, and fishermen, in terms of restricting their right to fish. So I think there's a general antipathy

towards any sort of environmental explanation for change, in a way. Unless it's man made sources ... They want to blame most things on man made sources of pollution. Like this change in the fishery, it wasn't because we caught fish, it's because the water got more polluted and the fish went away. Which I don't find compelling at all, but that is an explanation that a lot of fishermen will do. So I get the sense that there's not a lot of concern about global warming. But I think there could be, and I think there's lots of programs that are going on now in the Virgin Islands that are helping to change that. Both through reaching the youth, and to outreach to adults as well. You know, and other things also, things like the storms I think are changing minds. We had the double strike of hurricanes, Irma and Maria in 2017. And so that ... I think that was unusual. Highly unusual. And I think people are now more willing to accept that there might be external climate drivers causing some of these storms, and there's concern about what's going to happen in the future.

Speaker 1: So you mentioned that you don't find the pollution argument compelling. I'm just curious, are there research that looked into this question? Or is it just something that just from your personal perspective?

Speaker 2:: Well, I've done a lot of work with water quality and its affect on coral reefs. Less directly on fish, so my fish stuff is more observational. But then I was in the harbor around the cruise ship dock where the water is some of the most polluted in the territory. Which is nothing compared to Puerto Rico, but it's more polluted in the territory. It's kind of a de facto marine reserve because people can't really fish around that area. And you'll see Nassau grouper, you'll see Yellowfin grouper, and you'll see all these important species that are in these polluted areas that if the pollution was driving them away they wouldn't be there. But they're actually there because they're not being fished there. If you go to other areas that are relatively clean and that have nice reefs, you won't find those species often in high abundance because they're being spear fished and hand caught and so fort.

Speaker 1: Now, so I asked you if the fishers were concerned about climate change, what about, again in your opinion, fishery managers, researchers, decision makers, are they concerned about climate change in the USVI?

Speaker 2:: Yes, I believe so. I believe there's ... I don't know across the board, but I think most of the people I deal with are concerned about it. And they're certainly doing research to investigate it. So yeah, there's been a lot of focus.

Speaker 1: Okay. And how would you describe the relationship between members of the coastal communities in the areas where you live and work?

Speaker 2:: I think ... they're cohesive in groups, which are hard to identify. Like I mentioned the French related community, there's more of a West Indian related community. And then there's subdivision among that because there's a lot of documented and undocumented immigrants in the territory as well. So they form their own smaller separate communities. So there's, in the groups there's cohesion, but out between the groups there's not a lot of cohesion, I think.

Speaker 1: And how would you describe the relationship between fishermen in the USVI specifically?

Speaker 2:: I think they're not extremely cohesive. I mean, there are fisheries associations, but I don't think they're very well ... They go and they do stuff because they have to be at the table, but I don't think there's all the fishermen ... Yeah, I think I was saying that a lot of the fishermen I think are lone wolf, in a way. They keep to themselves, they have their own boat, it's a single vessel. They sell directly to the customers, there's no middle men. So there's not ... They're kind of just independent actors, really, and I don't think there's a lot of cohesion. And I think if the fishery management councils under Magnuson-Stevens didn't suggest strongly that the fishermen have their own council that they would really do that organically. It's really something that was popped out and created, I believe.

Speaker 1: Okay. And just along the same lines, can you think of any examples of fishermen in the USVI getting together to address an issue? Something that was significant?

Speaker 2:: I think in general with the community there's been ... When there's environmental issues sometimes they'll come together. Like a development or something like that. For example, I think there was opposition among fishermen to a development in Mandal Bay, here in St. Thomas. Any time there's encroachment on areas where they get bait fish near shore there seems to be pushback. Those are the major ones. And they get together if threatened by regulations. Then they pull together to resist. Yeah. Or at least have a role in creating it.

Speaker 1: And do ... To the best of your knowledge, do fishers in the USVI get together socially?

Speaker 2:: I think so, but not as a large group. Probably independently. There's bars and watering holes. People get together and have drinks, yeah. But I think it's very regionalized. If you're from the north side of St. Thomas, yeah, you know. If you're from Frenchtown St. Thomas, yes. I know a little less about St. Croix, but yeah.

Speaker 1: And how would you describe the relationship between the fishermen and the fishery managers in the USVI?

Speaker 2:: I think it's ... For the locals, yes. For example, the Department of Planning and Natural Resources, Fish and Wildlife, it depends on who the director is. For example, the last one was Gomez, and I think the fishermen really liked her. She was really a big advocate for the fishermen. And now the person who's the director is more of the trust and wildlife background, and so I don't think she gets along with the fishermen very well. Because she doesn't understand their issues and she's not an advocate for them. So in terms of the local managers, I think it should really ... It flips back and forth depending on who's the director. So with the Fishery Management Council I think it's pretty antagonistic. They do not like federal oversight of their fishery and their shelf, what they consider their waters. So yeah. I think it's pretty antagonistic.

Speaker 1: And can you think of any examples, and I mean, you touched upon that perhaps with the previous director, but can you think of any specific examples of fishermen and fishery managers getting together to address an issue in a positive way?

Speaker 2:: I think locally, there's the fishing aggregation devices I think can be popular for people that do offshore trolling. I think coming up with studies that involve parts of NOAA and the local Fish and Wildlife with fishermen have been somewhat popular. For example, trap design studies and escape panels. Trying to show the affects of derelict traps on the fish and the fisheries. So I think when they participate in the research, it can be more popular. At least among those who participate. Maybe just because they're getting compensated, but hopefully also because they're contributing to something. Knowledge, or at least proving that it's not as detrimental, hopefully, as they argue. So I think that can be a positive coming together. There was one more I was thinking of. Now it escaped my head. Maybe I'll remember. Sorry.

Speaker 3: [inaudible 00:31:52] have? So Speaker 2:, do you feel that fishery management in the US Virgin Islands is fair in the decisions they make?

Speaker 2:: I think so. Yeah. I think ... The goal is sustainability. So under that lens, as long as it's being done with input and the best scientifically available advice, I think it's fair. They may feel ... fishermen may feel it's unfair when they talk about fishing restrictions, which are really not ... there aren't that many relative to some areas within the northeast. But in the end, when it's improving the fishery, if it's improving the fishery, then I think it's justified. Yeah.

Speaker 3: Okay. Can you think of any specific examples?

Speaker 2:: Oh, okay, fair. Well, I think ... So I think overall to the fishermen, is it fair ... There's a good example with the marine conservation district, the Red Hind, the Hind Bank Marine Conservation District. Which is southwest of St. Thomas, where it's a very large area of 49 square kilometers that's a no take reserve. No anchoring. You can only troll over it, you cannot drop lines or actively fish in there with any other bottom tending gear. So I think that was ... The fishermen knew there was a problem with the Red Hind spawning bank. There were too many people there that were hauling in massive catches, and they knew it was declining. So they I guess organically asked for some restriction or oversight put on that. I think then at some point, at least according to the fishermen, it became from a small closed area around the spawning aggregation of Red Hind to this 49 square kilometer area, protecting both the Red Hind and these really phenomenal deep coral reef habitats around that spawning aggregation. I think they thought that was unfair and not well ... not well integrated with their opinions. It was mandated onto them without deference to their input. So I think in that case it's ... Maybe it was unfair from the fishermen's perspective, but in the end this area is protecting these really big spawning aggregations. Some of the biggest populations from a lot of our research we're seeing some of the biggest populations of these really important and rare commercially important species. And even some rare but ecologically important species. For example, midnight parrotfish and rainbow parrotfish, which have become extremely uncommon, even though they're really large parrotfish species which are ... could have a very large impact on limiting algal abundance on reefs and thereby protecting reefs from other competition. You see them very rarely still in these closed areas, but it's one of the two places you will see them, because they've been so over exploited in the territory. But yeah, so it's a balance. From my perspective, yeah, it wasn't fair it was taken away from you guys, maybe give you guys input, but if you would see the benefits that it's giving the territory now that it's been closed 20 years, then hopefully we can convince you to change your mind. So we actually just completed the study of inside outside and take from 10 years, for over a 10 year time span. We're still working that up, but that might be helpful. Something that'll help convince them. Or not, if the data doesn't show it. I mean ...

Speaker 3: Right. You never know. So I know you talked a little bit about the fisher's perceptions between the local and federal government, but I'm going to ask that same question about fishery management in the US Virgin Islands. If they're fair in the decisions they make. Do you think there is a distinction between the local and federal government?

Speaker 2:: Yeah, I think there's a lot more deference to the fishermen in the local government. There's definitely politicians, senators, governors, that are much more inclined to support the fishing because they're important [inaudible 00:36:39]. So I think in some ways back to the question of do they get together, I think politically they do get together and there are people that get ... politicians who actively talk to the fishermen about their issues and try and protect the fishermen's issues as a pet platform. And they get political leverage from that. So I think there's a lot more emphasis locally put on assisting the fishermen, potentially at the expense of environmental concerns, but it's a political deference. With the managers, it depends again who is the director, but in that case it's more of ... Less maybe a political deference as they actually do agree with the fishing community. They want the fishing community to thrive. They resist regulation.

Speaker 3: Yeah. So do you think the decisions that are made at the federal level are viewed as being fair? Speaker 2:: No. Not really.

Speaker 3: Okay. Okay. Do you want to share an example about that? Or just overall

Speaker 2:: Well, I think the marine conservation is an example, was one. But it just seems any time something new is proposed, it's just resisted for the most part. The only time it's not is if it's just a benefit to a very small number of fishermen, potentially at the expense of other fishermen. Like the ... I guess this a local one, but the ban in pursing nets, or trammel nets, which they were using, especially to herd parrotfish across a reef into a channel where they would trap all the parrotfish. There was a few people doing it. I think there it wasn't as popular, maybe just because there wasn't enough people to fight against it, or there was lack of [inaudible 00:38:58] rather than the fishermen saying, "We don't like this." But it seemed like that got through, at least locally. So that's not federal, but ...

Speaker 3: Okay. Okay. And do you think that most fishers in the US Virgin Islands understand how fishery managers make these decisions?

Speaker 2:: No. I don't think they do. I don't think ... they have a strong understanding of how the decisions are made. Even though I think it's fairly transparent, but no one takes the time to look at that. I think it's just resistance because it's change.

Speaker 3: Right. Okay. And then if they exist, how are conflicts between fishers and between fishers and fishery managers resolved? So how do fishers and fishers resolve conflicts, if they exist?

Speaker 2:: I think fishers and fishers probably within their council. Probably with their fisher's associations. I believe. And I believe it's just talking. I don't think there's formal agreements on anything usually, but it's just sort of an agreement between people that they will do this. I'm not sure of any specific examples. And in terms of federal government, it would be more on the, based on the council's ... through the council meetings. Through the opportunity for public comments.