02/26/2024

BD051

**Interviewer 1:** To start, how many years have you been recreational fishing?

**BD051:** Um, I would say - well, I started young. I didn’t really get good at it until about college. So what is that… about halfway through college I really got into it. In 2015 ish. But, I’ve been fishing since I was younger down in South Carolina from my neighborhood dock. And my grandfather and my uncle used to go out with friends of theirs and they’d take me along on their boat. But I didn’t really go, really try myself until I got into college, and that’s when I really got into it.

**Interviewer 1:** Gotcha. And, are there any - these are just some background questions to get started. Are there any other marine recreational activities that you participate in in the Chesapeake Bay?

**BD051:** Oh, well I usually - yeah, I go kayaking a lot. And I usually do a lot of my fishing from my kayak. That’s pretty much it. I also, you know, go to the beach. Like I also hike around national parks and stuff like that.

**Interviewer 1:** Ok. And then, do any of the following - are you involved in any of the following? So I know environmental group, already, yes. Given your area of employment.

**BD051:** Yes.

**Interviewer 1:** But are you involved at all, either through your work or as a fisherman and as a community member, in fisheries management, local government, marine resource management, anything like that?

**BD051:** Um, no. Not currently, no. When I was, you know, after I did my masters degree, I did present at a blue catfish invasive species meeting in Virginia. That was, like, 2019? That was a long time ago. I haven’t done much since. Basically, shortly after that I got employed with Maryland DNR.

**Interviewer 1:** Gotcha. Ok cool. And then, I know your area of employment so I don’t need to ask that. Ok, great! Cool. So, for this project we are using a tool called mental modeler. Have you ever heard of that? Are you familiar with that at all?

**BD051:** No. I don’t know what that is, no.

**Interviewer 1:** So it’s a social science tool that we use. We say that we use it to build a conceptual model of how an individual sees a system that they live in. So, we can use it to conceptualize how an individual values or perceives components of their social-ecological system, or we can use it when we’re talking with scientists or experts for areas where there might be high uncertainty in a more qualitative way. And so, what we do is we go through a series of questions in an interview like this and we build out a list of system components, and then we can assess how those components are related to one another. So, if one component was to increase, would that positively or negatively affect the other components in the system. So it’s a way to conceptualize socio-ecological system dynamics based on your given research question. So what I’m hoping to do today, if that sounds good to you, is actually build a mental model with you based on your experience in the Chesapeake Bay fishing and how that relates to local biodiversity. So, I am going to share my screen. Can you see my screen if I share it? Will that work for you?

**BD051:** Yeah! Yeah, I can see it. Sorry I don’t have my camera on, because I usually - like right now, I work on two computers and yeah. If I have it on my computers just crash.

**Interviewer 1:** I totally get it. I was going to tell you before we started, because my computer the fan is going right now. You know that happens when you have too many things open. So, I’m also hoping that my computer doesn’t crash. We’ll see. Ok. Can you see that screen?

**BD051:** Yeah.

**Interviewer 1:** Ok, cool. So, this is a software called mental modeler that we use to draw these models when we’re talking to folks. So I’ll go through some questions with you and I’ll add in components, I’ll populate in components based on your responses. But I’ll kind of go back and forth with you or you can pause and stop me if I’m not, you know, representing your thoughts as a concept if we need to change anything, or remove anything, or anything like that. So we’ll just - it’ll be an interpretive process as we go between the two of us as we build this visualization. Ok, so to start, what specific aspects of biodiversity in the Chesapeake Bay affect you either positively or negatively when you’re recreational fishing.

**BD051:** Um… aspects of biodiversity. Well, with biodiversity I find I have a better chance of catching the fish I’m usually targeting. Yeah, definitely.

**Interviewer 1:** Ok. So I’ll just put biodiversity as a concept itself. Are there specific species or habitats in the bay that affect you? Or that are important to you? Either positively or negatively when you’re fishing.

**BD051:** Yeah! So I fish for a variety of species. The main ones I fish for are striped bass, snakehead, and blue catfish. And so striped bass, I fish locally here. Usually near my parents in the Patapsco. Also, when I can, in the Savern and Magabee if I happen to be in that area. Or I fish along the bay in southern Anne Arundel county as well. Yeah. And I, for striped bass, that’s pretty much it. For striped bass. And for snakehead, I usually go to blackwater national wildlife refuge. Mostly because one, it’s beautiful there, it’s very rich and diverse. Lots of biodiversity, just lots of natural habitat. And also, the snakeheads just have a - they’re an invasive species and there’s lots of them there. So, like, it’s really easy to catch them there. I like fishing for invasive species because, like, it makes me feel good about why I’m fishing for it. And also it’s, for the third species blue catfish, that’s what I did my thesis on. So I know a lot about it. For the blue catfish, usually I go to the Patuxent but sometimes the Potomac as well. I really like the Patuxent because it’s kind of close to me and also very pristine, lots of species there, lots of great habitat. Yeah. I don’t go blue catfishing as much as I want to, just because the drive there is kind of not as fast. Usually when I want to make a drive that long I go snakehead fishing.

**Interviewer 1:** Right, gotcha. Ok.

**BD051:** And I do a lot of fishing for other species too, I just don’t always get a chance. Like sometimes I go around to Ocean City and fish for flounder or red drum, but I don’t always have time for that.

**Interviewer 1:** Right, ok. I’ll add those in too. But I’ll put them down here. So you said with blue catfish in particular, you said there are specific locations you go to because of the habitat, are there specific types of habitat that affect you in terms of your fishing?

**BD051:** Yeah, well I try not to do degraded habitat. Sometimes that’s hard because, like for example the Patapsco where my parents live, I’ve got to say since I was a kid, it’s much healthier now but still, after a storm it’s just, you know, the hypoxia is just bad. The sediment runoff, yeah. Really I go there mostly because it’s a neighborhood dock so it’s easy to get there and no one’s going to bother me, and it’s the closest to where I live. I live in Odenton. So, that’s usually my quick trip in the fall and I know that striped bass are in the Patapsco. I know that striped bass are mainly hanging out in the Patapsco in the summer and fall. So I would go to the dock and launch from there and kayak.

**Interviewer 1:** Right. Ok.

**BD051:** Um, but. I try to not - I’m not always going there, especially not any time of year, because there’s… it’s just due to like, the habitat’s not the best. Yeah. It’s definitely not the best compared to some other locations. Like for example, where I go in Southern Anne Arundel County, when I’m actually on the main bay and there’s channels and grasses on that part of the bay that when the striped bass, when they are there, they really, the numbers are there. But also, that side is also limited by wind. My kayak’s only 10 foot, so. I basically have to have perfect conditions in that spot.

**Interviewer 1:** Gotcha, ok.

**BD051:** Yeah, if you’re looking for where I fish, a big part of it is, even though spots and how many fish there are and how great the habitat is, public access really affects my decision a lot.

**Interviewer 1:** Yeah.

**BD051:** Which is unfortunate. Like I think public access is very important, and I don’t know if you’ve interviewed with other recreational fishermen, but I would say public access is a huge factor of where I fish.

**Interviewer 1:** Ok.

**BD051:** And like when I fish. Because for some of these spots, I can only go - like for example snakehead fishing. I have to get there at like 4 in the morning, not only because fishing is good a sunrise, but it’s mainly just to make sure I get a parking spot. There’s really not that many parking spots at some of these public access locations so I really have to get there early to ensure that I can even park and then go fishing. Patuxent can sometimes be that way too. And actually Patuxent is harder because they open at like 9 and they close like an hour before sunset, which is not actually great for fishing. So like, when I’m trying to determine if I’m going to go blue catfish I kind of have to time it with the tide and within those two - within that time period. And sometimes I have to go early, like right when they open at 9, to make sure that the parking doesn’t fill up. Because if I go at like noon, you know, it might be better at noon but the parking will be gone.

**Interviewer 1:** Right, ok.

**BD051:** Yeah. So that really actually - public access might actually determine when I go in a day or depending on the time of year.

**Interviewer 1:** Gotcha. Ok. That’s good to know. So you mentioned flounder and red drum being further away, so do those impact whether you fish for them?

**BD051:** Yeah, so for red drum, flounder, sea trout, they’re definitely on the eastern shore. Like, ways out near Chrisfield. I’ve only fished that area once. And they’re on the eastern shore, and they’re also in, like, southern Maryland. Which I’ve fished a couple times, I haven’t been successful, but they’re down there. I just haven’t made it down there because it takes a little bit longer to get there compared to Blackwater.

**Interviewer 1:** Right. Ok.

**BD051:** I’m sure I could get better if I had the time to try it out more often, but I don’t get that many opportunities to fish, as you can imagine. Yeah.

**Interviewer 1:** Ok, cool.

**BD051:** For where I work, I work nine to six, and every other Friday I get off.

**Interviewer 1:** Oh, that’s nice.

**BD051:** Which helps me get more fishing. Yeah, it’s pretty great. But usually that Friday off, it’s usually bad weather or I’m busy doing other chores and stuff. And I do have to work nine to six every other week.

**Interviewer 1:** Right, right. Fair enough. That makes sense. That’s kind of a nice schedule though, I wouldn’t hate that.

**BD051:** Yeah, it’s a really good one. Because before, we really had to have - and I was already working until five thirty or six anyway, so it just… all of us were feeling drained. And our CEO was like, we gotta change our lifestyle. So he gave us that option, for those of us that want to do it, to work those types of hours.

**Interviewer 1:** Cool.

**BD051:** But I fish for founder, red drum, and sea trout whenever I go for vacation. Or when I lived in - when I went to school in coastal Carolina, South Carolina, and I did one year at the Marine Lab. So that’s mainly when I fished for that.

**Interviewer 1:** Gotcha. Ok, cool. So I’m going to add - and we can take some of these out, but I’m just adding some concepts as you talk. So travel time, I’ll add that too. Ok. And then, you started to touch on some of this. But how do - how do these components of biodiversity that we’ve been talking about, how do they affect you in terms of social or economic benefits?

**BD051:** Um, well one - the biodiversity in the area is good. But there’s probably more fish in that area and more chance for me to catch a fish. Which is great, because that’s what I want to do when I go out fishing. And like, actually bring home fish for my family. I mean, obviously I follow the rules and everything, but yeah. So that’s really great. And also… well, I think I touched everything.

**Interviewer 1:** Ok. Ok, cool. And then, are there certain local management approaches or policies that affect your fishing in the Chesapeake Bay?

**BD051:** Um, just regulations. Which I’m honestly - I’m honestly pretty happy with most regulations. Yeah. I’m trying to think of specific ones that actually affect me. Well one thing is I don’t always get, like, you have to get a license for tidal and freshwater. I don’t always get a freshwater license every year because I definitely do less freshwater fishing. Which is where I fish in, like, streams, non-tidal streams. I used to do that a lot, especially when I was in college and the first year of grad school, but ever since I moved away from North Carolina, South Carolina, I do a lot less of that. And I definitely do less of that here in Maryland. Just because, like I said, there’s not many - like, there are spots that you can go to, but most of those areas are pretty degraded or crowded. Yeah. And I just simply because - I used to go large mouth bass fishing a lot. Compared to North Carolina, South Carolina, the large mouth bass don’t get as big up here as they do down there. So I don’t really have an incentive to go out for large mouth bass fishing. I’d rather go out in my kayak in a river for snakehead fishing or blue catfish. Yeah. So that’s one thing. Because I wouldn’t be buying a license every year to do that. Otherwise, yeah, none of the regulations or anything like that really affect me. The only other policy might be where public access is and the times I can access it.

**Interviewer 1:** Right. So you were saying - if I heard you correctly, did you say that some of the public access sites have the more degraded habitat? Like, what is the relation between access and the quality of fishing sites?

**BD051:** Um… I don’t feel - it depends. I don’t really feel that that… a lot of fishermen have the opposite opinion to me with that. I don’t always think it’s, like, really correlated in that way. I usually think, because I understand that this is what I do for my job, it’s really development and where development is happening that’s degrading the streams and stuff like that. You know. Loss of trees. But lots of recreation fishermen that don’t have my background don’t really understand that.

**Interviewer 1:** Right.

**BD051:** I will admit, yeah there will be more trash sometimes. Because usually public access sites, you know, they don’t actively have trash cans and people litter and leave stuff. But I don’t think it’s as bad as - like, if you were to ask a recreational fisher right now, they would say that’s the first thing. And I don’t really believe that’s really the reason why there’s less fish in these public access spots.

**Interviewer 1:** Sorry, will you repeat that? So you’re saying that the recreational fishermen, there’s a concern that there’s a lot of marine debris and trash right now that’s impacting target species populations?

**BD051:** Yeah, they do. And also overfishing in general, from other recreational… it’s really funny because, like, I’m on all these facebook groups and like, you know, I follow CCA and lots of guide fishermen, and it’s really funny to see the guide fishermen be like ‘oh, the DNR needs to be harsher on recreational fishing’ and stuff like that, but not on me. Everybody else. Like commercial fishing needs to be cut, the actual recreational fishermen, but guide fishermen? No. Like when you look at the numbers, that’s literally the exact opposite of what the problem is.

**Interviewer 1:** Right.

**BD051:** So that’s a little, you know. That’s kind of frustrating. Sorry. What was the question again?

**Interviewer 1:** Oh no, I was just asking about the trash and marine debris concern.

**BD051:** Yeah, and that’s the other - yeah. Lots of people think that’s the reason why some areas are more degraded. And because a lot of fishermen, recreational fishermen, even if it is a public access spot, you won’t believe the lengths people go to hide where they go fishing.

**Interviewer 1:** Right.

**BD051:** They, like, it’s so funny. They post their picture, but they’ll completely black out everything around them. So why even post a picture? Like I get not showing a landmark, so they don’t know exactly where they’re fishing, but like, to just completely edit the photo so it doesn’t even look real, yeah. So a lot of fishermen don’t like sharing their spots. Even I sometimes don’t share the exact location of where I go. But I’ll usually say the general area of where I’m going. It’s not like I don’t tell anyone where I was fishing at all.

**Interviewer 1:** Right.

**BD051:** A lot of people do that. So they really believe that no one should be sharing information like that at all. Even if I don’t, you know, like, share the exact spot because I want to go back in a week or two. I’ll still give the general area. I might not give you the exact spot, but I’ll still give the general area where I’m fishing. Yeah. Sometimes I have to promise my friends not to give the exact spot. So that’s why in southern Anne Arundel County, I can’t give you the exact spot.

**Interviewer 1:** That’s - we’ve done surveys with fishermen before, and they’ll be maps and we’ll ask them to circle where they fish and they won’t do it. People are very secretive.

**BD051:** Yeah, people are going to be, yeah. They’ll be surprised. I like doing that for certain species, but, like, sometimes, depending on the location or the species I like to keep it a little private. But I’d be happy to give you a map. I have this app called Fishbrain, and you can record every species you catch and map it. So I have all that. If you want me to do that I can do that for you.

**Interviewer 1:** I think - I appreciate that. We probably wouldn’t… I can’t think of a use for that for this project. We’re not that spatially focused, I would say, in the work that we’re doing. But I appreciate it, thank you.

**BD051:** No problem.

**Interviewer 1:** Um, ok. And then are there - so we’ve talked about this already a bit. But are there any other environmental factors that impact your fishing or that are important to these system dynamics and biodiversity in the system?

**BD051:** Yeah. So I would say, I think weather, climate has a lot to do with it. Specifically with species I have been fishing for, it doesn’t really affect me, but I’ve noticed, like, off shore species… you’re going to start seeing a lot of new records for offshore species because the climate is drastically changing their range.

**Interviewer 1:** Right.

**BD051:** And I feel like that should be a pretty concerning - you know, that’s kind of concerning to me. But I don’t go offshore fishing all the time, because I don’t have that kind of budget. I’ve only done it, like, twice. Actually I’ve only ever done it once, technically. So. But, um, yeah. Weather affects a lot of it, like when it rains a lot I can’t fish in Patapsco because it becomes hypoxic and it’s just a muddy mess. So it’s not even worth my time to go out there.

**Interviewer 1:** Right.

**BD051:** Um, sometimes that even happens on the Patuxent as well. With those waves. Blue catfish - I’m still trying to figure out the bite in of itself. I know they’re always there, but they get real weird after storms. So it’s really hard to time it out for blue catfish. That’s probably why I don’t go as often. Um, what else. So for snakehead, I like to go out on really cloudy warm days. That’s the best time to go out for snakehead, at least for the summer months. But in the winter months, you can go fishing for snakehead. You just need three warm days, and at that third warm day they’ll be biting again. It’s really cool. It’s the only fish I can think of that you can randomly fish for in January and be pretty successful.

**Interviewer 1:** Gotcha.

**BD051:** Yeah. Um… catfish you can fish all year long, but the weather really affects them and, you know, it’s your tolerance to actually stay out there. Because sometimes I like to go out when I feel like I’ve been cooped up, but some days I don’t want to stand out there in 45 degrees for hours. But I’ve done it, yeah. I just haven’t always.

**Interviewer 1:** Ok, cool. So I heard what you said about snakehead. But for blue catfish, what are the ideal conditions for fishing for blue catfish?

**BD051:** Um, this is the tricky part. I would say not after heavy rain, not right after a storm. I actually like to fish for blue catfish when it hasn't rained a lot, because in the area I go I know they’ll be there. Because the salinity’s high there. So they’re not all throughout the river, they go more to the freshwater areas of the rivers. At least for the bigger ones. Because the bigger ones travel more often then the little ones. There’s like thousands of little ones. So they’re not the ones I’m trying to capture. I’m trying to catch the big ones that are 15 pounds plus. So at least for blue catfish, that’s the better system. Striped bass, that’s a little tougher to explain. Besides Patapsco, I don’t fish for them after heavy rain there and where I go on the southern Anne Arundel County, since it’s the bay, that has a lot more environmental factors. They’re usually more in that area in the fall. I haven’t really tried that area in the Spring. My friend, who’s also my coworker, he goes out in that area more. The dead of summer is not great for striped bass so I don’t even try for striped bass in the summer. Just because there’s more hypoxic conditions and it’s - I also like the, because striped bass are not doing so well, I don’t want to stress out the fish by fishing for them in July and August. Because that’s really another problem. Striped bass haven’t been doing well because a lot of people fish for them in July and August when they are exposed to the high heat. And even if you catch and release them, there’s a higher chance for them to die. So, I try to - I personally don’t fish for them at all. And they actually have a regulation for that usually enforced in the first week of August where there’s no catch and release, no catching striped bass at all.

**Interviewer 1:** Gotcha. And so when you’re not fishing for striped bass in the summer, what are you targeting instead at that time of year?

**BD051:** Usually snakeheads. Snakehead’s a great thing to go for in the summer. Yeah. I could talk for hours about this. So snakehead, I usually go in the summer, but snakehead - the bite will turn off when they spawn. Which happens multiple times a year. It usually happens in May, so I don’t target them then either, but sometimes it happens in the middle, randomly, in June, July, August. They can spawn to a crazy number. It’s really random, and I only hear about it from fishing reports or from people commenting on facebook. Or if I go out there and see it. So, a good time for snakehead is usually early Spring, so that March, April time frame. In May I don’t even go after them because I know they’re going to spawn and also they don’t like when carps spawn around the same time. Because carps splash around a lot, snakehead don’t like that, so I don’t even bother going around in May. Blue catfish, I go year round. They - that’s like honestly the best fish, like, if you want to go out in the dead of winter and catch a fish, that’s probably the best fish to target at any time.

**Interviewer 1:** Gotcha. Ok.

**BD051:** Usually blue catfish is like my safeguard if I don’t think I can go out for snakehead or striped bass.

**Interviewer 1:** Right, ok. Are a lot of other recreational fishermen targeting blue catfish? I’ve heard a lot about it from researchers, and I’ve been hearing that they’re trying to make more of a commercial market for it, but you’re one of the first recreational fishermen that I’ve talked to so it’s really interesting.

**BD051:** Yeah, so, not many, no. And I could see - so here’s the reason. I can give you a bunch of reasons. This is what I did my thesis on so… basically the reason why, in my opinion, the recreational fishing industry isn’t great is because they’re very slimy. So when I go out and I catch these big blue catfish, like, after I come home I’m just drenched in their slime. Which is kinda gross, I’m not going to lie.

**Interviewer 1:** Yeah.

**BD051:** That is gross. And now I like the taste of blue catfish. A lot of people don’t. Like my wife doesn’t. So I don’t bring it home as much. And when you do bring it home, when you have to filet it, it’s very difficult. So not only do you have to filet the fish, you have to peel the skin off. Which is very difficult with blue catfish, in my opinion. So I could see why from a harvesting, like if people want to fish for food, I see why people don’t want to do it.

**Interviewer 1:** Right.

**BD051:** Um, what else… yeah. Also, it’s a lot of waiting. I like it because I know where to go and what to do, but a lot people don’t usually have that kind of patience. So a lot of people don’t fish for that. Now I will say that people that fish exclusively from docks, they definitely target blue catfish more often because that’s probably what you’re going to catch if you’re at a public dock just waiting for something to bite. That’s probably what you’re going to catch.

**Interviewer 1:** Ok.

**BD051:** A lot of other fishermen don’t go because striped bass or snakehead, or flounder, red drum, pickerel, like, there’s so many other species that are just more fun to catch and not as gross. Also another thing is that when blue catfish is a certain size, you can’t eat them. I think it’s like 30 inches. It depends on the river you’re at. But in the Patuxent I know if it reaches 30 inches, it has too high mercury and PCBs to eat it. So that’s probably why a lot of people don’t like to go targeting blue catfish. Because they know that if they catch a big one they can’t even eat it.

**Interviewer 1:** Gotcha.

**BD051:** In the Potomac I think it’s even smaller. The Potomac’s really bad. I don’t even attempt to eat anything from there. Yeah. I think that’s really the reason why I think recreational fishermen aren’t as into it. And I - for like common eating it and market, I just think the market isn’t there. Like I said, not too many people like the taste. It’s kind of oily, but I kind of like that type of fish. So I like eating it. But I think it’s harder for other people to eat.

**Interviewer 1:** Gotcha, ok.

**BD051:** If the market can be there, I think then it would gain popularity. But I think the market has to increase. I think they need to get creative of where they serve it, um, yeah. Because as I said, if they to get it into more grocery stores and more restaurants and served in a more unique way, maybe that’ll kick off the market. But as of now, yeah. I think that’s really the issue now. But there really needs to be a market because it’s very scary how blue catfish are overtaking all of these local rivers. I did my whole thesis on it but, yeah. It’s very scary. The areas I fish in the Patuxent, I swear. There’s just thousands and thousands of little blue catfish everywhere. It’s really very scary for both as a scientist and a fisherman because they’re eating everything. Not only do they eat fish, they eat plants, the insects, the crustaceans, like they’re eating like garbage cans. They just eat everything.

**Interviewer 1:** Gotcha, ok.

**BD051:** You know, anything that can fit in their mouth. And when they get really big, they can eat any fish they want to. Yeah, it’s pretty scary.

**Interviewer 1:** So it definitely sounds like they have a negative impact on biodiversity.

**BD051:** Yes. They have a huge negative impact. That’s why Matt was so interested in collecting telemetry data on them in the first place. Yeah.

**Interviewer 1:** Gotcha, ok. The last thing and then I know we only have fifteen minutes left. So i’ll ask you one last question and then maybe we can fill in some more arrows in our last little bit of time, but I added in fishing for food. So, it sounds like you personally will fish blue catfish for food, but it’s not - like, striped bass I would imagine is better to fish for food? Is that true?

**BD051:** Yeah! So striped bass is tasty, but striped bass you can only eat one. They actually changed the slot limits here. So, I’ll probably - I don’t always get to keep them. I probably won’t get to keep many this year, because they definitely changed to slot limits so I probably won’t be able to catch one. But they’re very tasty. And it’s one per day, and it’s between - I don’t know the slot. It’s between 21 and 34, I think, this year? Something like that. Before it was like between 19 and 31. So. Um, yeah. But they’re very tasty, that’s why a lot of people fish for striped bass. And then another reason why I fish for snakehead is because they’re really tasty. I personally made many dishes, and my wife has too, of many different things we can do with snakehead. Like, we put it in the air fryer and make fish nuggets. We make fish tacos. We tried - we actually did a general tso’s thing that was actually really tasty. Even though the sauce we used wasn’t really that great. I think I want to actually try it with an orange chicken sauce. The snakehead are so mild that you can really make it taste like anything. Which I really like because of that. It’s almost like chicken. Like, it’s really crazy, you can really make it taste like whatever seasoning you want.

**Interviewer 1:** Interesting. So one thing - so, I will pause there in terms of adding in concepts. But, one thing that I want to mention before we continue is that we refer to this tool as semi quantitative, and that’s because we can add numerical or categorical weights to these arrows in between two concepts. So, we can assess if it has a low, medium or high impact. And those impacts are just relative to one another in the system, so it just helps us assess which relationships are driving system dynamics. And so it’s ok if we don’t have time to really go through all the categories or you don’t have specific thoughts on categorizing every relationship, but I just wanted to point out, because you’ve mentioned a few that I think are important or interesting to capture. So, saying that you fish for striped bass and snakehead for food, it sounds like you also do fish for blue catfish for food, and maybe to a lesser degree than striped bass or snakehead? Is that accurate?

**BD051:** Yeah, mostly because of the filet thing. It’s really hard to filet them. That’s usually the limiting factor for me. So like, I usually when I go blue catfish fishing, I don’t have a lot of time to come home, filet the fish, shower, and then do whatever I have to do the rest of the day. That’s usually the problem with that. I would like to do it more. I actually had blue catfish seasoning that I’ve been really wanting to use every time I’ve gone out, but the last few times I haven’t caught anything. So I might actually just go to the grocery store and buy some. Yeah. I still like it. My wife doesn’t like the taste of blue catfish so much, but yeah. I do.

**Interviewer 1:** Ok, cool. So, as you can see I’ve started to draw in some arrows as you’ve been talking. And, I had - so I just changed…

**BD051:** Yeah, does the red arrow mean negative impact?

**Interviewer 1:** Yes.

**BD051:** Yeah, I would put a negative impact from snakehead on biodiversity. Because they are also very highly invasive. I didn’t talk about it as much. What I worry about with snakehead is that they occupy a really niche space. It’s a very shallow habitat and because it’s a really shallow habitat they can eat a lot of gorge fish. Um, and also a lot of other species. They eat wood ducks, they eat amphibians, small turtles, things like that. And the scary thing about snakehead is, I think because it’s so popular, a lot of people are introducing them in places all over the bay. Like for example, snakehead were not in the upper bay at all. And when they really started becoming popular, that population has increased like tenfold in the northern upper bay region. I swear, it must be all introductions from recreational fishermen. I’m concerned as a biologist and a fishermen because they’re going to have impacts in that area. And also they’re starting to show up in ponds and lakes and reservoirs, also through introduction, and that really scares me. Because I don’t think - they really don’t know the impact of what they could do in an enclosed space like that. And that really makes me worried. So, yeah.

**Interviewer 1:** Ok. That’s great to know. Ok, cool. So I had initially - I put in this general recreation fishing concept but I changed the striped bass concept to fishing concepts, like I think it just made more sense based on how you were describing the system. So, I think recreational fishing as a concept might be redundant now so I was thinking it might make sense to remove that, but I don’t want to take out any of these arrows connecting to it before we talk through that a little bit. So, I want to talk about these stressors over here, how do those impact specific target species that we have over here on the left?

**BD051:** Um, degraded habitat definitely affects striped bass. Blue catfish can live anywhere, they can live in any degraded habitat and now they’ll be less of them but they’ll still be there. Snakehead, I think they’ll be less of them but they’ll still be there. And actually, I’m a bit worried about if snakehead and catfish are in a degraded habitat, they can really do a number on that habitat because there’s less competition in general. So they can take over.

**Interviewer 1:** So they can further degrade the habitat when they’re there.

**BD051:** Yeah, yeah.

**Interviewer 1:** Ok. So that’s a - so based on how you just described that, degraded habitat has a really negative impact on striped bass. It sounds like it can negatively impact blue catfish and snakehead, but to a much lesser degree. Is that accurate?

**BD051:** Yeah. It honestly - it might be just, like, tides. Like for example, there’s some areas I know that I fish in the upper bay for snakehead and I’ve never been successful. It might be just knowledge and attempt. I didn’t attempt that many times.

**Interviewer 1:** Yeah.

**BD051:** But I just have not been successful. They also… I have seen them in the Patapsco, not blue catfish, but I’ve seen snakehead in Patapsco. Not many, but they are there. And again, it’s - I think it might just be a time thing. It makes me sad actually because I never want to see any of the invasive species, but yeah. It might be a time thing, it might just be that there’s not that many of them because it’s not as big in the area, and it’s also not that great of a habitat. Yeah.

**Interviewer 1:** So then, we don’t need the arrow from degraded habitat to the invasives, is what you were saying?

**BD051:** Yeah, I don’t think we do. No.

**Interviewer 1:** Ok. And then what about hypoxia? How does that impact the species that you fish for?

**BD051:** It definitely impacts striped bass, yeah. Definitely striped bass. Um, blue catfish, it does affect them but really it just affects how far they can go. And it’s not technically hypoxia, it’s usually… yeah, actually no. It’s more salinity than hypoxia. So you can get rid of that arrow.

**Interviewer 1:** Ok.

**BD051:** I mean it might affect them, like if blue catfish are in Patapsco, like if I was trying to fish from that creek, but I don’t think that’s a great - I just don’t think there are many there in that particular spot. I don’t know why. And snakehead, it doesn’t really affect snakehead. Snakehead are in shallow areas, so they don’t get hypoxia as much. It’s just really striped bass.

**Interviewer 1:** Ok. And then, we had climate change? That was one, right?

**BD051:** Yeah, that was just for offshore. Yeah.

**Interviewer 1:** And then… what about - so I know you were saying that public access and limited parking was a big issue for you. How does that impact you fishing dynamics?

**BD051:** That affects all three of them. It actually affects every species I fish for. Like I said, if I don’t have public access, it really narrows down where I can fish and when I can fish.

**Interviewer 1:** Mhm.

**BD051:** Yeah. In fact, I think if people really want more people fishing for snakehead and blue catfish, they really need to increase the public access in the areas they’re in. Like on the Patuxent, there is public access but it’s really very time limited and I think if they made the hours better, I would definitely fish for blue catfish more. And then snakehead, it’s very popular but because there’s not much parking in a lot of places, if you want to fish for them I think that’s a big deterrent for snakehead fishing. Striped bass too. I - the reason I go to my parents is because it’s the fastest place I can get to and fish for striped bass. And that’s not even a public place, it’s a community place. It’s not public. It’s just because my parents live there. But then, like, yeah. Public access really dictates where I can fish to begin with. Yeah. Because I have a kayak, so I can really put in the miles sometimes. But depending on whether, you know, I’m not an iron man. I can’t be paddling through ridiculous conditions through tide and stuff. It really - where I can launch and how far I can get to the spot where I need to go, public access really determines where I can do that. Yeah.

**Interviewer 1:** Right, ok. So kayaking - being able to kayak increases your access?

**BD051:** Um, no actually that decreases my access. If I only fish from a dock, I would be even more limited because there’s not many public docks. Public access affects where I can fish, is what I’m trying to say.

**Interviewer 1:** Right. Ok. Well, I know that we’re just about out of time, is there anything else? I know there’s a couple concepts that we didn’t connect but that’s totally fine. Is there anything else here that you think is really important to incorporate before we end?

**BD051:** No, I think we got everything. It looks like I got everything. Travel, maybe. I mean, travel time could be connected to public access. If you add more public access, then the travel time would be better.

**Interviewer 1:** Right. Yeah.

**BD051:** Yeah. But I think you got everything. Sorry I’m all over the place when we talk about this.

**Interviewer 1:** No, it’s really interesting. Sorry, the last thing - does travel time impact… I know travel time is what was impacting how you fish for founder and red drum and sea trout, right?

**BD051:** Yeah. Yes, that definitely affects it. It’s just simply because I don’t live close enough to southern Maryland or southern eastern shore, or Ocean City. That really, you know, because most of the time I’m doing day trips. I can’t spend the night anywhere.

**Interviewer 1:** Right.

**BD051:** That’s why I don’t fish for them as often.

**Interviewer 1:** But they don’t impact your striped bass, snakehead, blue catfish…

**BD051:** Sometimes. Travel time does affect that, it depends on - yeah. Usually that’s a determining factor of which of the three I actually go for. I look at how much time I have and then I decide if it's worth it to go there. It’s a revolving door between those three.

**Interviewer 1:** Gotcha. Ok, that makes sense. Ok, cool. Well, I’ll stop there. Thank you so much for your time, I really appreciate it.

**BD051:** Yeah, no problem. Yeah. If you have any more questions or if you want to talk more, let me know. And do you need more fishermen to talk to?

**Interviewer 1:** Oh yeah, that would be great.

**BD051:** Yeah, I can try to ask my one friend. I can also try, I don’t know, I don’t know if the guide…for last time, Matt had an intern ask me questions and I gave him the name of a guide. I don’t know if the guide actually interviewed. I can definitely give you some places to look though. Have you reached out to anyone in CCA?

**Interviewer 1:** Yes, but I haven’t had the best of luck.

**BD051:** Really. I would try - also if you try fish talk magazine, there will be two people that probably would answer these types of questions and probably have even more knowledge than I do. Eric Packard and Lenny Rodell. They talk about this kind of stuff all the time, so I think they would really… I think you should definitely reach out to them.

**Interviewer 1:** Ok.

**BD051:** I’m sure their emails are on that website. So, who is the CCA - the president of CCA Maryland would definitely talk to you about this. Now, I don’t know if he’s a leader of the recreational fishermen, not you know, he’s basically an activist for recreational fishermen in regulations. I don’t know if that breaks your category though.

**Interviewer 1:** No, no, that would be great too. Yeah.

**BD051:** Yeah, I would reach out to him. What is his name? CCA Maryland… sorry. I’m trying to look it up. David Sikorski. That’s his name.

**Interviewer 1:** Ok.

**BD051:** Yeah, his email is on the website. On ccamaryland.org. I’m sure he would be happy to answer all these questions. And I’m sure he would be able to explain all these concepts and more. Way better than I did.

**Interviewer 1:** Ok, cool. Thanks for the tip. Well, thank you so much, I appreciate it.

**BD051:** Yeah, no problem. Good luck with all of this.