2/8/2024

Transcript BD036

**Interviewer 1:** Um, so, mental modeling is a method that we use pretty often to try to understand a specific system the way that a resource user or a manager looks at it. So it’s a physical interview process. Which is great that we’re doing it in person.

**BD037:** Ok.

**Interviewer 1:** So, as you talk and answer these questions, I’ll add concepts onto the map and physically draw connections between them. So, like, you know, bad weather impacts oysters or something. As an example. And so I can draw that and then we’ll look at it together and see if this makes sense based on what you said and how you view it.

**BD037:** Ok, yeah.

**Interviewer 1:** Um, it’s fun, it shouldn’t be too painful. Uh, and I know you’re super busy, so I’ll keep this about an hour.

**BD037:** You’re good. This is my last thing today so, I mean after this I’m going to crack a beer open and start planning dinners. So yeah, take your time.

**Interviewer 1:** Sweet. Ok. Um, are you involved in fisheries management, environmental groups, or collaborative science projects?

**BD037:** Yes.

**Interviewer 1:** Which ones?

**BD037:** So, I’m collaborating with a couple local farmers and, like SeaGrant style organizations. SeaGrant is one of them, but other non-profits and non -

**Interviewer 1:** NGOs?

**BD037:** Yeah, NGOs. And also local extension.

**Interviewer 1:** Ok. So, what aspects of coastal and marine biodiversity affect you? And this could be positive or negative effects?

**BD037:** Um,I’m not sure I would know exactly what you mean. Can you give me an example of, like, I mean like an example of biodiversity? I only specialize in one species. And I know that - yeah. So…

**Interviewer 1:** No, that’s a fair point. Um, what does…

**BD037:** Like just the overall biodiversity of the ecosystem I grow my oysters in?

**Interviewer 1:** Yes.

**BD037:** Um, it depends. I mean, obviously I know the local biodiversity, like I know the different species that are present here and should be present here. I also would call it complexity diverse

**Interviewer 1:** We can add those species in.

**BD037:** I mean, so I guess I’m struggling to see what - I don’t see that biodiversity affects me personally as an oyster farmer. I know that it’s important to the ecosystem, I know that it’s, you know, I mean, that’s about it, so.

**Interviewer 1:** But does it affect your - maybe not you as a farmer. But higher or lower levels of biodiversity, would they affect how well oysters can grow in general?

**BD037:** I don’t know.

**Interviewer 1:** That’s fine. What - so not talking about biodiversity, what factors, like environmental factors, might impact your oyster farm? Positively or negatively.

**BD037:** Oh, everything.

**Interviewer 1:** Ok.

**BD037:** Listen - this is everything. This is Mobile Bay. I don’t know if you know this, but this bay is insanely unique and dynamic so my biggest, my big ticket items, the things that I’m most concerned about, are freshwater influx, hypoxia, which hypoxia is driven by so many different things. You know, nutrients, excessive nutrient input, stormwater runoff, big pulses, large pulses of freshwater, temperature, salinity, ever changing fish chemistry, turbidity… more recently I’ve become a little bit aware of the ph. We’re starting to see a little bit of ocean acidification here where I used to pound the podium, saying there is none, that’s not a thing here, and now we’re seeing it.

**Interviewer 1:** Um, so this sounds like this all might negatively impact oysters. Are there any factors that might positively affect them.

**BD037:** Uh, it’s super salty right now. Which is making for - growth is insane. It’s insane. Like they’re - the oysters are growing quickly right now. So I’m enjoying that. Also the taste, the oyster is - these are good salty oysters. I’ve never had an oyster this salty on the Mobile Bay so that’s good. I am really digging the… we’re getting these Mardi Gras oysters. Meaning that, I think what’s happening is either that there’s some sort of like, the chlorophyll, or the… it’s either chlorophyll from the green algae that’s growing on the cages is being incorporated into the shells so they’re getting these green patches. Or, it’s a type of cyanobacteria they’re incorporating into their shells. It’s causing these green - but our broodstock is from LSU, so they chose their broodstock to produce these gold and purple tones in the shells as well, and so we’re getting this green, purple, gold, shell color. And it’s insane. I’ve never seen so much of this green algae growing in Mobile Bay then I have recently. I don’t know what that’s attributed to, but I’m here for it. I want to keep it going, so, um. Hm. That’s about it for positives.

**Interviewer 1:** Ok. So, before we go to the next question, so I’m adding concepts to the model and we can assign not only direction, so like salinity positively impacts oyster growth, but also the strength of that relationship compared to the other things. So we can do that from low, medium, to high. And I can just note it. So, before we go on, lets go back around and I’ll ask you, if you can, to weigh those relationships.

**BD037:** Ok.

**Interviewer 1:** So, we’ll do it this way so you can see. How strong of a negative effect does freshwater influx have on oyster growth?

**BD037:** It’s the strongest.

**Interviewer 1:** Ok. And how about OA?

**BD037:** That’s the thing. All these other things kind of drive that.

**Interviewer 1:** We can add that.

**BD037:** Yeah. Because it’s so difficult to just say that one thing.

**Interviewer 1:** So temperature impacts OA. Salinity?

**BD037:** Mhm. Or the lack thereof.

**Interviewer 1:** Ok. So, as salinity decreases, OA will decrease.

**BD037:** Well, it’s a salt-wedge estuary. So depending on, yeah. Uh. It’s trophication. Yeah, it’s trophication. So that’s pushing - so whenever… so think about it like this. If we get a west wind, in the middle of July, I know we’re going to have a Jubilee.

**Interviewer 1:** Yep.

**BD037:** Because it’s going to push that freshwater off the top and it’s going to upwell all that hypoxic lower layer, pushing those little guys up to the shore.

**Interviewer 1:** Ok.

**BD037:** Hypoxia - uh, ok. So, here’s the thing. Hypoxia doesn't concern me about my oyster growth as much as freshwater influx does, but freshwater influx also drives it. So, uh, if you just want to like, hypoxia to the side.

**Interviewer 1:** Ok. We can make it - we can say that it’s a low impact.

**BD037:** Yeah. I mean my guys are right on the surface, so.

**Interviewer 1:** Right. So maybe not as significant. Ok, that’s fine. Um, how strong of a negative impact does turbidity have on oyster growth?

**BD037:** Um, pretty strong.

**Interviewer 1:** Ok. So high?

**BD037:** Yeah.

**Interviewer 1:** And, temperature.

**BD037:** Barely.

**Interviewer 1:** Barely, ok. Um, hypoxia you said is low, so the things that are driving hypoxia like nutrient input, is that a low, medium, or high impact?

**BD037:** Um…

**Interviewer 1:** It’s ok if you don’t know, it’s just kind of how you think.

**BD037:** Yeah, I would think that. So, that’s the thing though. In the bay, I would say that nutrient isn’t a big one here. Maybe not on my side of the bay.

**Interviewer 1:** Ok.

**BD037:** Yeah. Um, not on this side.

**Interviewer 1:** Ok. And then, stormwater runoff?

**BD037:** Uh, not on this side.

**Interviewer 1:** Ok.

**BD037:** Sorry, I have to break it down and bring it to my area, not like, everywhere so.

**Interviewer 1:** No, that’s totally fine. That’s perfect. We want something that’s really localized.

**BD037:** Ok. Because I mean, on the other side of the ship channel, absolutely all day.

**Interviewer 1:** Right. Ok. Um, and then, green algae on the bags that give the oysters those green patches. Does that have a medium, low, or high positive effect on oysters.

**BD037:** Um, I would say like a medium. I don’t know, we’re still…

**Interviewer 1:** Kind of figuring that out?

**BD037:** Yeah.

**Interviewer 1:** Ok, that’s fine. That’s really cool though.

**BD037:** Yeah, yeah.

**Interviewer 1:** Have you seen that in other places?

**BD037:** Uh, they’re - I did some research in Crawfordville Florida, and there guy who runs the farm that I did my research on, his tagline for his company is grass-fed oysters. And, they - you can definitely taste, they’re more earthy. I don’t know, you can taste that.

**Interviewer 1:** That’s really cool. Ok. Um, so that also has an impact on their taste.

**BD037:** Mhm.

**Interviewer 1:** And is that low, medium, or high?

**BD037:** I would say high. Yeah.

**Interviewer 1:** Ok.

**BD037:** Also, at this point in time, the salinity is, they’re just perfect. So…

**Interviewer 1:** Is that just because of where we’re at in the seasons right now?

**BD037:** It’s drought.

**Interviewer 1:** It’s drought, ok.

**BD037:** It’s tragedy. Tragedy that I’m benefiting from everybody else not benefiting from… yeah. I hate that I have to say it that way, but it’s God’s honest truth.

**Interviewer 1:** Ok. Um, let’s see. What is the last one. And then coming back to the one we were talking about before, how strong of an impact does temperature have on OA.

**BD037:** Very high.

**Interviewer 1:** Ok. Cool.

**BD037:** I guess also wind, but I mean, that’s seasonal, so.

**Interviewer 1:** We can put that in. Anything that you’re thinking about, I want to make sure that it’s captured here.

**BD037:** Yeah.

**Interviewer 1:** Um, so seasonal wind affects oyster growth?

**BD037:** Yeah.

**Interviewer 1:** Ok. In what way? Is that positive or negative?

**BD037:** So, in the winter time, it’s negative. Summertime, however, it’s positive. Um, honestly Spring and Fall, the wind - when it’s coming out of the Southeast that’s ideal. Or due out of the South it’s ideal. But like in the winter time, when it’s coming out from the North onto the bay… if I’m going too fast please tell me.

**Interviewer 1:** No, no. It’s ok. Ok. Um, is the Northern wind, is that playing a low, medium, or high? Does it have a low, medium, or high negative impact?

**BD037:** Uh, medium.

**Interviewer 1:** Medium. And then when the winds are blowing from the South. Is that low, medium, or high positive impact?

**BD037:** Medium?

**Interviewer 1:** Medium, ok.

**BD037:** I mean it’s just kind of, you know…

**Interviewer 1:** All good. Um, ok. So moving on to our next questions, are there economic impacts or any kind of economic drivers that might impact oyster growth or, like anything related to the system? We’re going to quickly run out of space here, but I have another sheet.

**BD037:** Oh, sorry.

**Interviewer 1:** No, it’s ok. This is good.

**BD037:** I - so economic in what sense? Like, it’s causing me economic growth or loss?

**Interviewer 1:** Yes.

**BD037:** Mm, I mean if I have a ton of oysters dying at a time, that’s an issue. And the only time I’ve ever experienced that here in my life is following rainfall events that cause these pulses of freshwater to come down from the delta. That is, that is my nightmare. And honestly, it’s the thing that weighs on my mind the most. It’s because, I literally lost my last farm due to it. Everyone on the bay - there were tons of farms here, on the bay, and then that wiped everyone one. And, for some reason this was able to kind of hold fast. I think we’re the only farm on the bay that does mass, commercial business.

**Interviewer 1:** Really?

**BD037:** Yes. And also, my first experience out of undergrad was monitoring the deadzone in the Gulf with the oil spill being open that same year. And so, we did CBT casts all the way out, and we’d go out 30-40 miles out and work our way in, on this legacy track, and then we’d run the shoreline all the way to the shores. I think we did the 12 isometer path, all the way to the shandel shores and back. And that same year we also, I ended up working with the Robinson lab doing algae sampling because that had shut down all the sandy beaches the entire year, because of that. And it’s - all of that was from fresh water coming down the Mississippi that they diverted and it happened here, in the Mobile Bay watershed. And it decimated everything. So that is absolutely, that is the thing that I worry about the most.

**Interviewer 1:** Ok.

**BD037:** And that’s why I worry about that.

**Interviewer 1:** Right, ok. Do you have any idea why this farm specifically was ok?

**BD037:** I mean, like, we lost everything. But, Doddie is resilient and she doesn’t give up. She’s hard-headed. And so, you know, I made her a promise and when I inherited her farm, I sought to, you know. She just wanted to have this as her last batch. And I got a wild hair in my butt and was like, hm, maybe we should get more seed. And now here we are! So, it’s uh, I don’t know. I think she also had the capital to do it, clearly. Um, you know, little guys like my operation, my dad’s - we could barely afford to cover our fees, our annual fees. To the government and whatnot. And it was - there was no way we could continue going. So.

**Interviewer 1:** Ok. Um, other economic drivers. You talked about buying oyster seed. Is there - I don’t know the market for that. Like, are there specific factors, either that we’ve already or that you could think of that might drive the price of oyster seed or affect your ability to purchase it?

**BD037:** Um, from what standpoint? Any standpoint? Because honestly, if we’re talking about the state of the industry, availability would be the limiting factor. Finding reliable seed, reliable broodstock. That’s what Andy and I were talking about a minute ago. We got a batch of seed from one farm, or one hatchery, that it didn’t survive. And, so, I took a chance there. Glad I didn’t take a huge chance, I only got a small amount. Because I kind of had an inkling. I don’t know if you know this but I got a behind the scenes deal with the… I used to work with the Auburn University shellfish lab, I know all of the hatcheries around here, on the Gulf Coast. And I know what quality they seek out for their broodstock. And if you tell me you got broodstock with, form the Alby line, and it’s mixed in with Triple In or LSU’s, I already know you. I can already tell you where that seed’s going to do well, and where it’s not. And so, I’m very picky about my broodstock. Some folks like to reuse and reuse, and then you get, you know, a royalty line, is what I call them. They’re just inner, inbred so deep.

**Interviewer 1:** This is like breeding dogs, kind of.

**BD037:** Oh, my. Yeah. It is. You know, when you deplete the genetic diversity, you’re not going to get a lot out of it, so. I’m also looking for a line of oysters that’s going to survive in Mobile Bay. No matter what we throw at them. High turbidity, low salinity, I need resiliency. I also chose diploids for my farm. Most farms prefer triploids. Triploids won’t survive in the bay, diploids will.

**Interviewer 1:** Do you know why that is?

**BD037:** Yeah, dips are more resilient. Um, you know, triploids, they’re palatable all year round. They’re essentially sterile. Genetically, or yeah, genetically sterile. I don’t know. But also, they’re finicky. So, I think that the diploids - I know that the diploids are more resilient. It’s going to take them longer to grow, but mortality’s going to be almost non-existent.

**Interviewer 1:** Ok.

**BD037:** Like, you’ve got to throw a lot at them for them to die. Triploids, you know, the temperature chances 3 degrees and they’re like aaah. I can’t handle it.

**Interviewer 1:** Ok. Anything else on the economics? Or no.

**BD037:** Not really.

**Interviewer 1:** Ok. Um, are there any, I know you’re already going to throw this back at me. But are there any like social drivers that might impact the system? Ok. What are those?

**BD037:** I’m a female.

**Interviewer 1:** Ok.

**BD037:** I’m the only female. Is that…

**Interviewer 1:** How do I conceptualize that? No, I think that’s a really important thing. Um, not to, like, ask you to state the obvious, but what - how does that specifically affect you? And we can, like, break it out.

**BD037:** Um, man. Uh, Doddie intimidated people. This is the best way that I can describe this. Doddie intimidated people, and she was a tough cookie. She didn’t take anything from anybody. And so, observing that, and with a little bit of, the little bit of pushback in my direction I’ve had in this community, it’s all… uh, this is so… I don’t know how to say this other than this. White middle-aged men, that are running the show, and when a young, fresh, scientist who has all the sudden decided that she wants to farm oysters that they haven’t heard of before. Even though I’ve been in the game for a very long time. They’ve never heard of me, and they’re like ohh, you know, like meh, we’re not going to deal with her. I struggle to sometimes get things done in the sense that people don’t return my calls, people don’t want to work with me that have heard of me, it’s very much a, I know if you’re familiar with the Bayou. There are like 5 founding families, everybody’s related and if you’re not one of those five… sometimes I have to throw out that, you know, my grandfather, his sister is a Johnson. Or, I know the Colingers. Or my dad’s good friends with such and such. Just to get the conversation started. However, I have found a very nice young lady who is kind of in a similar situation. She inherited her father’s business after he passed, and she prides herself on being a woman runned, owned business. So, we’re woman-owned and runned business. And she has become my official processor recently. I think she saw that I was struggling to get a foothold. And she helped me up. Plus she’s just a total kick-ass.

**Interviewer 1:** That’s awesome.

**BD037:** Um, it’s not one way that it has - people just don’t want to give me the time of day. You know what I mean?

**Interviewer 1:** Yeah.

**BD037:** And I think that’s how it impacts me. I assume it’s because I’m a woman. I don’t know. Wouldn’t have anything to compare it to because i’m the only female in the industry, you know.

**Interviewer 1:** Well… right. Yeah.

**BD037:** Here, at least.

**Interviewer 1:** I would say that that’s a factor. That’s a bias.

**BD037:** Yeah, I, you know.

**Interviewer 1:** Yeah.

**BD037:** If I’m called sweetheart one more time at an oyster community meeting I might lose it, but just…

**Interviewer 1:** Yeah, I mean, definitely not to the same extent, but I deal with it in my work.

**BD037:** Mhm.

**Interviewer 1:** Because fisheries science is also a male-dominated field.

**BD037:** Yeah. You joined the boy fishing club, what? I’m sorry.

**Interviewer 1:** No, you’re totally fine.

**BD037:** That’s - yeah. I gave the same spiel to my interns every year at the rodeo. Especially the ladies. Bat your eyes, put on a southern accent, and just smile through it.

**Interviewer 1:** Yeah. It’s unfortunate. But I think it’s slowly changing? Maybe? Ok.

**BD037:** I hope. I hope. It’s -

**Interviewer 1:** Maybe I’m a little bit more optimistic because I’m young and fresh.

**BD037:** Well I mean, also, I don’t know. You’re from…

**Interviewer 1:** New York. And I went to college in Boston.

**BD037:** Yeah. That’s the one. See, it’s the same here as it has been my life. And I turned 35 last week so, yeah. It unfortunately - it is what it is. And, I deal with it on a daily. So it’s, well I mean, you don’t get used to it, but you learn to deal with it.

**Interviewer 1:** Yeah. Does that, like your experiences impact, like, your bottom line? Like, do you suffer from being able to buy oyster seed from people if they don’t return your calls, or like are there other monetary losses because of that? I’m trying to…

**BD037:** Yeah.

**Interviewer 1:** Connect it back in? Yeah.

**BD037:** So, um. I - I don’t know if monetary necessarily… well yeah, I guess at the end of the day it is. So, we ran out of space on the farm 2 weeks ago, and I was frantically trying to find somewhere to offload oysters because we just - we’re booming right now. Growth is good. Also, you know, I have the time to handle them know whereas I didn’t have any time. Literally the farm was just sitting. And so now that I have the time and I’m working on it, I’m realizing, like hey, I have so many oysters. I was frantically trying to find someone to sell them to. And it almost got to the point where I was about to call the bay keeper and said hey, would you like a generous donation of the oysters for any type of restoration project? You know. We were going to donate them to Tintin Reef. I don’t know, I was just, like, I can’t sit here and have thousands of oysters go. But, again, I found Jade, she helped me out. But it was the, it was the time leading up to me finding Jade, I literally… I couldn’t find anyone that wanted to work with me. It was either their minimal requirements for doing business with me were so out there, like, if I’m ever at a point where I’m churning millions of oysters a year, I could absolutely do that. Um, but, and also, like I said. Maybe it is just that they didn’t know me, versus me being a woman, but when nobody’s picking up the phone, or nobody’s returning my phone calls and I can’t get rid of oysters, and when I say get rid of oysters, I can’t sell them, for profit, and I’m considering donating, that is loss. Because it took 3 years of hard work to get them here, and they’re beautiful, pristine. So.

**Interviewer 1:** Ok. Anything else?

**BD037:** Oh I have tons, but yeah, you’re good.

**Interviewer 1:** Sure, we can add more.

**BD037:** No no no, this is good. This is good. I can talk your ear off. There’s a lot that goes into oyster farming.

**Interviewer 1:** I’m sure. I know very little about this system. And I think it’s really interesting.

**BD037:** It’s complex.

**Interviewer 1:** Yeah, I bet.

**BD037:** We’re very tight-knit, there’s a very small group of us here. So everybody knows everybody, but jeez.

**Interviewer 1:** Yeah. So your - you said you were trying to do some work in collaboration with \_\_\_ (?)

**BD037:** Yeah I mean. Bill is my OG Pi, he is - he’s family essentially. He’s the reason that oyster aquaculture exists in Mobile Bay.

**Interviewer 1:** Ok.

**BD037:** There’s a - if you want we’ll go and walk out in the farm in a little bit. But, there’s a set of pvc pipe up there and I leave it up just because it was the original Australian long-line system. The first one to ever be installed in Mobile Bay. And it was installed by Dr. Bill Won, Dr. Oyster himself. With Doddie, so… and also, if I ever wanted to, I could still use it so. Either way, it’s, Bill contacted me at a conference that we had here in 2018 and we met them and he wanted to hire me after I graduated and I - he is the first author of my very first publication, um, and so… if you click on me at all there’s [BD037] as second author. No he, he’s just really been - he’s my mentor, he’s a good friend, so.

**Interviewer 1:** Ok. I was just curious because you went up there, and you’re working with them if there’s a -

**BD037:** Oh, no I’m sorry. He’s - he was at Auburn, now he’s at Vens (?). I’m so sorry, I should have clarified.

**Interviewer 1:** No, no that’s totally fine.

**BD037:** Yeah, he was at Auburn and then he recently switched to Vens, and so that’s the Vens connection I have, but honestly it’s just Bill. So.

**Interviewer 1:** Yeah, ok. I got it. Cool. Um, last kind of section of this… um, what management decisions in Mobile Bay area, or maybe at a state level more broadly are affecting this system?

**BD037:** Dredging the channel.

**Interviewer 1:** Yeah. Yeah.

**BD037:** Lack of regulation upstream. Lack of enforcement for municipalities that have said regulation is necessary. Exponential urbanization in the two - well, the eastern coastal county, Baldwin. And, yeah, just lack of upstream - climate obviously. Climate change has impacted. But I think we could probably mitigate that at least a smidge if, you know, we can get some assistance with the regulations and the regulatory organizations. That’s a whole thing, that’s a whole thing.

**Interviewer 1:** Ok. We can, we can talk about.

**BD037:** Uh, are you sure? This is - let me get my soap-box out. Hold the phone. No, I, the you know, mm. The state is the lowest funded EPA in the country, we - there’s a lot of, I don’t know. We’re a red state. And that’s the gist of it. And I hate to be that way, I really do, because there’s, you know, that should never be - regulatory action can come from any side of the isle. But, if we’re being - if I’m being quite honest, and I interned for the Mobile Bay National Estuary Program where I… they’re essentially meant to bring stakeholders to the same table and say how can we make this work, how can we collaborate. I’ve been a part of writing the CCOP. The Coastal Community Operational whatever Plan. They’re 5 year plan each year for the past 15 and it’s - well, not the past 15. The past 10. And the upcoming 5. And you see the same issues. You see the same people saying what they think is the issue, you see the same organizations. Both the baykeeper, the Nature Conservancy, any other like Pep, ACF, you know, all saying here’s the most colloquial issue, this is the one we feel we should target, you know, to make the most folks happy. This is the thing that we can get the most funding for. And every time they attempt to do just that, you get a lot of division at the end of the day. And if, if you can’t get people to focus on one thing to come together, you’re not going to have any movement, any growth. You know, colash is a big ticket item right now. It’s going to be a very big ticket item whenever it makes its way down the bay. And that’s inevitable. But, you know, people have a lot of opinions about what they think should be done. Um, I’ve watched people who literally like - Mayors of cities, walk into a meeting, and listen to scientists, my former colleagues say “hey, I see an issue here, and if we could just get a little bit of help on your end, we could tackle this and maybe do something,” and… falling on deaf ears. So, when you work in that realm it’s a little disheartening, but also, I have living shorelines out on my property here and I have a beautiful, sandy beach. The only one along this side of the shore, of the bay, that has a sandy beach. So I can see where it would work, you know, I can see where these stakeholders came together and made something that is… have you been to Lightning Point?

**Interviewer 1:** Yeah.

**BD037:** Lightning Point! Oh my god. Everytime I see Judy Hader, I’m like, Judy. She’s beautiful. That is a great example of, you know, folks coming together to actually make a difference and help mitigate some of these issues. Because, again, down there in that whole section, there - one of the reasons that the people were on board with that is because there were so many issues with the outfalls, and yeah. Boat traffic, and people and what not. You know, giving a shit. I digress. That was a whole thing.

**Interviewer 1:** That’s ok. Um, ok. So you mentioned some management issues. Let’s try to connect those into the rest of the model. So we’ll start with dredging. What is that impacting.

**BD037:** Ah. Turbidity. And temperature. Thermal pollution.

**Interviewer 1:** Uh, is that a high, medium, or low.

**BD037:** Um, that’s - I’m going to say that’s low for now, just because - I, it’s coming and it has been an issue before but at the moment it’s not.

**Interviewer 1:** Ok.

**BD037:** Not so much. Sorry, I’m trying to help you out here.

**Interviewer 1:** Ok, and then dredging to temperature. High, medium, or low impact there?

**BD037:** Let’s do low.

**Interviewer 1:** Ok.

**BD037:** Yeah. I mean, so there’s a lot that goes into dredging too. There’s - well there’s one more factor with dredging. The other factor with the dredging is increased wave activity.

**Interviewer 1:** Ok.

**BD037:** But again, I have attenuators out there, although I’m - if you can hear today. I’m a little concerned about our lower dock, it’s getting shifted around here lately. But with the deepening and the widening of the channel, we’re going to get those panem whatever tankers come through here and they’re going to throw waves. Much larger than the ones we’re getting.

**Interviewer 1:** So it’s increasing vessel traffic, which increases wave activity… which decreases oyster growth. Yes?

**BD037:** Mhm.

**Interviewer 1:** Yes. Ok. And is that more damage to you? Is that low, medium, or high?

**BD037:** Right now medium, yeah.

**Interviewer 1:** Ok.

**BD037:** So, if I can’t access my lower dock because the waves tore it up, it’s going to be a little bit of a problem.

**Interviewer 1:** Ok. Um, anything else you see here that dredging would have an impact on?

**BD037:** Um, I absolutely think dredging is going to decrease biodiversity. Because, when you block out the sunlight, and ya got nothing, you know, photosynthesising, you’ve got no primer producers, ya got no secondary producers or secondary whatevers -

**Interviewer 1:** Yep.

**BD037:** You get - the trophic level is just screwed, so.

**Interviewer 1:** Well there you go, we’ve come full circle.

**BD037:** I know!

**Interviewer 1:** You said it doesn’t matter!

**BD037:** I’m trying to think about it, I’m like yeah, this is how I do this! I really like this a lot!

**Interviewer 1:** Good! Ok. I’m glad. Some people who have never seen this before don’t get it - they don’t understand what we’re trying to do. And then other people, and you’re one of them, they really like it and they really get it. So that’s good!

**BD037:** I could absolutely use this on the daily just to get my thoughts together.

**Interviewer 1:** Yeah.

**BD037:** Honestly, honestly.

**Interviewer 1:** I’ve used it when I’m trying to develop research questions and say ok, ‘what are we looking at, and what is incorporated into the system’.

**BD037:** Yeah.

**Interviewer 1:** Yeah! It’s great. I love using this.

**BD037:** I’m digging it. I’m into it right now, let’s do this.

**Interviewer 1:** Cool. Um, ok. Anything else with dredging, or should we move on?

**BD037:** Um, I think that’s everything with dredging.

**Interviewer 1:** Ok. And then you mentioned the lack of regulation and enforcement upstream, what is that impacting? I’m sure a lot.

**BD037:** Oh, so much. Freshwater influx - well, that’s where we get the nutrients and the pollution and stuff, but also um, I wouldn’t say the influx part of it. But it definitely affects the health of the water, so water quality is impacted by that. I would even say that across the board -

**Interviewer 1:** You’ve also mentioned stormwater runoff earlier, is that what you’re kind of describing? In addition to water quality?

**BD037:** Uh, locally, the stormwater runoff, yes. Like, in the headwaters of the watershed, it’s more or less like - there’s a lot of agriculture. And there’s a lot of rural, non-incorporated, like, you know… at least up until, at least a good ways into the state along the water ways. Like along each river - you know there’s five rivers. Depending on which one you choose, these are unincorporated lands, these are privately owned wetlands or whatever, but also they’re getting their water fed in from someone else and 9 times out of 10, you know, Mobile - or Alabama has the most navigable waterways in, not only in the continental United States, but also including Alaska. Which is mindblowing, if you think about it.

**Interviewer 1:** Huh

**BD037:** Yes. So, every single water way, of course, has to touch some part of - and I know it’s impossible to regulate, or to enforce regulation along all of those, but I just feel like there’s a lot of… I mean obviously we’re getting a lot of nutrients from upstream. We’re getting a lot of, I mean, with climate change you get increased precipitation on land. And with that increased precipitation, it’s picking up everything that it’s touching when it falls out the sky. So dog shit, and manure, and motor oil, and every single bit of that has to flood through this bay. You know, one quarter of all precipitation, it falls all over the United States and flows through this bay.

**Interviewer 1:** It’s very complicated, clearly.

**BD037:** Yep.

**Interviewer 1:** Um, ok. Let’s move to the urbanization of Baldwin County. This is where everything’s starting to come together. Because you’ve added the most complex concepts at the end.

**BD037:** And I’m trying really hard not to make them too complex.

**Interviewer 1:** No, it’s ok.

**BD037:** You can get into the weeds about some of this shit.

**Interviewer 1:** That’s why we’re recording too, because I know I’ve missed stuff.

**BD037:** I’m sorry, I keep cursing. I apologize.

**Interviewer 1:** It’s ok, I don’t care. It’s just for me.

**BD037:** Ok, cool.

**Interviewer 1:** I curse all the time too, I don’t give a shit.

**BD037:** Ok. I just - you know. I said the f word - I dropped the f word in a very important interview I did for a magazine a couple of weeks ago, and I was like… I just had to be like, I’m so sorry. Let me rephrase that last bit. And she was like, ok. Continue. And I’m like, I’m so sorry.

**Interviewer 1:** Oops.

**BD037:** Whoops a daisy. Oo.

**Interviewer 1:** Um. Urbanization. What is that affecting here.

**BD037:** Um so. With the increase, you know, urbanization - we call it the great migration of Mobile to Baldwin County. Um, the cities over at Baldwin County, their infrastructure can’t handle the load. So, there’s been a lot of sewage spills unannounced, not unannounced. Unreported and unpublicized. And the system can’t keep up, and, that being said - people don’t realize storm water, storm drains, don’t go to any sort of treatment. There is just straight from the sky through the whatever the water runs through, and then out to the bay. I didn’t realize how bad it was over there until working with Restore, Jeff and I were looking at ph, temperature and ph that affects just the shell, not the live organism.

**Interviewer 1:** Yeah.

**BD037:** And the data we collected down at the wharf, which is literally from here to that yellow hammock, stormwater was coming out of the culbert there. I was putting out oysters here. And, we were seeing 2% shell loss a day. A day. And, it was just - that just blows my mind. But the more I think about it, and the more I talk about it - I talk with Mr. Jimbo about it, and knowing what I know about Baldwin County, the way the city planner or whoever. The way it’s set up over there, you know, I’m - I’m a water watch water quality trainer. And, part of my being trained to be a trainer, we toured the waste water facility over there. Which I think grad students do with Dr. Carmichael, or there’s some class that you can take here to have that kind of opportunity. And you can see that it’s a little overwhelmed. Especially with the Owa park going in, um, they’re very overwhelmed. And so, I kind of have an idea of how things work over there, and so I did not doubt for a second that 2% shell loss occurs today. Because every time we went out, the water was eutrophied and got all the way through the column every time. And we couldn’t keep oysters alive over there. So I, yeah, unfortunately people don’t quite realize that it’s not great, it’s not good. I mean, I’m sure that they’re doing well economically, but at what cost.

**Interviewer 1:** But that hasn’t, as far as you know, started to affect things on this side of the bay?

**BD037:** No. The channel shuts us off from them. Honestly though, like… i’m trying to think of a way that it might actually impact us.

**Interviewer 1:** I don’t want to lead you into adding something.

**BD037:** No no, no. I, and again, I have to remind myself that we need to bring it down to here. I think - let me tell you about all of Mobile Bay, and the Mississippi Sound, and Fort - I mean I can tell you. But no… um, yeah. Ok. You’re right. Urbanization in Baldwin County doesn’t directly impact me, but also it kind of does.

**Interviewer 1:** Yeah.

**BD037:** It also kind of does. Because like, it’s not affecting me now that I can see, but I’m concerned about it in the future.

**Interviewer 1:** Right.

**BD037:** You know, also, I don’t know. With - I know… I mean if they’re continuously lowering the ph in the water over there it’s, it’s still not great. It’s not great overall. Because, you know. If I think about it like the calcium and raginite supply in this water body, it’s being slowly dissolved. And my oysters don’t have anything to pull from, that’s where I’m concerned, maybe. I gotta stop thinking about it like a scientist and think about it more like a farmer. I’m like, well if the - you know. If the dissolved organic material is uh depleting…

**Interviewer 1:** Um, ok. So i’ll put potentially in the future, but maybe not. Maybe not now.

**BD037:** Sorry.

**Interviewer 1:** No no! That’s totally fine. Um, let’s see. Ok. And then, the last one - again I’m asking you to state the obvious. But, um, but you added climate change. What is that impacting here?

**BD037:** All of it. The entire system. Climate change really does concern me.

**Interviewer 1:** Ok.

**BD037:** It really does. Mostly temperature-wise, freshwater influx-wise.

**Interviewer 1:** Ok.

**BD037:** But, um, on the whole, anything abiotic, anything biotic. I mean, hell. I’m benefiting from an excessive - an extreme drought.

**Interviewer 1:** Yeah.

**BD037:** And you know, it’s positive to me, but hell. If any part of the land around here caught on fire right now, it would not be a good thing.

**Interviewer 1:** Right.

**BD037:** Or like what they’re dealing with down in the sound, like. There are whispers of germo. Which would be - would be catastrophic.

**Interviewer 1:** Yeah. How likely do you think that is? You don’t know?

**BD037:** I don’t want to say.

**Interviewer 1:** Ok.

**BD037:** But, it makes me nervous. So, uh, I’m nervous.

**Interviewer 1:** Ok. Um, well we’ve added a lot here. Um, the last question I have on this sheet is are there other environmental factors that should be considered. You can add as many as you’d like.

**BD037:** I think - I don’t think we have more to talk about. Honestly, uh, humans. I’m kidding. Yeah. No, that’s it.

**Interviewer 1:** Ok. Does this all make sense? If you can even comprehend at this point?

**BD037:** This is my brain, this is the visual of my brain. Oh my god this is tragic.

**Interviewer 1:** I think it’s cool.

**BD037:** Oh, man. Oh god. Mm. It does.

**Interviewer 1:** Ok. Anything else you think is missing, like any connections.

**BD037:** Not really.

**Interviewer 1:** Ok. If you want, I can also send you a picture of this to look at.

**BD037:** Yeah! Yeah, let me look at it. Because, I mean…

**Interviewer 1:** Because I just picked your brain right now, for an hour. And I’m asking you to look at the results.

**BD037:** Yeah.

**Interviewer 1:** So I’m sure you’re a little fried.

**BD037:** Well, I mean - I will say this. I guess I probably should have prefaced our conversation with this. I’m not all, I’m not 100% about commercial economic gain.

**Interviewer 1:** Yeah.

**BD037:** Like, I’m not - yes, I’m a commercial business. Yes I would like to make money. But, it’s not my main focus. It’s, honestly, I’ve said for the longest time that we were going to switch to an education outreach facility eventually. That’s more of a slow-go right now just because this is booming, if you will. And, you know, I want to ride this thing until the wheels fall. But, at the same time, if - as long as the oysters are in the water, and they’re doing their job and they’re healthy and they’re happy and they’re cleaning the bay, I’ve done my job.

**Interviewer 1:** Ok.

**BD037:** So, um, I’d like to at least make enough money to maintain my leases and my easement, you know, fees and keep gear in the water. Decent gear. I try to reuse and upcycle as much as I can. Just so that I’m not creating a - I’m trying to lessen my carbon footprint. We’re a charter member of the Nature Conservancy shellfish growth climate organization. I sit on the executive committee currently, and so, we’re always trying to do something to lessen our impact. But - and I always want to encourage research. So, I was trying to draft an email a little while ago before Andy showed up out of the blue, and tell Dr. Turner at Auburn… I was trying to reach out to a couple of folks down at the Sea Lab and say look, we have space. If you have students that need space, or just, not even oyster related but need waterfront access, please. I want to encourage grad and undergraduate growth and research, and so. That’s what Doddie wanted and what I want to do. You know, if there’s any way that I can help out, you know, I do have a little bit of a science background, you know, I could probably - possibly help in any fashion or just provide the space. So, um -

**Interviewer 1:** That’s awesome.

**BD037:** Yeah. We’re not solely dedicated to making money.

**Interviewer 1:** Ok. I think that’s a really unique perspective though, so this is really cool.

**BD037:** Thank you. I think it’s pretty cool. I’m still obsessed with the way you did this. I’m like, oh my god, I could totally get my like together with this thing.

**Interviewer 1:** Yeah, it’s - it’s fun. We’ve made some, we do some on zoom as well, and there was one model that had probably like 60 concepts in it. And we spent 3 hours making it.

**BD037:** Oh wow.

**Interviewer 1:** In like, two different sessions. And it’s just like, some people’s brains just work on such a high level and they have all these things that they just are thinking about.

**BD037:** I mean, I get it. Yeah, I get it. This - I don’t know if you know this, I’m obsessed with this body of water. I’ve, you know, my parents joke that I was never born, I just kind of waltzed up out of the bay one day and they were like ‘oh hey kid!’. Um, but yeah. This is… I mean I can see my parent’s house from here. This is the only thing I think about out of anything in the world. Rocky my puppy is probably the only other thing that I think about that much on a daily. How to improve it, how it’s declining, who’s doing research here, what research has been done before - I literally have 5 tabs on my computer open right now where I’m look at all the publications, even they might not be the latest and greatest technology, and they’re observations or research, but I just want to know everything that’s been done here so I can, I don’t know, educate myself and hopefully influence whatever’s happening in the future. Just because I’m always curious. This thing is so dynamic. There’s literally 35 years of my life that have been here. And I learned something different or am surprised on a daily. But, interview. I’m going to stop talking now.

**Interviewer 1:** Um, ok.