

Decades of Change in the Florida Reef Tract: An Oral History Project

Lisa Carroll Oral History

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Interviewer: ZM – Zachary Mason

Transcriber: NCC

Zachary Mason: Okay. So, this is Zach Mason. Today is October 15, 2020. I am remotely interviewing Lisa Carroll from my home office in Baltimore, Maryland, for the NOAA Heritage Project. Combining NOAA data with oral history interviews to illustrate two decades of change in the Florida Reef tract. Lisa, could you go ahead and introduce yourself and I guess tell us what it is that you currently do?

Lisa Carroll: So, my name is Lisa Carroll. I currently live in Tequesta, Florida. I was contacted by Zach because I own and operate Jupiter Dive Center. Jupiter Dive Center is located in Jupiter, Florida. It's the farthest north point in Palm Beach County. Our location houses two charter boats. We have a full retail store. We do teaching service and tank fills here at the store.

ZM: Excellent. So, I'm going to just go ahead and start from the very beginning and where we end up is where we end up. But can you tell me where and when you were born?

LC: So, I was born in 1969 and in New Jersey. I spent all of my summers in New Jersey at the Jersey shore. So, I was definitely an ocean water person from the very beginning. Early days, my mother used to drop me off at 8:00 a.m. at Spring Lake Beach, and we would be there until her workday ended at 5:00 p.m. So, I spent quite a bit of time at the shore and in the ocean.

ZM: So, growing up on the beach and then going through high school, were you interested in anything particular? Did you go to college?

LC: Yes. So, I always loved the ocean. Loved fishing, loved snorkeling. Just absolutely always wanted to be near to the ocean. I went to college. I went to Johnson & Wales University in Providence, Rhode Island, for food and beverage management. So, although very different from my current career now, it was a service industry that I liked, or the part that I liked the most. With diving and the ocean, the passion that's associated with that was also for me associated with food. Food is very passionate. People are very passionate about what they eat when they do like to cook. So, it just kind of molds together from a service industry and a passion for both of those things for me.

ZM: Yes. I ask because a lot of times – well, actually, let me take a step back. Can you tell me where your parents were from? Were they from New Jersey or did they move to New Jersey from somewhere else?

LC: Both of my parents were from New Jersey. My grandparents on my mother's side were actually from Germany and they came over. My grandmother came over when she was eight. So, that's where they landed. They landed in Northern Jersey at the beginning, and then Southern Jersey as they got older and started to retire.

ZM: Yes. I ask because when you said you went into the food service management, food was always really important to you. I find that a lot of times, that is passed down as part of a culture from someone who's immigrated to the United States. A lot of culture, I think, is passed down through food, especially in that kind of a time period, I think when it was important to assimilate more. So, I guess was it your plan to always live near the ocean, be involved in kind of that community, and provide the food that kind of to you reminded you of that area? Or what was

your plan?

LC: So, from a location standpoint, I didn't realize what my plan was until I moved inland. So, early in my career in food and beverage, I worked in the hotel side of the industry. I had relocated to Sterling, Virginia, and Columbia, Maryland, for a little bit of time. The distance from there to the ocean, although not that far, but in the grand scheme of things from being twenty minutes away from the ocean to three hours away from being near the ocean, I realized that that's where I wanted to be. I relocated to Florida years ago, originally because it was one snowstorm too many in the D.C. area. At the time, I was commuting to D.C. downtown, working in the business and industry side of food and beverage. I was working at the food service operation at MCI which doesn't exist anymore. But one snowstorm too many. We said, "That's it. We're packing up. We've got to go. I've got to be in the sun. I've got to be near the sand, and enough of this silly white stuff that comes down from the sky."

ZM: So, you mentioned snorkeling and diving. I'm just wondering who kind of got you into that? Or did you pursue that on your own?

LC: Interestingly enough, as a teenager and as a younger adult, I was not a diver. I was a snorkeler, boating, things of that nature. When we first moved to Florida, my husband and I – my husband owns a landscape company and I was, again, in the food service side of my industry, and we needed a hobby. We found that we were not doing very much on the weekends, and we needed a hobby. So, I was driving down the road. I saw a sign on like a piece of cardboard that said, "Learn to scuba dive," and that's how it started. So, kind of bizarre. Like, I didn't even research it. The thought process with the hobby piece was twofold. One, we wanted something to do on the weekends. But two, when we traveled, we wanted to have travel adventure with the ocean versus travel and sit by the beach for seven days. So, that's kind of how this all came together.

ZM: What year did you move down to Florida?

LC: I moved down in [19]95 and became a diver in 1999.

ZM: Can you elaborate a little bit on the certification experience? Like, what were the requirements and what kind of equipment were you using, things like that?

LC: So, the requirement was, at that time, you actually went through academics via book. There wasn't an e-learning course back then. So, you read and did quizzes throughout and we did SDI, which is Scuba Diving International. That's the agency that we originally were trained with. So, we went through this book. We answered some quizzes. We took an exam. We sat with the instructor, and he brought through the bullet points that were important. The dive tables, how the body works underwater, compression, things of that nature. Then at that time, we actually used my pool to do the pool work. Which was kind of odd as well, actually, because who would've thought that you would've been doing learning open water in your own pool, in your backyard? So, once we completed the skills in the pool, we went on to four open water dives. One was at Phil Foster Park in Riviera Beach, which is one of the top ten shore dive sites in the United States. Again, at the time, all we knew was we wanted to go scuba diving and learn to

scuba dive. We didn't know about this fantastic place that existed right in our backyard. There are some pretty amazing things down there at Phil Foster Park, Blue Heron Bridge. Then dive three and four were off the boat. We did our skills again. We were completed in our certification. We actually went on our first vacation to Ixtapa, Mexico. Absolutely loved it there. Loved the diving aspect of it. Loved the adventure side of it, and that's all she wrote. We were sucked in. It became our passion, and here I am today. [laughter]

ZM: I know you were a snorkeler before you became a diver. But do you remember the first time that you saw a coral reef in Florida?

LC: I would have to say that really, the first time that I paid attention to the coral part of the reefs was probably during open water, not necessarily snorkeling. When I was snorkeling, I was from the shore. I was looking at hardpan limestone type bottom, nooks and crannies and cracks to look at fish. But I was there more to see what was going on, swimming around me than paying attention to what was pretty around me. So, I think that the first time I realized the beauty of what the reef really has to offer was when I was scuba diving.

ZM: I don't want to jump too far ahead, but are you, I guess, relatively proficient in identifying types of fish and maybe even types of corals after having been diving for a while?

LC: So, yes. So, I am self-taught. Well, I took a basic beginner class with corals and for fish. Just the basic identifying marks, things of that nature. Where I took that a little bit to the next level is, a, when I was traveling, I always wanted to know what the unique piece of where I was going was and what I should be looking for. So, I did a little homework about each individual area that I was looking at. Then back here at home, off the Jupiter, or out of the Jupiter Inlet, I look for things that I'm aware of. So, I'm looking for if there's hard corals, soft corals, what's going on with them, and if there's anything I would need to report per se if there was some sort of breakage or damage.

ZM: Yes. That's an interesting note there. So, you mentioned reporting damage or other things. Can you elaborate on that? What can divers report and who do they report it to?

LC: So, there's BleachWatch, which is an organization where they report in and track and manage where hard corals are dying because of multitude of factors. Whether it be water quality, whether it be water temperature, whether it be damage from divers hitting the reef with their fins, or things of that nature. The other thing that we might report is if we saw anchoring on the reefs, which is illegal. So, we might report that. We also report hawksbill turtle tags, loggerhead tags. So, things that they're tracking in the area of fish that are coming in and out.

ZM: I'd like to talk a little bit more about BleachWatch, actually, if you don't mind. So, we, at the National Centers for Environmental Information, we have all the BleachWatch data that's submitted annually. They have these great-looking reports and everything. Do a lot of divers that you know participate in that program and report bleaching and things that they see?

LC: So, that's a great question. So, what I find is the industry leaders are reporting and communicating what's going on when they see it. Each of the industry leaders, whether they

own stores or boats, help facilitate citizen scientist class so that they are aware of what they're looking for or what they potentially could look for and then this way, help report. From there, if regular divers per se are reporting, I'm not aware of how active they are. But every year, all of the local stores and charters usually offer a class open to the public, free of charge. Somebody from the coral reef bleaching group comes in and shares what they should be looking for, so that we can then take it forward and report accordingly.

ZM: Got you. Well, actually, how long has it been illegal to anchor on the reef, and instead of anchoring on the reef, what are people supposed to do?

LC: So, they should be anchoring in the sand away from the actual reef. I'm not sure how long it's been in place where anchoring on the reef has been illegal, but it's been quite some time. We still see it. A lot of boaters just don't realize what they're doing as far as anchoring is concerned. A lot of them don't have the electronics to determine their location. They might see something in the water when they're looking at their depth finder that may be a depth change. They're not thinking, "Okay. Well, maybe there's soft corals on top of there, and now, I'm dragging my anchor through." So, it's education. It's information. Obviously, as divers, we advocate and we communicate to wherever we can, whenever someone is listening. But we're not always successful with the other folks outside of the industry.

ZM: So, mooring buoys come to mind. I feel like I guess dive shop owners, like yourself or people that operate charters regularly, might know where these are. But is there any outreach or education being done to educate boaters about this kind of hazard that you know of?

LC: So, there are pamphlets. Off the top of my head, I can't think of the group that actually puts that pamphlet together. Maybe it's NOAA. I'm not a hundred percent sure. But up in the Northern Palm Beach area, out of Palm Beach Inlet and out of Jupiter Inlet, there are no mooring buoys per se for diving. The reason for that up here is because when you look at the shape of Florida, Jupiter and the Palm Beach Inlet end up being like at the kickout of the land base or the knee of Florida. So, what happens is we're not protected. So, up here, for us, it's all drift diving. So, it wouldn't be a dive boat anchored on the reef. It would be a fishing boat that doesn't know what they're anchored on. All of our diving is drift. So, we don't moor anywhere and we never drop anchor. It's the best way to dive, actually [laughter].

ZM: Yes. Well, thanks for explaining that. That's a huge difference between diving in the Northern reef tract, I guess, as opposed to further South. That's pretty big. So, I'd like to, I guess take a step back, chronologically back to when you first got hooked scuba diving in the late [19]90s. Then when did you decide that this was something you wanted to do for a living?

LC: Well, I have to say that we actually didn't decide it. It just kind of happened. So, I would say, I think it was 2001, both my husband and I became instructors. Again, just passion, but had our real jobs as owners of a landscape company and still in food service. At that time, I was traveling all over the country for the contracts that I had related to my food service position. On the weekends, we would come home and we would come to Jupiter Dive Center, which we did not own at the time, and we used to be dive guides out on the boat. We didn't instruct per se, we just were out dive guiding. The first year that we became instructors, we were probably on that

boat every single weekend, eight dives a weekend. Then circumstance had it that the owner of the dive store and the owner of the boat ended up parting ways. We happened to be in a position that we were able to put a boat back and become partners with the dive shop and hire a captain. We still went about our business, day to day. My husband had his company. I had my position. So, that's kind of how it started with becoming in the industry, per se. An additional opportunity presented itself, I think it was 2004. So, two years later from being instructor to now, potentially, being owner of a shop. The shop came up for sale and we purchased it. Again, at that time, it was still two companies. So, we had Jupiter Dive Center, and we had a landscape company, and I still had my position. This all merged and went on for probably about a year. The people that were here working at the store were competent and able to do what they needed to do here. The landscape company needed to be sold if in fact we were going to be in the store the whole time. However, from my perspective, I never actually moved out into the store during the week as a permanent job position until about 2013. The company that I was with, I was on a long-term track with them. My husband was running the store day to day, and the charter business day to day. So, 2010, I had moved from the food service company that I worked for to Coca-Cola. I worked at Coca-Cola for three years and decided that Coca-Cola was not for me, and here I am in the shop now. So, that's how this all came to where now we're full-time running this business accordingly day to day.

ZM: So, the early two thousands were pretty busy for you guys then?

LC: Yes, they were very busy [laughter]. The good news is, 2020 is very busy now. Just a different type of busy [laughter].

ZM: So, do you have time to get out and go diving, whether it's to just be a dive guide or if it's a go out recreationally? Or are you too busy with the business side of scuba?

LC: So, for me, I actually was out Tuesday, out recreationally having a good time. My husband does not get out nearly as much as I do. You would think that I would be out like once a week, but, yes, that doesn't happen. I would say I probably get out once or twice a month to enjoy what we've got out off of Jupiter Inlet and then we travel. We do travel trips through the store. That's when we really get water time in.

ZM: So, I'd like to talk about the dive community as a whole. We've already talked a little bit, before the interview started, about how it can be kind of tight knit at least with all the different dive shops talking. But has it changed at all since you started diving at Jupiter Dive Center? Has the makeup of it changed? Have more people decided to start diving? What's that been like?

LC: So, from a professional community standpoint, since the time that we purchased the store until now, I think that we as a group realized that we're better together than separate. Yes, we are competitors separately. But for us to make a difference in Palm Beach County with tourism, with conservation, and with growing our businesses, we need to do it as a unit versus individually. Obviously, we all have our own individual marketing plans and things of that nature to grow the business. However, from a travel, tourism perspective, we need to be one voice with the county, the government, things of that nature. From the individual diver perspective, what I've seen over the last fifteen years is actually folks aging out and a new group

– not as aggressive or interested in diving as they were years ago. I actually think it's because this newer generation didn't have a sea hunt. They had a jaws [laughter]. So, if there was some sort of large interest outside of the field, I think we'd start to see more divers. Or outside of the advertising piece, we'd see more divers. But interestingly enough, so, COVID hit this year and that's been a challenge for everyone. However, what we've seen here at the dive store is that parents were tied up in the homes, homeschooling so much for such a long period of time. That we saw a movement of folks coming in, getting snorkels, masks, and fends for just beach snorkeling to get them out of the house and utilize the local resources outside. So that they could get the kids away from the TV, the books, and start spending some time in the community once the beach is opened up. So, hopefully, what this will potentially lead to is a bunch of newer divers at a younger age who have conservation in mind and talk organic and things of that nature, and realize their community is important. That will then further the industry as a whole and continue to protect the resources that we have here.

ZM: Yes. I mean, you mentioned COVID. Were you able to, I guess, keep any kind of dive trips going? Or how do you manage a dive shop during this time? I imagine there's some pretty unique challenges. You can't really have somebody test your regulator real quick to see if [laughter] it's working anymore, things like that.

LC: [laughter] So, it did present challenges. So, we were shut down like most of the businesses were around the country. However, I go back to the comment that we are better as one group as from an industry perspective. Because when Palm Beach County was looking at outdoor recreational activities, because we spoke as a group on a regular basis with these types of agencies, they came to us and said, "Hey, you are an outdoor sport. How would you be able to self-manage on your boat? What recommendations would you make for us to allow you to open in phase one?" So, we were very lucky that we self-regulate ourselves, that we have an open line of communication amongst ourselves. So, when that presented to us, we were able to quickly determine, hey, size of boats. This is what we should limit customers to. These are some policies and procedures that we should put in place to protect people. Then we were able to open a lot earlier than other industries because we were able to manage the process. But from a regulator perspective, like, how do we test a regulator and things of that nature, there's cleaning policies and procedures sanitizing that we follow CDC guidelines. When we first opened the store, and even still now, there's policies and procedures for getting on and off the boat. So, when you stand up from your seat, very similar to being in a restaurant now. You would put your mask on in a restaurant. Well, what we're asking our divers to do is when it's time to get off the boat or get on the boat, we're asking you, before you stand up to leave your regulator in your mouth. So that you're not affecting the deck hand on the deck who's helping you get to the water safely. Then the same thing when you're returning to the boat. Leave that regulator in your mouth until you're seated and bunged in, protected and safe. Then the deck hand can again step away from you so that there's distance between you and him before you put your mask on. So, it's interesting the things that we had to adapt to. I felt at the beginning of the process as we were putting these procedures in place, it's hard. You had close to twenty years or fifteen years of procedures in place from a safety perspective. You needed to completely change everything you had done so consistently for fifteen years that now, all of a sudden, in a matter of thirty-six to forty-eight hours, you're changing so that you can open and have open businesses again. It was a little crazy [laughter].

ZM: Oh, yes. I think when you mentioned the professional dive community coming together to kind of speak as one united voice or one front, I find that really interesting. Are there other occasions or other times that you recall having to kind of unite professionally as a community and talk with, whether it's state government, local government, to get anything done or kind of, I guess advice on different policies or anything like that?

LC: Oh, yes. So, most recently, it was probably last year at the FWC meeting in St. Augustine, the goliath groupers were on the agenda as to whether or not they should open them up to fishing. Goliath groupers is the definition of the term shooting fish in a barrel. So, what happens here in Jupiter and along the Palm Beach coast is in August and September, the goliath groupers aggregate here. So, they go to one specific or two specific locations, usually, artificial reefs. They are there day in and day out to the tune of, at the early in the season, there's thirty goliath groupers to the middle of the peak season. There could be a hundred goliath groupers in one spot, day in and day out. They don't move very fast. They're here for some sort of spawning aggregation. If fishermen drop lines in there and pulled those fish up, they would be able to decimate that population in a matter of two days. It would be based on the size of the boat and how quickly they could get the fish hauled back. So, with that, we've done lots of communicating with FWC in protecting them and discussing – we did an economic study of what a fish would be like for the tourism industry. What the financial gain or the economic gain would be for the tourism industry versus the fishing industry. They basically put a number of about \$330 per fish out there for the economic value of tourism versus, I think the number was like \$20 for a fish caught and then tossed in the dumpster. Because there is no value in eating these fish at the size that they are. There's a mercury content that's greater than the typical barracuda mercury content. We discuss that all the time at these meetings. So, we're trying to keep these guys protected. We're always together on these types of things at these meetings. The goliath groupers, specifically, once they're done spawning, they all go back to their general locations. So, that could be all the way down to, I believe Brazil up to the North Carolinas. But when you think about the numbers that we see at these aggregation sites during those periods of time – so, let's say Jupiter probably has between the main artificial reefs and the overflow reefs, like maybe they're seeing three hundred groupers total across the northern portion of the reef system from Jupiter down to West Palm. Let's say West Palm has another three hundred from there to the Boynton Beach Inlet. So, it looks like there's these massive numbers. But these numbers are coming from all over the place, and they're coming here for the spawning. So, if there's, let's say a thousand goliath groupers in Palm Beach County, well, those are not goliath groupers that live here on a regular basis. So, once they all go away, maybe there's fifty goliath groupers from Palm Beach Inlet to Jupiter Inlet that are here year round that are resident goliath groupers. So, if we don't protect them and we don't talk as a community and even agree or communicate with the fishing industry to make sure that they realize there's really not much value other than that trophy fish opportunity to save these fish, then we could decimate them again like they did in the early [19]70s.

ZM: You say decimate again, have you noticed an increase in goliath grouper populations, I guess in somewhat recent years?

LC: So, what we're seeing on regular time outside of the spawning season, the August and

September timeframe, we're seeing twos, threes, fours, and fives goliath groupers on the reefs that have regular resident homes there. Whereas in past, you were lucky if you saw one or two across the whole reef system. The pictures from the [19]70s where there are fifteen, 350-pound groupers in the back of a boat just lying there. There's some raw video from years ago when they used to power head these fish on the deep ledge to having none, to now having these aggregation sites is just amazing. So, we're definitely seeing more. We're not seeing anywhere where they should open a season that says, "Hey, we should catch these fish and we should bring them back." We've talked about what scientific data would need to determine their lifecycle and things of that nature. Would it be beneficial to have a limited catch or a licensing scenario or permitting scenario for these particular fish? But we're just so unsure at this point because there aren't numbers, once the aggregation is gone, that a level that would assume you could catch that we just – we as a dive community speak up at these meetings and make sure that you need to figure it out. Figure out the science behind it before you open this season back up.

ZM: So, that's a really great example. Is this something new that government is including the dive community? Or in your experience, has that always kind of been one major step taken before these kinds of big decisions are made?

LC: So, I think that from an FWC standpoint, obviously, the fisheries were always a component of their role in the Florida community. I think that the fishermen were the dominant voice with FWC with these types of scenarios where they're talking about red fish or they're talking about tile fish or things of that nature. But when it came to the areas with diving, I think it was the community that said, "We need to get involved," versus FWC reaching out to us and saying we need to get involved so that they understand the value. We talk about sharks the same way, making sure that we're protecting the sharks in the area. So, we're definitely a part of the community, of the scientific community, and the managing resources community now. But I think it was us that went to these agencies to say, "Hey, we are here too, and we want to get our voices heard."

ZM: Yes. Let's see. Are there any other examples of the dive community speaking up on things like that?

LC: So, we don't necessarily need to speak up about the protection of the turtles and the nesting in the area. However, the way that we participate from a protection standpoint of the turtles is to make sure that we're teaching awareness courses. So, we teach awareness courses for turtles. We teach awareness courses for goliath grouper. We teach awareness courses about the sharks, and we teach awareness courses about lionfish. I would say the lionfish, as a community as a whole, we probably speak up about that to try to protect what's going on out there with our reefs and the voracious appetite that these lionfish have [laughter].

ZM: Do you remember when lionfish first became a problem?

LC: It was in Fort Lauderdale. I want to say it was [19]85 when they first found the first lionfish in Fort Lauderdale. If you look at those maps from year on year of where that spread is along the coast of the U.S. and into the Caribbean, it's just amazing at how quickly that has gotten out of control. I'm not sure that we're going to be able to get that back. The fact that they

can stay alive up in fifty degree water, and they've been seen up in Rhode Island and in Massachusetts, is a little crazy [laughter]. So, we've got areas where we don't dive as often, and we don't know what damage is being done up in those waters.

ZM: So, you've got lionfish. That's a relatively new development. Coral bleaching, you mentioned earlier, reporting that. Have you seen more evidence of bleaching recently than in past years?

LC: So, actually, I think the health of the reefs in our area is better than it was in the last couple of years. Like, things are changing a little bit up in our area. I have not seen as much damage. I have not seen as much bleaching, as much disease as I had done in the past. However, and I put this out, this particular year, 2020, the water temperature has been extremely warm. So, it'll be interesting to see what the reefs look like next year if they're doing damage. Now, I'm not seeing it, but Tuesday I was out, it was eighty-four degrees. Normally, what we're seeing now is – the good thing is we're not seeing them, but we see hurricanes. We see currents coming in that are bringing cooler waters in. Not substantially cooler – eighty degrees, eighty-two degrees. But for us to still be diving mid-October, eighty-four degrees, the question is, what is it going to look like next year? How long is this water temperature going to stay at that temperature, and how much damage could it potentially do?

ZM: So, I guess kind of related, I find that divers seem to be more supportive of protective action, like marine protected areas or things like the Florida Keys National Marine Sanctuary. Do you find that to be true in your local dive community at least?

LC: So, up by us, we don't have any protected areas per se. However, what we see is, on a regular basis, there's a regular group of divers that are constantly picking up trash on the reefs. We do cleanups with the agencies at Jupiter Dive Center. We sponsor cleanups. What we find up here by us is we're not actually picking up all that much trash because on a regular basis, people are picking it up. So, that's a good thing. We're not picking up bags and bags of cans and bottles and bags and fishing line and things like that. But we are picking up a little here and a little there on a regular basis. So, people are definitely conscious of that. People are definitely more conscious of where their fins are on the reef than years ago. I think that most people, if they see something underwater, it's more of a coaching opportunity on the deck of the boat instead of a yelling opportunity, which then causes people to not pay attention and not listen. I think it's more of almost like a mentor type of scenario, where if you see something, you're suggesting they change things. Or possibly, take a different class or learn something new. I think that it's better than just taking it to the next level of arguing with someone or yelling at someone instead of taking it as a teaching moment or as a mentoring moment.

ZM: Yes. I think that's a really important distinction that you made, mentoring as opposed to yelling and [laughter] screaming at someone. Do you think all of these education opportunities that dive shops like yours offer to divers make people better stewards of this resource?

LC: Absolutely. So, all of the instructors in Palm Beach County are really passionate about the things that we have. We're very lucky with what we do have here, with the large pelagics as well as the smaller things like nudibranchs and things of that nature. So, we are pretty passionate.

The instructors are pretty passionate about making sure that that resource is there. The community is involved in the bigger things like the sharks and the goliaths. So, the education aspect of it is important. The local divers are, obviously, on the same page as us because they realize the resources here. The advertising for folks like myself and other shops in the area, that go to the outside to bring in people from Baltimore, California, or Chicago to come diving in Florida, we talk about what an education opportunity it might be. Hey, come down here. It's lemon shark season. Learn about the local sharks here and the things that are going on around the world. Or, hey, it's turtle season. This is what you should look out for on the beach. But, hey, guess what? You get to see those tire turtles that laid all those eggs out on our reefs, and you can count forty of them. By the way, let me tell you all about the kinds of turtles that come here and how long the incubation period is for the turtle eggs and things like that. So, we're able to educate, which then makes people more passionate. Because we're expanding it out to people outside of here and say, "Hey, you can come here. You can dive. But you can also get something really magical and learn something about it coming to this area."

ZM: You mentioned that local divers are on the same page already for the most part, and you mentioned educating divers that come from other locations. What's the general attitude of those tourist divers? Are they pretty accepting of these educational opportunities? Do they treat the reef well? Like, what's their general attitude?

LC: So, I think overall, as a diver, local or tourist, there are opportunities to see amazing things, and they know that things are endangered. So, I think overall, they realize when there's a bucket list opportunity, like the come to Palm Beach County for something. They recognize that they don't want to hurt the environment that fish, turtle, even coral is there. So, they don't want to hurt it. They want it to be there. So, I think everyone in the dive industry, based on the nature of the sport itself, is willing to protect and try to do the right thing. So, maybe it's the eighty-twenty rule. Eighty percent of us will protect, and the other twenty may not necessarily pay attention to things that might be important down the road.

ZM: Yes. So, as time has gone on, we've been talking about the culture and the group of divers in that area. Some of the old guard is starting to age out. With the new generation coming in, have you seen an increase in interest from women? I feel like diving, at least in the very early days, like post World War II, started out as a very male-dominated pastime or activity. Has that been changing?

LC: It slowly has been changing. I think that it's more family oriented now. I think that you're starting to see more couples and more families try to choose this sport together, or a sport together overall. It might have been eighty-twenty back then – eighty men, twenty women. I would say maybe it's sixty-five, thirty-five now women. But I can tell you this. So, we do offer a travel program out of Jupiter Dive Center. We go to Indonesia and Philippines and Solomon Islands and Socorro and things of that nature. The majority of my trips are women without spouses. So, I think women tend to be more adventurous. I do have men on my trips. But from a travel trip, the ladies are the ones that are willing to get out and travel. They might not be in the day-to-day, hey, let's go diving tomorrow. On Tuesday, let's sneak out of work and go. Where the men may want to do that or the men might be more apt to go every weekend, the women are the travelers and the men are the day to day.

ZM: That's interesting. Have you faced any kind of double standards or even discrimination as a woman in the dive community – as a prominent member of the dive community?

LC: So, I wouldn't say discrimination. I wouldn't say that. What I would say is this, my husband and I both own this company and we play our roles. So, where there's an opportune where maybe it's a technical scenario or a tech dive or the guts of a regulator conversation that needs to happen, he's going to play that role. Whereas I'm going to be the one at the county saying, "Hey, we need to look at this from a tourism perspective. We need to do this. We need to do that." So, I think that we're paired accordingly and, again, we just play our roles. I don't feel like someone doesn't want to talk to me about a regulator if they walk in the door. But we just play the roles accordingly so that it's just easier [laughter] if that makes sense.

ZM: So, I guess looking in more of a retrospective, has diving technology changed at all since you first started diving?

LC: So, it has. What you're finding now is ninety percent of the people have computers. There's no reason to be doing tables when there is a machine that will do it for you with much better accuracy than you trying to remember which gas class you ended up in. So, computers definitely play a big role, and they were there when I started. I had a computer at the very beginning that was obviously important to me. But what I think the biggest changes are years ago, there used to be a substantial difference between brands of regulators and how they breathe and what components were in them. Technology has basically made, not all regulators equal. But they're so close now in breathing that most of the time, you can't really tell the difference between them unless it's on a machine. It's cycling to tell you, hey, this breathes at this rate, where this one breathes at this rate. So, the conversation of balanced, unbalanced regulators, and things of that nature are not as important as they were before. Now, it's more that this is a great quality reg. The question is, do you want it to have a special coating on it? Or do you want it to be a special color? Or do you want it to be a special way versus something that before was, this is going to breathe badly, this is going to breathe really well [laughter].

ZM: Can you tell me a little bit about what divers are breathing and what options they have? I think a lot of people even assume that right now, we're breathing pure oxygen when that's not correct.

LC: Oh, we get that all the time in the store. "Can you fill this up with oxygen for me?" [laughter] No, we can fill it up with air for you. No problem. So, here, in Jupiter, our reef depths are in a prime spot for us to always be on nitrox. Our depths are sixty to eighty feet to get the best bottom time with the best safety aspect for you to be diving at thirty-six percent nitrox mix in your tank. Or thirty-six percent oxygen percent in your tank, you're going to be better off than being on air. I think now, most instructors, it's an automatic now. It's, if you're doing open water, you should be doing nitrox, and here's the reasons why. Whereas maybe before, you should do open water and let's get you into advanced, and then let's get you into this. Now, let's look at specialties and maybe nitrox becomes a player. It's almost like shoes and socks, right? Open water and nitrox should go together [laughter].

ZM: Can you elaborate a little bit on nitrox and what exactly that is and its advantages?

LC: Okay. So, when you're talking about a scuba air tank, there's 20.9 percent nitrogen or oxygen in that tank. So, 20.9 percent oxygen in every air tank that you're breathing. So, the air that we're sitting here breathing now as we talk today in this interview, there's 20.9 percent oxygen going in and out of our bodies. When you use nitrox, what you're doing is you're adding oxygen into the tank and you're decreasing the level of nitrogen into that tank. So, what happens is you have less ability to get nitrogen necrosis. You have less ability to get the bends with the less nitrogen in your tank. So, it helps and protects you from a safety perspective. However, there are risks with nitrox. You have to follow a maximum operating depth so that you don't enter into a situation where you might get oxygen toxicity, which is a different type of scenario than the bends. So, you want to protect yourself with both, right? So, you want to make sure you're following your maximum operating depth. You want to make sure that you're always analyzing your tank so you know exactly how much oxygen is in there. So, you know exactly what your maximum operating depth is based on the mix that's in your tank. Some say that nitrox doesn't make you as tired as pure air. Not sure that really is true or not true. It all depends on your own physiology of your body. But I think from a safety perspective, when there's a hard bottom here, like there is in Jupiter, meaning that it's sixty to eighty feet, we're not on a ledge or a wall like in the Caymans, for example, there's no reason not to do nitrox here.

ZM: I guess switching gears a little bit, can you talk about if you've noticed any significant changes in people's attitudes about conservation from when you maybe first started diving to now?

LC: I think everyone has conservation in one way, shape, or form on their mind, whereas before, they did not. I think there's a multitude of reasons. I think one is, obviously, we talk about it. Whether it's politics or it's drinking straws, or it's reusable bags at the grocery store or plastic bags, all of that is always top of mind. From the divers' perspective, all of those things that I just mentioned, well, how does that affect the water? So, that's number one. Number two, what I do think is – and I'll use this very specific example. Grouper season, gag groupers, black groupers – the season for catching them and/or spearing them was open, and there were very limited regulations on that particular fish. What we didn't realize was when we were starting to see the groupers in February and March, we were seeing larger numbers because they were here to spawn. So, fish that we love to eat right on our table, we were actually – not we, but spear fishermen and fishermen as a whole were after them, capturing them. Because season was open and available to them to catch these fish not realizing the damage that they were doing in the long term. So, again, rules and regulation changed that and pushed that catch season to later in the year. But I think the reason why the awareness came on and why people are more considerate is because those fishermen and those spear fishermen who were catching those fishes in February and March started to see over time that they just weren't there anymore. So, things that were plentiful and we used to see all the time because we didn't realize the times that it was happening that we were seeing these fish, we did some damage. So, since then, we've moved regulations, which has helped the population to slowly start to come back. So, the good news is we're going to start to see more and more and more groupers – not goliath, gags, and blacks – that are going to be, a, there for us to see, b, to be on our plate, if we want to have it on our plate, and they're protected. Same thing with hogfish sizes. They changed the hogfish size to become

bigger so that we weren't shooting smaller hogfish, and we're starting to see that come back. So, regulation plays a big role with those types of things. Then it ends up being in a conservation standpoint that the people that were using them for food are now recognizing, hey, if I stop doing this for a period of time via the regulations, I'm actually conserving something for down the road.

ZM: Personally, what would you say is the biggest or most noticeable change that you've seen in the reef ecosystem over your time in Florida? It could be for better or for worse.

LC: So, the good news for me is I have seen a substantial number of fish return. When I was out diving on Tuesday, I noticed an abundance of fish out on the reefs, which means that the fish are healthy. We have seen a substantial number of sharks that are here on a regular basis, resident sharks. So, again, that means that the apex predator has something to eat. So, that means that the reefs are good, the smaller fish are here. The predators are here to eat those fish so that we are getting healthier, at least in my eyes from that perspective. So, I'm pretty excited about that. Then all of these protective initiatives that we have, the goliaths, the turtles, the regular groupers, are helping overall. So, I'm seeing a healthier reef system out there from my perspective.

ZM: Do you think maybe the healthier reef will help get more people interested in scuba as people start to age out get the new generation in?

LC: I absolutely think that a healthier reef will help the younger generation come into the sport. But I definitely think we need a 2021 sea hunt [laughter]. But funny that we talk about that. As you look at commercials and things like that nowadays, there's tanks in the background. There are fins in the background. There's a furniture company down here one day that had mass (muckle?) fins as part of their advertising. I think I saw a visa commercial the other day that had scuba tanks when they were talking about adventure in the background. So, there's little bits and pieces out there for the industry as a whole. But we need something big to drive that interest back. Again, maybe it was COVID and maybe it was all of these people being sick of being in the house. Maybe next year, we're going to start to see a bigger interest. So, maybe there is some good from the dive industry with the COVID piece of what went on this year. Maybe.

ZM: Lastly, I saw a question in a socioeconomic survey that asked if coral reefs were important to the culture of Florida. Do you think they are, and can you talk about that a little bit?

LC: Are the coral reefs important culture wise? I think that the resources, the reefs, things like that, are part of a lifestyle down here. I think it goes along with all of the outdoor water activities and ventures that we have available, which becomes a lifestyle thing, which then ultimately, a culture, right? So, we want to be out on the water and do the things that we do. If we didn't have a coral reef system out there, what would we have? We'd have a big blue lake that had some title [laughter], right? Not much else. So, I think that coral reef, that is the foundation of what goes on. Those smaller fish that those apex predators come in and things of that nature, help us have the opportunities to explore and utilize the resources accordingly as long as we continue to conserve them.

ZM: Excellent. I think that about does it for my questions. Oh, wait. Do you have a favorite

dive site? I forgot to ask. Do you have a favorite dive? Like, one that stands out in your memory as the best so far?

LC: So, I have two favorite dive locations. One is here, and I get that I'm probably partial to that. But the things that are offered here off of Florida are bucket-list things to see. When you talk about seeing a hundred goliath grouper in the beginning of September, by God, if that's not a bucket-list item, I don't know what is. The lemon shark aggregation that goes on here in February and March is a pretty amazing thing to see. Twenty to thirty lemon sharks there on particular days is pretty phenomenal. Unfortunately, those guys have not recovered as quickly as the goliaths had. There was a little bit of problem back when they changed the season again from a fishermen perspective or from a shark fisherman perspective. But they're there, and it's amazing. Like, you go to Galápagos to see these kinds of sharks or this many sharks. You don't think you'd come to Jupiter, Florida, to see that. There's just some interesting information about, they think that this might be one of three manta nurseries that are in the world. They just presented that information out probably in the last sixty days. So, if we pay attention to that, and if we look at the habitat that these nurseries potentially are, could we potentially have a manta site here on a regular basis on our reefs? Like, wouldn't that be crazy? That would be phenomenal to me. So, home is important. Then my favorite dive site at home is probably Captain Kurls. Depths on top are about fifty-five to sixty. Reef on the bottom is about seventy. It's just one of those lush, beautiful locations that I just love to dive. But my favorite site outside, or my favorite location outside of Jupiter, Florida, is the Socorro Islands off of Mexico, Cabo San Lucas. The reason why that is my most absolute favorite place is that is where the giant manta rays are that actually interact with divers. That it's not one of these locations where you go to, like in Indonesia or in Maldives, where the reason why the mantas are there are their feeding. These giant mantas are there. Well, they don't know why they're there, but they're not there specifically for feeding and they actually interact. They go from diver to diver to diver. It is my absolute favorite place to go. I'm going in November [laughter].

ZM: Nice. Congratulations. That sounds awesome. Oh, yes, one thing that I've been thinking about, the dive sites that are easier to get to and have more people, have you noticed any difference in the quality of the reef there as opposed to dive sites that are a little further offshore and a little trickier to get to?

LC: So, I think that Phil Foster Park, Blue Heron Bridge, which we talked about at the beginning of the interview, is the easiest dive site to get to and potentially, could have the most damage. That particular park is shared by local beach goers, fishermen, and divers. So, potentially, the numbers that go in and out of that park are very large. However, I think the ambassadors of the diving industry tend to protect that area as best they can so that there isn't damage there. So, again, it's a community conservation, mentoring, communicating, hey, this is really important. Please, be careful what you're doing here. On the reefs themselves, because there's no ability to walk in from the Jupiter area, and it's all by boat. Because there are no mooring lines or anchoring because of the current, our area is pretty safe. There aren't a lot of dive boats up here. Same thing in the Palm Beach area. Years ago, there were more divers and there were more dive boats. There were more dive operators. I'm sure that there was probably a scenario in which a dive site could get hit three, four, five times by different boats in one day. Now, basically, we can spread out. The bad side of COVID is, what's going to happen with

some of the operators now? But during the downturn in 2008, we lost a substantial number of operators. So, I think that we are supportive of each other in the field. We're not hitting the same sites other than during special seasons, like the goliath grouper season. We hit that site day in and day out. But that's an artificial reef that was sunk there purposefully. There is growth on the reef. But most people are in the sand wanting to see those goliaths as they hover right above those wrecks. So, I think that as a whole, we're going to be okay. It's just the outside factors now. It's the clarity, the release of water from Okeechobee. Like Okeechobee, the water clarity from things like golf courses and things of that nature that hit the water systems, that could potentially affect us.

ZM: So, you see actual direct effects on visibility from runoff from golf courses and things like that?

LC: No. We don't see visibility runoff, but we know that chemicals that are being used in there are affecting. So, it's not a visibility thing. From Lake Okeechobee, there is definitely a visibility issue. Luckily, for us though, unless there is a south current, which is nine times out of ten, there's not a south current. It's normally a north current. We're not getting that discharge down by us, but it's possible. But what's happening north of us, how is the fish life going to be affected and then ultimately, affect us because of what's going on up there?

ZM: Okay. Well, I think that about does it for me. Is there anything that I missed that you think we should talk about before we sign off?

LC: I think the only thing that I'd like to say is probably for those who eventually hear this, diving is a fantastic adventure. If you are a water person or, potentially, would like to be a water person, this is definitely an opportunity for you. It is safe. There are standards and procedures in place to keep it safe. What you get to see under the ocean is a pretty amazing opportunity that not a lot of people get.

ZM: Definitely. I can second that for sure. Well, Lisa, thank you so much for sitting down with me and letting me pick your brain on everything. I think this was really helpful. It was really interesting to learn more about your local area and what makes it unique as well. I've never been up that far north in Florida to go diving. So, this was really enlightening for me as well. So, thank you so much.

LC: Awesome. You're welcome.

ZM: Once everything blows over and travel is reinstated, I'll have to make a trip down for sure.

LC: We'd love to have you.

ZM: All right. Well, thank you so much. I'll be in touch. I'll send you the audio file so you can listen to it just in case there's anything that you want to cut out or whatever. Yes.

LC: All right. Perfect.

ZM: All right. Well, thank you. Have a good rest of your day.

LC: You too.

ZM: Bye.

LC: Bye.

[end of transcript]