

TRANSCRIPT

INTERVIEWEE: Bill Balboa

INTERVIEWER: David Todd

DATE: December 20, 2021

LOCATION: Brazoria, Texas, remotely recorded

TRANSCRIBER: Trint, David Todd

SOURCE MEDIA: MP3 audio file

REEL: 4086

FILE: EasternOyster_Balboa_Bill_BrazoriaTX_20December2021_Reel4086_NoiseFiltered.mp3

David Todd [00:00:02] My name is David Todd, and I have the good fortune to be with Bill Balboa here. We will be doing an interview and with his permission, we plan on recording this interview for research and educational work on behalf of the Conservation History Association of Texas. And for a book and a website for Texas A&M University Press and for an archive at the Briscoe Center for American History, which is at the University of Texas at Austin. And Mr. Balboa would have all rights to use the recording as he sees fit to. And I just wanted to make sure before we went any further that that was a good arrangement for him, and that's what he expected.

Bill Balboa [00:00:50] Absolutely.

David Todd [00:00:52] Great. OK, well, let's get started then.

David Todd [00:00:56] It is Monday, December 20th, 2021. It's just a little before two o'clock Central Time. My name is David Todd. I am representing the Conservation History Association of Texas and I'm in Austin and we are conducting a remote interview with Bill Balboa, who is based in the Brazoria, Texas, area. And he is the executive director of the Matagorda Bay Foundation. And previously, he served in the Texas A&M AgriLife - Sea Grant Texas program, and before that worked for 26 years in the Texas Parks Wildlife Coastal Fisheries Division. He has worked in a number of areas of coastal habitat and wildlife protection here in the state, with many efforts on behalf of Eastern oysters.

David Todd [00:01:49] And so today will aim to talk about his life and career and especially focus on his work in oyster conservation and restoration as sort of an example of the many diverse things he's been working on.

David Todd [00:02:05] So with that, I'd like to ask you a question about your childhood, and if there might have been any people or events who were a big influence in your interest in working with animals and the coast and oysters in particular?

Bill Balboa [00:02:27] You know, there were actually two folks when I was small. I was born in the Rio Grande Valley. And my father was a high school counselor, and we moved to a couple of different places in the Valley: Mission, Texas, and I lived mostly in Brownsville. But the first person, it was, I think, had a big influence on my love for the natural environment was a friend of my father's in Mission, Texas. His name was Bill Valverde. And I called him Uncle Bill. He, I think he's still the current International Game Fish Association record holder for alligator gar on rod and reel. And he caught that, I think, in the 1950s in the Rio Grande River. And so he, he started showing me pictures when I was five or six years old of his large fish, and he was also a naturalist and had a ranch down there in South Texas. So he introduced me to diamondback rattlesnakes, which I thought were very interesting. He also rehabilitated injured animals he found on the ranch or in the nearby areas. So I got to see great horned owls

and badgers and other creatures like that up close and in person. So he was, he was one of my first big personal influence.

Bill Balboa [00:03:43] And secondly was, my father was working on an advanced degree and it just so happened his mentor professor lived in Port Isabel. And so when my father would go down and meet with his mentor professor in Port Isabel - she lived right on the water - and so I would, I would go down, and I loved to fish, and so I would explore the coastline there behind her house.

Bill Balboa [00:04:07] And so those were my first, you know, real big introductions into the natural world. And, and that was just reinforced by the fact that we lived a block away from an oxbow lake in Brownsville. And so I spent most of my time. I just had this natural love and affinity for nature and all things natural. So that was pretty much how I spent my spare time.

David Todd [00:04:33] Yeah. You mentioned this mentor that your father had in Port Isabel. Do you recall her name?

David Todd [00:04:43] Yes, it was Dr. Leigh Peck. And she, and my father, his master's thesis was on, exploring cultural bias in standardized testing. My father was from Mexico. And Dr. Leigh Peck was a professor in psychology at the University of Texas, Austin. And she was sort of a professor emeritus and was living in the Valley. And that's who he worked with. And, you know, after I think it was after Beulah, I found several tarpon carcasses washed up in her backyard and took scales and tried to conceal them in my bedroom at home. But my mother found them because of the smell, and that was the end of the scales. But yeah. Dr. Leigh Peck, she was also the author. She wrote a book called Pecos Bill and Lightning and also another book called, "They were Made of Rawhide", which had to do with Texas history, so she was a great storyteller.

David Todd [00:05:44] That's great. You know, I think it's interesting how so much of teaching is, is wrapped up in storytelling and giving those kind of anecdotes that, you know, give some color to the facts that you're trying to pass on. Much like what you're doing today.

Bill Balboa [00:06:03] Right.

David Todd [00:06:04] So let's talk a little bit about your education. I think you received a B.A.A.S. from Southwest Texas State, where you also studied in the Graduate School of Biology, and you also spent time at the Graduate School of Wildlife and Fisheries Science at Texas A&M and have also been enrolled at the Environmental Management Program at the UH- Clear Lake Graduate School of Business Administration. Were there any classmates or teachers that you met in all that schooling that might have led to your interest in nature and science and oysters as well?

Bill Balboa [00:06:44] Yeah. You know, I went to college. I graduated from high school in 1978 in Austin, and I was in love with the Hill Country and the streams and it was quite a change from Brownsville. We moved up to Austin from Brownsville in the late '60s, and so I was exposed to a whole 'nother kind of environment and it was a wonderful experience. But I went into the Marine Corps after high school, so I was when I came back in 1982, I started college and I I felt a little displaced. You know, being, starting college four years after my high school cohort and I was kind of shy. And I started in computer science and was doing pretty well, but realized that I really loved the biology coursework.

Bill Balboa [00:07:31] So I went and met with a fellow named Dr. Stan Sissom, who was a professor there that taught invertebrate zoology and most of the marine science classes. And I expressed an interest in marine biology from my childhood. I said, "You know, I'm really interested in marine science", and, you know, back in, back in those days, you know, there was, being politically correct wasn't always important. And he sort of scowled at me and he said, "What are you as a surfer or a SCUBA diver?" Because, you know, I found out later from Dr. Sissom that he didn't feel like many people that wanted to study marine science were serious, that they just they were beach bums basically, who were just trying to find a way to get back on the beach.

Bill Balboa [00:08:20] But Dr. Sissom and I became friends. I did well in school and he actually became my major professor in graduate school. So he was, he was my first big influence. We took lots of classes and field trips to the coast and I worked with him doing that.

Bill Balboa [00:08:37] And he also introduced me to Dr. Sammy Ray at Texas A&M in Galveston. So Dr. Ray was my second academic mentor. Then he also became a friend for, for a very long time, throughout my Parks and Wildlife career as well. And Dr. Ray was a, he started at A&M in the 1950s and all he studied was oysters and oyster diseases and things like that. So that was sort of my introduction to oysters and the diversity of oyster reefs and and just, you know, the sort of the form and function of oysters in Texas. So Stan Sissom at Southwest Texas State and Dr. Sammy Ray at Texas A&M University in Galveston were my big university academic mentors.

David Todd [00:09:29] Okay. Well, something else I wanted to ask you. For some people, you know that kind of formal education and a personal mentor is really important. But then for others, there are sort of cultural artifacts, you know, books, or films, or TV shows, things that you saw or read or experienced in some way that can be very important to you. And I was curious if there's anything like that, that, that you could point to.

Bill Balboa [00:09:59] Yeah, absolutely. And I will say that what really cultured my, my interest from a child on was the public library basically. My mother was an English teacher, and during the summer we would go to the public library wherever we lived and we were allowed to check out a certain number of books. There were some authors: Robert McClung, who wrote a lot of children's books on, on nature things - bears and other wildlife and herps and stuff like that, reptiles and things. And of course, Sterling North wrote the book Rascal about the raccoon. And I read Zane Gray and I read Fred Gibson's Old Yeller, and that series of books. But I also read Roy Bedichek, "The Adventures of a Texas Naturalist" and books by J. Frank Dobie. And so I, you know, I was getting, you know, most of, a lot of this started in the Rio Grande Valley. And so when I started reading a lot of these books, I started getting exposure to, you know, the marine world, not just in Texas, but elsewhere, and also the natural environment all over Texas, United States and different places. And so books were very, very important.

Bill Balboa [00:11:12] And then as far as movies or TV, I think anyone who is of my age that went into marine science would say, you know, Jacques Cousteau's programs, the Mutual of Omaha's Wild Kingdom, National Geographic programs, and the Disney nature shows that they had on back in the day were also really influential in you know, stimulating interest and maintaining interest.

David Todd [00:11:38] That's really interesting. Sounds like you had lots of influences from, from print to TV to, you know, just absorbing, I guess, what was around you with your, your mentors in school and then growing up in the Valley.

David Todd [00:11:55] Well, I guess the next thing I'd be curious to know about is how you might have landed at Texas Parks and Wildlife's Coastal Fisheries Department, where I believe you served from 1988 through 2014. How did you get started there?

Bill Balboa [00:12:17] Well, you know that the answer there is, my wife got pregnant and I was in graduate school in Southwest Texas State and she felt like, you know, it was time to get a job with benefits. And so I actually left the graduate program before I finished it. And I had applied for several jobs and truthfully, you know, as I was as I was pursuing this biology career, my main focus was invertebrate zoology and with a specific interest in parasites. And you know, I never really thought about a career other than maybe doing some teaching, right? I thought, "Well, you know, I can work through my masters, get a Ph.D., and I can teach." And so that was sort of just the only focus I had at the time.

Bill Balboa [00:13:03] And so when, when I started looking for jobs, I thought, "Well, where am I going to work?" You know, with the classes I've taken, you know, who will hire me? And I applied many, many times at the Texas Parks & Wildlife Office. I think I submitted something anywhere between 14 and 17 applications. And back in the day, it was all handwritten. You know, you didn't get to type out a template, you know, and fill in the blanks. So I did a lot of that and I got two interviews. One was with Inland Fisheries and the other was with Coastal Fisheries in Palacios. And so that was in 1988, and I was interviewed in Palacios and I got hired. And yeah, so that that that started my career there in just working in Matagorda Bay. It was it was an eye-opening, you know start to my, my new life, and it was a whole lot of fun, too.

David Todd [00:14:04] So what was your first exposure to oysters when you landed there in Palacios?

Bill Balboa [00:14:15] My first exposure to oysters was probably my first day on the water. You know, coming from central Texas, you know, I had had, I had taken several marine science classes, so I was pretty well versed in common and Latin names of a lot of the organisms, particularly invertebrates. And but I had never really spent much time on the water on the Texas coast. I didn't have much boat operating experience and I was hired in February.

Bill Balboa [00:14:41] So it was pretty cold, and my first trip on the water with a man that became one of my mentors, Joe Kana, was to go count oyster boats. And we went out on a very cold sleeting day and we went out and we went from Palacios and drove around in the bay and towards east Matagorda Bay looking for, for oyster boats. And we, we tallied them up and came back and then called the number into Austin. And that was my first real big exposure to how oysters were actually commercially harvested because I had no clue before that.

David Todd [00:15:22] That's interesting. So one of your first exposures to the species was really also an exposure to the fishery and the industry that harvested them?

Bill Balboa [00:15:34] Yes. Yes, that's right.

David Todd [00:15:37] And this, this counting program was an effort to, was it sort of a regulatory thing or was it more just an inventory?

Bill Balboa [00:15:48] Well, you know, Parks & Wildlife, when I started, they, they did a couple of different things with oystering and with shrimping. They would look at, say, opening day counts of shrimping. You know, they would, they would they would fly over Texas bays and they'd count the number of boats that were shrimping. And I think, you know, this was sort of a similar thing. They were trying to look at the numbers of boats out there as sort of a proxy for harvest pressure in any given bay. You know, so, you know, like in Matagorda Bay, we counted the oyster boats and there may be 15, you know, so in Galveston there was probably many more than that at the time. And so it was, I would say, to answer your question, it was, it was regulatory, but it was also management, if that makes sense.

David Todd [00:16:36] OK, well, let me ask you about these oysters that you were trying to manage. Can you give us like a quick ABC sort of introduction to the life history of the Eastern oyster?

Bill Balboa [00:16:55] Sure. Like many other bivalves or, you know, clam-type things that have two shells, oysters are filter-feeders, which means they, that they basically pump water through their body. They have, they have an inlet and an output. And so they pump water in and internal organs filter particulates out of the water. So cleaner water goes out and they have a process of, internally, of sorting the food from non-food product and they discard the non-food and obviously they ingest the food particles. And that's how they live.

Bill Balboa [00:17:36] They spawn generally in the late spring, early summer through early fall. It's as the water temperature sort of warms up. And there's a couple of peaks within that, within that time period. And what's interesting about oysters is, you know, when they spawn and the eggs are fertilized and you know, the way they spawn, is they, they basically flap their shells open and closed. So they're spending a lot of energy during the spring and summer spawning because it takes a lot of energy to open and close their shells to excrete the reproductive products. And when the eggs are fertilized, the larvae actually swim around. They're mobile. And they can swim around and they look for something hard to stick on. So that's why people will see beer bottles with oysters stuck to them or sticks or whatever else. But most commonly, the oysters will set on mom or dad, or their uncle or aunt, or other shells within, within the vicinity. And within about two months, they're actually sexually mature.

Bill Balboa [00:18:38] And so another interesting thing about oyster reproduction is most small oysters are male, and as they grow larger, they will, they will turn into females. And, and so that's sort of the life history there, in a nutshell.

David Todd [00:18:58] OK. Well, I was interested to see that while you were at Texas Parks and Wildlife, you were responsible not just for monitoring and conserving the Eastern oysters, but also just generally assessing the shoreline habitats and keep an eye on the fishery and ecological health. Can you help us understand the, the general role of oyster reefs on the Texas coast and maybe give us a quick introduction to their status and you know, the historic trends that you've, you've seen?

Bill Balboa [00:19:36] Sure. So oysters on the Texas coast: you know, oysters need fresh water. They need a salinity that's lower than Gulf salinity for a number of reasons. But so where you find oysters is, say, from, you know, Galveston/Sabine area down the coast to get to around Corpus Christi Bay. Below that, there are some oysters, but they're not there in great abundance.

Bill Balboa [00:20:04] And so the role that they play on the Upper Texas coast, they are the only real hard-bottom habitat we have on the coast in Texas. You know, other, other coasts may have coral reef or rock or things like that. But, but the oysters take a place, you know, on most middle and upper coast bays, you know where generally it would be a flat, open expanse of clay or silt or something, and so oysters provide this complex, hard-bottom habitat that provides all these nooks and crannies for things to hide in. They also filter the water so they improve the water quality. They provide fisheries habitat and a place for fish to feed because lots of small crabs and other critters live inside the oyster reefs and all of the, the little hidey holes that are created by the shell. And then also, oysters help protect shorelines. They act as a natural breakwater.

Bill Balboa [00:21:05] But, you know, as far as the status of oysters during my time with TPW: when I first started, you know, it seemed like they were pretty much holding their own. The trend was pretty much stable. You know, there's a lot of fluctuation, though, in oyster populations. You know, you could have real good oyster production in Galveston Bay and poor oyster production in Matagorda Bay if one area had good rainfall amounts that helped sustain oysters and the other was, you know, experiencing a drought. So oyster production is really variable, and it depends a lot on the salinity levels and things like that. So, but overall, amongst all of the natural variability in my career, it seemed like the oyster population was trending along pretty well until, I would say sometime in the 2000s, and you know, we had some hurricanes, we had some floods, we had some droughts and they came in very close time to each other.

Bill Balboa [00:22:08] And I think that really, that really affected our, the production of each year crop that would be sustaining the harvest from year to year. And it appears now that, that oysters have been in decline for some time. Not having seen Parks & Wildlife data since I retired in 2014, I believe that there are still some issues you know, with, with the numbers of Eastern oysters on the Texas coast with regard to, you know, sustaining the amount of harvest that's happening.

David Todd [00:22:38] OK. You know, I think that while you were at Texas Parks & Wildlife Department, you studied the role of oyster reefs in the biology of spotted seatrouts and, and I thought it might be interesting, it's something I think you mentioned kind of in passing about the role that that these oyster reefs provide, as, you know, with the nooks and crannies, of sort of forming a place to hide and feed. Maybe you could talk a little bit more about that larger ecological role of oyster reefs beyond their niche as a place that oysters live. Does that make sense?

Bill Balboa [00:23:24] Yeah, absolutely, absolutely. And you know, you know, one of the things that, you know, to sort of go off for a little bit of a tangent here. You know, one of the things that I've had throughout my career with Parks & Wildlife is I've always maintained a high level of curiosity about things that I was observing. That's not necessarily a pat on the back, it's just part of my nature. And, you know, part of Parks & Wildlife management strategy for monitoring and managing large finfish like red drum and spotted sea trout, black drum, those things, is we set gillnets on the shorelines in the spring and fall, and we look at long-term trends of the numbers that we catch in those gillnets.

Bill Balboa [00:24:13] Well, in those gillnets, some of the data we collect has to do with gender of certain species, and one of those species was spotted sea trout. And one of the things that I always noticed was we never really seemed to have a lot of male trout on the shorelines, which I thought was weird. But you know, a lot of animals will have sort of

disproportionate numbers of males and females, and that's just how they balance their species. Well, Parks & Wildlife also conducts angler surveys where we go to boat ramps and count fish that are being landed. And I noticed, particularly coming from East Matagorda Bay in the springtime, that fishing guides were landing almost exclusively male spotted sea trout because they would filet them in front of me. And I could see what the, what the sex of the animal was as they were fileting the fish.

Bill Balboa [00:25:03] And I worked there long enough to know some of the guides and I asked them, I said, "Where are you catching these fish?" And the places they told me that they were catching them were three or four large oyster reefs in the center of the bay. So I thought that was rather curious. And so I got permission to, for the upcoming gillnet season, to pair one net on each reef with shoreline sites. As we went through the gillnet season, what we found was, sure enough, there's a preponderance of males spotted sea trout on oyster reefs during the spring, which we didn't know before. So, and we also found that the species composition of fish on oyster reefs was different than that on shorelines. For instance, we'd get hardhead catfish on the shore. We didn't get very many hardhead catfish on the reefs offshore. We got gafftopsail catfish. And so there were some other things that people would consider you to be expected more black drum, that kind of thing.

Bill Balboa [00:26:01] But it was just really interesting to me to see that these particular reefs, which were, were different than a lot of reefs because they hadn't been harvested a lot. So they actually, their shape was actually mound-shaped and they, they came up off the bottom maybe three or four feet where the top of the reef touched the water surface. So there was significant vertical relief to these reefs.

Bill Balboa [00:26:24] So that really piqued my interest. And so, you know, I sort of pursued that when I, I got transferred to Galveston and looked at sampling oyster reefs. And it seems to hold true for particular kinds of reefs that are of a particular shape that they, they, they have similar species composition and they hold more male spotted sea trout.

Bill Balboa [00:26:43] So to me, you know, it was, it was, it was a big revelation to me that, you know, these reefs, even though they're fairly close to the shorelines, were, were playing a different sort of role, and holding a different composition of fish than the shorelines. And so I felt like, you know, that was time well spent studying those reefs and looking at the species composition and, and the male / female ratios of spotted sea trout there.

David Todd [00:27:10] That's, that's really intriguing. So the reefs not only were, you know, supporting a lot of vital and diverse fish, but, but different kinds and different genders from maybe the shoreline.

Bill Balboa [00:27:26] Yes, absolutely. And, and I believe that, you know, they, they, they run certain models in Parks Wildlife to look at population analysis or to forecast populations. And if I'm not mistaken, they, they actually adjusted the male / female ratio in some of their virtual population models to, to account for the numbers that we were seeing on oyster reefs, because it was, it was something that really I think, I think most of the people that work at Coastal Fisheries, when they saw the data, I think it was pretty surprising to all of them.

David Todd [00:28:02] Well, that's great. I love this story of how, you know, the tea leaves, you know, seeing, seeing these, these guides fileting fish that they'd caught on, you know, a certain part of the bay, near these reefs, parlayed into a, you know, better understanding for the nature of the whole ecosystem out there.

David Todd [00:28:26] So I think that you mentioned, in passing, we were talking about the trends of oyster reefs that in the, I guess, the aughts or, you know, the early part of the 21st century, a lot of these bays started to have, have some trouble with freshwater. I may be saying this wrong, but when you were at Texas Parks and Wildlife, you were the representative to the Regional Water Planning Group for Trinity / San Jacinto, Lavaca and Colorado rivers. And then again, later, when you were at an extension agent in Matagorda County, you were looking at these freshwater inflows. And I was curious if you could talk a little bit about the role of, of inflows in the health of these oyster reefs and how that might have panned out in some of these trends that you know you more recently have seen in oyster reefs?

Bill Balboa [00:29:29] Sure. So I think I did mention in passing, you know, that, you know, where you find the bulk of the oyster reefs on the Texas coast are, say, from Copano Bay to the North. And that's where you'll see the, the lion's share of the freshwater that historically has flowed to Texas bays. You know, the Colorado River is a huge watershed, you know, then you have the Trinity / San Jacinto going into Galveston and the Guadalupe, San Antonio, San Marcos Rivers down, down in the San Antonio bay system. And so historically, before the population grew to what it is today in Texas, you know, there was lots of freshwater that flowed. Of course you had, you know, we've always had drought in Texas and we've always had wet periods. So it would alternate drought and flood, you know, seasonally.

Bill Balboa [00:30:18] But what's happened, particularly in Matagorda Bay, is that as the populations have grown in Austin, we see sort of a drought that's, the onset of drought, that's, that's generated by conservative water management measures to make sure that Austin has sufficient water supply. So the releases of fresh water for environmental benefit will be reduced earlier. And so we have drought that's onset earlier because of water management to take care of the freshwater needs of central Texans.

Bill Balboa [00:30:58] And to back up, you know, oysters like, the Gulf oysters, like moderated salinity. And what that means is the Gulf of Mexico is anywhere between 32 to 35 parts per thousand salinity, and oysters like something, ideally, about half of that. And so, where you will find oysters, in Texas, if you look at maps, is you will find them in a place somewhere between the mouth of the river and a Gulf pass. And it will be somewhere in that zone where the oysters have formed larger reefs over time, because those are the areas where the salinity was optimum for oysters to grow. And the reason they like the moderated salinity is freshwater brings nutrients, which help produce phytoplankton, which oysters feed on.

Bill Balboa [00:31:48] A reduced salinity also helps keep certain predators away, and also helps reduce the incidence of certain diseases that, that will infect oysters and weaken them. It's not a disease that hurts humans. It's a disease of oysters that as they get heavier and heavier infestations, they get weaker and weaker, and they can actually succumb during stressful periods. And so that's a big issue with oysters.

Bill Balboa [00:32:15] So the fresh water, it brings in the food for the oysters. It helps reduce predation from fish and crustaceans and stuff like that, by keeping the water fresher and to a point to where a lot of those predator species, they don't prefer that lower salinity. So that's how the freshwater works in maintaining the health of oysters.

David Todd [00:32:39] Well, that helps sort of set out the, I guess, the mechanics of freshwater inflows and their impact, in turn, on the bay salinity regime, then on the oysters.

You know, just to kind of illustrate this, can you talk a little bit about the, the impact of, of the drought, the really serious drought, that hit Texas about 10 years ago, about 2011, '12 into '13?

Bill Balboa [00:33:08] Yeah. You know, one of the, I was, I was working in Galveston Bay at the time and, and the really interesting thing about it was there were almost no oysters at the large reefs historically that were fished in Galveston Bay, when the season opened. And what was sort of interesting was that unbeknownst to us, meaning the younger generation of Parks and Wildlife biologists, there was a bunch of shell that had been placed in Trinity Bay up near the Trinity River delta by, by someone in the, in the early 1900s, like mid-1900s somewhere in there. The way we found out about that was because all of the, the entire, it seemed like the entire oyster fleet in Galveston Bay was suddenly up in Trinity fishing in an area that was maybe 30 or 40 acres in size, and just in that spot. And obviously they were catching oysters there.

Bill Balboa [00:34:12] So we had to do some digging and we found out from a former Parks and Wildlife employee named Lynn Benefield, who was an oyster manager for a very long time. And he told us about the person that had planted shell there. So what had happened was, was that the oysters in the bigger part of the bay had succumbed to disease or predation or whatever it might have been. And so production was very low in a bigger part of the bay, where the salinity was high and approaching Gulf salinity. But farther up the bay, where there was still a little bit of beneficial effect from river flow, the shell up there had actually produced oysters. So oyster reproduction happened. The larvae set on the shell up there, and since the salinity was good for oyster growth, they grew there. And they were able to do that because the drought was extended for many years, right, several years. And so they obviously had reproduction. And you know, it'll take an oyster about two years to get to a market size, which the drought was longer than two years.

Bill Balboa [00:35:15] So and I don't know if that's real clear, but basically what it is is, is, you know, it demonstrates that wherever the optimum salinity is, if there is substrate suitable for oysters to reproduce on, generally, they will do that. Right? So if there's a moderated salinity zone in the bay and there are shell on the bottom, you will probably find oysters there during the drought. And once the freshwater comes back and the salinity is reduced, the larger reefs will be colonized by larval oysters. And then in a couple of years, you will have adult reproduction again. I mean, you'll have a production of adults suitable for commercial harvest.

Bill Balboa [00:35:59] I don't know if that was very clear, but that's kind of the role of the, the freshwater and the drought effect on oysters.

David Todd [00:36:07] No, that's really interesting. So that was, I guess, the impact of a, of a drought, which I guess is maybe a little bit easier to isolate since it's, you know, you can track the, the weather conditions and all. But, you know, I think another one of the factors I've read about and you'd know a lot more about this than I would, but has been the construction of of dams, you know, starting in the late '50s and then going through, I guess, the early '80s and their impact on freshwater flows, in good times and bad in, you know, flood and drought and all different kinds of conditions. Do you think that there's been an impact seen from those dams on the oyster populations on the Texas coast?

Bill Balboa [00:37:02] Well, I would say yes, and I and the reason I say, "yes", is because, you know, oysters evolved around naturalized flows. And, you know, once you, once you put a dam in a river, then you, and you hold flows back, you have automatically altered the

naturalized, you know, sort of scheme of river flow. And now it's, you know, when we were in the water-planning process, one of the things we were trying to, to mimic was a naturalized freshwater flow regime, you know, which, which would capture, you know, the seasonal rainfall and that kind of thing and try to reproduce that in the bay through a managed flow aspect. But you know what they what they have to do with these dams now is, depending on what they're forecasting, dry conditions and how dry, they will release the water generally in little slugs instead of trickling it over time. So the, the whole naturalized flow scheme of water going down, you know, following the course of the river after rainfalls, or not following it during dry periods, has all been changed. And so, yeah, I would say that dams and water management practices have changed how water reaches the bay.

Bill Balboa [00:38:27] And I mean, you know, one thing in Matagorda Bay that people don't realize is that, you know, Matagorda Bay used to be one large estuary. It wasn't two bays as it is now with east and west portions. And this is sort of tied to the dams on the Colorado because the dams were built to, to perform two functions. One was to provide sustainable water for agriculture, and two was for flood control. And so to deal with floods down on the lower end of the river in the Matagorda area, they dredged a channel across Matagorda Bay and they diverted all of the Colorado River flows into the Gulf of Mexico. And that effectively separated the bay into two pieces.

Bill Balboa [00:39:14] And so, you know, when you look at how freshwater, or the lack thereof, or whether water management has affected oysters in Matagorda Bay, you know, there, there are a lot of bigger issues that happened historically that, that took water away completely. And then in the early '90s, they re-diverted flows into the west part of Matagorda Bay, you know. And so then you add on top of that, you know, dam construction, and then population growth. And so it's layer upon layer upon layer of alterations to naturalized flows. And it also demonstrates the resilience of the Eastern oyster to be able to, you know, come back and maintain a level of productivity that allows for harvesting and ecosystem health.

David Todd [00:40:02] Well, that's interesting how you explain that, just as sort of these layers and layers of interventions and changes and, and how difficult I guess it is to isolate the impacts from, you know, the dams upstream, or the, the channel that goes to the Gulf, or the channel that is rerouted to the western part of the bay. It's, it must be terribly complicated.

David Todd [00:40:30] Well, you know, maybe we could talk about another aspect of, of factors in these oyster reefs, and that's just how tropical storms can have an impact on, on reefs and on those, some of those coastal systems. I think that, that you worked at one point purchasing and sacking oyster shells to plug a washover at Salt Lake between two Texas coastal bays. And I think that is such a cool kind of illustration of the role that oysters can play in protecting and hardening coasts, but also how you can, you know, sort of intervene to do that artificially. And I was hoping you could talk about that experience.

Bill Balboa [00:41:23] Yeah. So, you know, the, the reason for, for actually initiating this project had to do with some damage that was caused by Hurricane Claudette in 2003. And it actually, Hurricane Claudette, had widened and deepened the washover into a small bay, and currents were flowing through that bay with increasing velocity. So we were losing habitat in that smaller bay. It was eroding away oyster reef and shell ridges. It was taking away marsh and seagrass. Adjacent to that bay was another small bay, and it was still intact. But the currents that had been altered in moving through this bay were starting to erode into this intact smaller bay.

Bill Balboa [00:42:15] So a bunch of volunteers here locally and I got together and we bought a whole bunch of oyster shell from a shucking house. And we put the shell in these webbing sacks. So the plan was to build up sort of an artificial reef, if you will, near the area where the little intact bay was about to be breached, the separating land there. And so we, there was, there must have been 40 or 50 folks volunteering on two different occasions, and we sacked a lot of shell, and we basically built the barrier to try to interrupt the current so that it wouldn't either, I don't think, you know, in our mind, we thought we would stop it completely, but we felt like it might slow it down enough until a larger project that is underway right now could address the larger breach that was actually the source of the problem. So we spent the better part of, I guess, all altogether, you know, three or four days sacking shell and in three or four days transporting the shell from a boat launch site in these sacks to stack on the bottom until they got to the water surface in sort of an arc shape in front of this vulnerable area.

Bill Balboa [00:43:39] And, and it's worked pretty well so far. You know, we've, we had a good a good salinity year that allowed for oyster spat, the small oysters, to set on the shell. And so that was good. This last year was very wet. Salinity was very low. So we didn't see much oyster colonization on those sacks. But it was a very rewarding project because I think it's really important for people to get involved, people with interests and people who use the bay for recreational fishing or other things, to help, you know, restore areas that are in jeopardy of being lost. And so that was, it was a very fulfilling effort.

David Todd [00:44:25] That's great, it seems like you accomplish a couple of things there. You actually do something good for the resource, but you also sort of tap that, that, I guess you'd sort of call "latent interest" among volunteers and people who love the bay to actually be able to do something about it. You know, and that's, that's a great opportunity.

David Todd [00:44:49] So I wonder if you can sort of talk more generally about the impact of tropical storms on oyster reefs. I think you mentioned the kind of scouring that Hurricane Claudette had, had brought to the bay. Could you talk a little bit about Hurricane Ike and its impact on, on Galveston Bay?

Bill Balboa [00:45:17] Sure. Yeah. So I, I actually had been transferred to the Galveston Bay system to run that office up there, right about, just before Ike came to visit. And, you know, so what Ike did was, you know, where it made landfall, well, first, let me back up for one second. So Galveston is, from an oyster perspective, it's there's tremendous commercial fishing pressure in Galveston Bay on the reefs that are in Galveston Bay. And the process of harvesting commercial oysters is: oyster boats go out there and they will they will turn in a circle and they drop these iron dredges off the side of the boat. They drag along the bottom. They pick them up. They dump the oysters on the deck. They cull them. They throw the small ones off and they sack the larger ones. And so basically what they're doing is they're removing live oysters. So after many, many, many, many years of fishing, you go from a mound shape to a flat shape, right?

Bill Balboa [00:46:20] And so when Hurricane Ike moved into Galveston Bay, it moved across Bolivar Island and it moved a lot of sediment into the bay. And some of that sediment, because the oyster reefs had been fished down to what some folks refer to as, as a "pancake reef", with no vertical elevation, some of them were completely covered, some were partially covered with sediment. And what that does is the sediment will bury the oysters and they will die because they can't feed. They also can't breathe. Oysters, like fish, take oxygen from the water, and if you bury them under silt, it makes it very difficult for them to either breathe or feed.

Bill Balboa [00:47:04] The other thing it does is it prevents access by larval oysters to the harder substrate that those shells provide, which is how oysters reproduce as I told you earlier. The larvae from around the island for something hard to set on, which is generally shell. So if that shell is buried, those larvae can't set on the shell.

Bill Balboa [00:47:24] So, so you have sort of a double whammy happening. You know, you have an immediate impact to the oysters that are there on the reef by being buried. And then you have a secondary impact with any oyster larvae trying to set will not be able to set.

Bill Balboa [00:47:39] So Ike buried a bunch of reefs and it also brought a pretty good slug of freshwater into the bay, which also damaged some of the oysters as well.

Bill Balboa [00:47:50] You know, oysters will recover from floods, they will recover from droughts. But it's much, much more difficult for a buried oyster reef to become productive again. And that's kind of what, that's kind of what Ike did to Galveston Bay Reefs.

David Todd [00:48:07] So I guess you'd distinguish Hurricane Ike from other sources of big freshwater inflows like Memorial Day, Tax Day and Harvey storms, where it was maybe more about the water and less about the silt. Is that, is that true?

Bill Balboa [00:48:28] Yeah. Yeah. It's um, you know, having lived on the coast for most of my adult life, I've found that all storms are different, you know? And, and you know, speaking of the damage done by Claudette, it was a small Category One hurricane. It completely obliterated an oyster reef just off of Palacios, right? I, I'd always wondered, you know, where and how historic reefs have been, were damaged, you know, to the point where they were no longer productive reefs. And you know, Claudette maybe is one reason, right? So each storm has a character to it.

Bill Balboa [00:49:03] And when Harvey came through this area, I live in the Columbia Bottomland forest, and there was no wind, really to speak of, because it came in down around, around Aransas, Rockport area. Well, what happened here was we had tremendous rainfall, and in the Galveston area too, and that water flowed into the bay and, you know, for the landscape to drain in, for the rivers to go down, it took weeks. And what that did effectively is that it reduces the bay salinity to almost fresh. And if that, that occurs, as Harvey did, you know, during the spawning season, basically, you know, or at the end of the spawning season, or just post-spawn, you kill the next year. You know that, that, that whole spawn, right? You have basically eliminated all those babies from being available two years from then to be harvested. You also probably killed all of the adult oysters as well. So that's, that's what the freshwater part does.

Bill Balboa [00:50:08] You know, if you have a big storm like Ike, where you have the, the storm surge and the wave motion moving loads of sediment, then you have the burying. And you also potentially have the erosive force of Claudette and it just knocking shell over and moving large things. I mean, Ike, for instance, when I drove on Bolivar, it moved very, very large farm equipment very, very far away from where it was parked. And this was pretty far inland. So I mean, the power of water to move things is just almost unbelievable. It's something you have to kind of see for yourself to witness, you know, the ability of it to do that, so you know, you have the force, then you have the salinity reduction. And so, you know, depending on which way the storm comes in, and the size of the storm, you know, and the, and the associated precipitation with it, you know, it's they're all different.

David Todd [00:51:10] Boy. You know, you mentioned earlier about this effort to try to use oyster shell to plug a washover at Salt Lake, and, and I think that the you've worked a lot on trying to figure out how to restore reefs, and then actually implementing those restorations. And I was hoping that you could talk about those efforts. I think that there was one that you worked on in East Galveston Bay from 2007 to '14, and then another one at Half Moon Reef. And I was hoping that you could sort of talk about how those projects were conceived and carried out and what you learned from them as you went along. I imagine it was sort of a trial and error. This is all kind of a new, new exploration.

Bill Balboa [00:52:05] Right. It is. And so, you know, the Half Moon Reef project was probably the first on the Texas coast of any scale. You know, in the '60s, they would chain tires together and other things like that, throw them into the water, you know, with the hopes of creating more oyster habitat. And what they found was storms would move all the chained tires up onto the bank or into shallow water area or bury them, right? So I mean, that kind of relates to the previous question.

Bill Balboa [00:52:35] I got involved with oyster restoration through a friendship I had with a guy that worked for the Nature Conservancy named Mark Dumesnil. And, you know, back then, I guess, 2005, somewhere around there, oyster reef restoration had taken off as, as a restoration technique on the East Coast, Chesapeake area and stuff. It was just coming to Texas. I don't think Texas had really gotten into the restoration game yet. And so we, we were looking for areas, my friend at the Nature Conservancy and I, to build a reef in Matagorda Bay. And we found one, which was an old historic oyster shoal that had gone away. As I said, you know, where do they go? You know, maybe shell dredging? You know, they used to mine oyster shell out of the bays to use for roadbed and use for livestock feed and other things. And so maybe that was part of it. You know, maybe Carla or maybe, you know, hurricanes that followed, maybe river diversion and salinity changes. Nobody knows. But this reef that was so large that it was a navigation hazard and had a lighthouse on it in the early 1900s, was no longer there.

Bill Balboa [00:53:54] And so when we're looking for a site. I recommended the historical location of this one large oyster shoal - Half Moon. And so it took him about seven years to get all the funding and everything together, but I believe they restored, the Nature Conservancy restored, about 40 acres of reef. And they used it. They were started by building with large pieces of limestone or large pieces of concrete so that it would be a resilient structure to other storms, because it is in a, in an area of the bay where it is somewhat exposed to a fetch-driven waves and things like that. So that was a large restoration project, and that was in Matagorda Bay. That was Half Moon Reef.

Bill Balboa [00:54:45] That was my first exposure to, you know, how reef restoration can be done in Texas. When I transferred to Galveston, Texas Parks and Wildlife was also beginning to show interest in restoring oyster reefs, and they, they identified a spot in East Matagorda Bay. Their restoration goals were somewhat different than the Nature Conservancy's. The Nature Conservancy weren't so concerned with making Half Moon Reef a commercially available or harvestable reef. And because you can't dredge on large pieces of rock, you'll lose your gear. It just won't work.

Bill Balboa [00:55:24] Parks and Wildlife, though, was one of their goals was to actually make it a commercially fishable reef, once the oysters had colonized the area and had grown to a marketable size. So when they built their reef, it was about halfway down the length of East Galveston Bay, and I think it was also somewhere 20 to 40 acres. They used smooth river

cobbles that were probably two to three inches across, and they dumped those down into East Galveston Bay. And so I, you know, I helped monitor that by pulling some dredges and looking at how quickly the oysters were setting on the rock, trying to figure out how many oysters were sitting on each little rock and trying to determine how successful the reef was going to be.

Bill Balboa [00:56:13] And so those are my, my first experiences into, into reef building, you know, with, with one with the Nature Conservancy and one with Parks and Wildlife. And both of them were quite successful in their own right, given the goals that they had set.

David Todd [00:56:37] So one of the thing that I was sort of struck by, is, is that these oyster reefs restorations weren't just seen in isolation as an effort to bring back a resource for itself, but also to see what sort of success or interest you might be able to generate among the anglers and oystermen who would later maybe visit that reef. And I think you did a socioeconomic study of Half Moon Reef that came out in 2016 where you looked at how people interact with these reefs after they're restored. Can you talk a little bit about what you discovered?

Bill Balboa [00:57:27] Sure. Yeah. So the sort of the, the impetus for doing that survey, I was once again, you know, I was in discussion with my friend at the Nature Conservancy and one of my big interests with building Half Moon Reef was, you know, would it actually show, would anglers be catching a lot of small male trout, legal, but small, on that reef, as they had been doing in East Matagorda Bay on the other reefs that had vertical, you know, relief from the bottom? And that was a question I had. So as we moved forward after completion of the reef, we, we found some funding to do an angler survey, which we borrowed heavily from Parks and Wildlife's survey protocols. And so we conducted, I think it was probably a six-month angler survey at the Matagorda Harbor, which is one of the largest boat ramps in our area and talked to anglers about, you know, their knowledge of the reef, and, you know, did they find it a successful fishing area?

Bill Balboa [00:58:37] And generally, the overall impression for the reef was, particularly amongst the guides, you know, they found it very successful. They would take clients there when weather permitted because, as I had said, it's in an open, exposed area. So in the spring, prevailing winds can be pretty brisk. So during those spring days when it's calm enough for them to actually fish on Half Moon, they're doing really well on spotted seatrout, very similar to what they did in East Matagorda Bay, those other reefs. So it's performing and functioning just like the reefs in East Matagorda Bay. It's holding those trout in the spring and the, I think the most exciting part of the whole restoration was the guides saying, you know, "When are you going to do more," right? "When, when are you going to do more restoration? And could you do them closer to the boat ramp this time? Because that's a bit of a run, you know, for us to go. We'll still, we'll still keep going. But it sure would be nice if there was more of these restorations done like this, so we could fish them."

Bill Balboa [00:59:41] So it was it was a huge success there as far as recreational anglers. And just to, sort of, you know, when it was first built, those reefs are right at the water surface, the crown of the reefs are. Two outboard motorboaters, fishermen, had hit the reef with their motors. And they were talking to me about how can we get money from the Nature Conservancy until people realized that there was a lot of fish on the reef. Once people realized there were fish on the reef, there were no more calls about damaged lower units or outboard motors. Nobody cared at that point. You know, it was all about the fishing. It was fine if you damaged your motor because you know that was the price you paid to get to fish these reefs.

Bill Balboa [01:00:31] It's a really, it's a really neat thing that happened out there.

David Todd [01:00:37] That's great. So it's interesting to me that that of, you know, you build it and they came. And you built it, maybe for the oysters, you know, in an immediate, kind of direct sense, but they, they also pulled in these other ancillary creatures, all these spotted seatrout? Well, nice.

Bill Balboa [01:00:59] Well, you know, speaking of, of how these reefs get used. I was wondering if, during your multifaceted career - you, you know, you were at Texas Parks and Wildlife, and the Extension Service, and the Matagorda Bay Foundation - I wonder if you've had a chance to talk to people who have operated in the wild oystering business, you know - the oystermen, and the marinas, and the dealers, and maybe some of the restaurateurs? You know, it's been such a wild, roller-coaster ride for this industry, I was curious if you've learned much from conversations with these people who've ridden it out.

Bill Balboa [01:01:43] Yeah. The oyster industry in Texas is really interesting because there are some, you know, in Galveston Bay, the oystering is a little bit different. They have oyster leases there, which are, provide some, the people who have the leases there, to exclusively harvest reefs that they have built. But they're also able to harvest the public reefs that are open to all folks. And so those folks have made a really good living for themselves, and that program was only open in Galveston. So there is sort of a group of wealthier, more powerful oystermen in the Galveston area.

Bill Balboa [01:02:20] But what's happened over time is, you know, the oyster fleets have become more mobile. And so they will actually move up and down the coast, you know, because as we as we discussed earlier, you know that one bay may have a good year while another bay has a bad year. And so what that's done with these guys, it's really increased competition. And so there's a lot of discussion amongst the oyster people about, you know, "this is my bay, not your bay," right? So people are, the competition has gotten to the point where there's, there's a little bit of animosity between, between fishing groups. And, you know, they believe that the, the larger fleets moving into their area, say, for instance, the larger fleets from Galveston all coming to Matagorda, you know, the few Matagorda oystermen that work down here feel like that's not fair.

Bill Balboa [01:03:08] And so that kind of situation and mentality is getting more and more prevalent as time goes forward because these fleets are moving back and forth, you know? And groups like CCA are seeing it, and they're really trying to work hard to try to figure out ways to work with Parks and Wildlife, to try to understand why that's happening and address whatever's driving, you know, this rapid movement of the fleet back and forth. Because when all of the fleet exerts its pressure on a small bay, or in a small area of productivity, they do a lot of damage to those reefs.

Bill Balboa [01:03:47] And you know, I buy wild seafood products, you know, but I think that there has to be a more sustainable way to do some of this. And I think, you know, oysters are very popular. And I think the market, you know, will take care of, you know, some of the management that may need to be implemented, you know, because the demand for oysters is not going to go down. People like to eat oysters. And so I just think that, you know, maybe we need to step back and look at what's happening right now, how the fishermen are working, and what we can do to potentially manage and sustain the oyster fishery a little bit better these days.

David Todd [01:04:29] I've been interested following, just as a kind of layperson, the efforts by Texas Parks and Wildlife to, to reduce the fleet, to sort of lower the, the capital intensity of all the, the boats and tongs that are out there on the water. And I was hoping you could sort of talk about some of those efforts to try to reduce that pressure, reduce the size of that fleet.

Bill Balboa [01:04:59] Well, so there is a moratorium on oyster licenses. They no longer, Parks and Wildlife, there is no commercial fleet, commercial fishery in Texas in the coastal waters, where you can go to Parks and Wildlife to buy a license to become a commercial fisherman. So and they call that a limited entry program. So if, if you want to become an oysterman, you will have to find an oysterman who wants to sell his oyster license and buy it from him. Right now, that's probably not going to be too successful because, you know, oystering has been pretty lucrative and people have made a lot of money off of it.

Bill Balboa [01:05:37] Some of the other things Parks and Wildlife has, have done, are they've reduced the number of sacks and the number of days or the hours the oystermen can fish. They've closed certain bays to fishing altogether. When oysters and some of the larger bays, due to flooding in Harvey and some of those other things, have been heavily impacted, you know, commercial fishermen are very creative and what they ended up doing was they, they started going to reefs that were on the shoreline in knee-deep water and picking up oysters by hand. And that was something that we had never seen really, to any degree on the Texas coast. And so Parks and Wildlife saw that, and they were able to, they were able to sort of stop that by saying, you know, you can't harvest oysters within 300 feet of the shoreline.

Bill Balboa [01:06:25] And so they've made those changes, and they've also implemented a program, I believe they call it their stoplight program, where it reduces or stops oyster harvest on reefs, where a preponderance of oysters are under the legal size. And so that's one of the ways, the one of the ways they've reduced fishing pressure on the oyster harvest.

Bill Balboa [01:06:48] The only downside to one of those, which is a stoplight program, and this is my personal opinion, is that it creates that situation where the fleet will move. If one area that has been productive is suddenly closed because the preponderance of oysters are smaller, and there's another area somewhere down the coast like, say, they close an area in Matagorda Bay, but Rockport or Copano still has a lot of oysters, all of the boats that were fishing in Matagorda Bay are going to go down to Copano and fish down there. So it creates sort of a, what they call a, "derby fishery" scenario, where people are rushing to this place to get oysters and rushing back.

Bill Balboa [01:07:27] But, that being said, you know, trying to manage these kinds of things with all of the environmental variables that affect oyster health and oyster growth, it is a daunting, daunting task. And I would say that, that, you know, not because I work with Parks and Wildlife, but just because, you know, I, I know the long history of what they've been doing and they've been managing these fisheries for years. And I think they've done a really, really good job. And I think that they will find a solution and, and implement that solution somewhere here in the near future.

Bill Balboa [01:08:02] Well, and I think I've read that one of the solutions, or at least sort of, you know, a partial answer, to reducing the pressure on these wild oyster populations is to try to develop some sort of oyster mariculture in Texas. And I think that that you worked with Dr. Joe Fox in trying to further that effort, and I hope that you might be able to talk about that effort.

Bill Balboa [01:08:30] Yeah. Five or six years ago, when I was with Extension, I met Dr. Fox and through a Parks and Wildlife colleague, Shane Bonnot, who is now, I think, he works for CCA now, and, and we started talking about oyster farming and we were sort of bantering back and forth about, you know, why is Texas the only state that doesn't have an oyster farming industry? And so we started talking to people and I helped organize a bunch of meetings with oyster industry stakeholders, the dredge fishermen, to see what they thought about it and would they support it. And they started moving forward. And Dr. Fox, you know, with help from a restaurateur down in Corpus named Brad Lomax and some other folks, you know, we initially worked with Senator Bonnen, who became Speaker of the House, Bonin, who was excited about this bill. He passed it on to, oh, I can't remember, a senator from Corpus, the state representative in Corpus rather, and he carried it on - Hunter, Todd Hunter. And so that moved forward through the Legislature.

Bill Balboa [01:09:49] And, you know, right now, it's, it's in its infancy. There is a facility in Palacios. It's going to start spawning oysters soon. It's an HRI facility - Harte Research Institute / Texas A&M joint venture And they're trying to build up this facility as a resource for oyster farming, to spawn oysters, to show people proof-of-concept, to help guide them in the oyster farming process. And you know, I think there's a future fortune out of the oyster farming industry won't replace the wild fishery, but what it will do it was it will, it will provide a product to a boutique market for half-shell oysters. And I do think that, you know, working with that and some other, you know, potential options for, you know, oyster harvest in Texas bays, you know that it will help to relieve some of the pressure that we're seeing in Texas on the wild reefs.

David Todd [01:10:51] So it's, if I've got this right, it sounds like the wild-caught oysters and then these mariculture oysters might be serving two different industries. And they're not parallel, but, but there's not a huge amount of overlap. Is, is that right?

Bill Balboa [01:11:11] Yeah, that's correct. You know, the amount of labor and time you have to put into farming an oyster - to take that oyster and send it to a shucking house and have it shucked and used for frying or something like that, you would never make the money that you need to make to have a successful oyster farming industry. So for an oyster farmer to make money, you know, it's almost, you know, they almost have to create an appellation like you would a wine. You know, the oysters are grown in a certain region. They will have a certain flavor, a certain character. And it has to be marketed in that way.

Bill Balboa [01:11:45] So you're right, it's going to go to two completely different places. You know, the buyer who's buying a farmed oyster is going to be looking for a very, very high quality half-shell product that is presented in a certain way, you know, as opposed to, you know, the wild-caught oysters that are generally used for, or a lot of them, are used for, for shucking and for other oyster products. Now that's not to say that wild-caught oysters won't still be used on the half-shell market, but, you know, given current restaurant trends and things like that, those farmed oysters are really, really growing in popularity all around the Gulf Coast and the Eastern Seaboard and even on the Pacific side. So, so yeah, it's going to be two different markets, I think.

Bill Balboa [01:12:38] I see, you know, looking at your long career on the coast, it's, it's really striking how you have worn many hats, you know, whether working for Texas Parks and Wildlife, or for AgriLife, or most recently for Matagorda Bay Foundation. And, and I was

wonder if you could talk about the different roles that each of these institutions plays on the coast in general, but also in particular, you know what each can do uniquely best for oysters?

Bill Balboa [01:13:21] Sure. So, you know, Parks and Wildlife, you know, they are, they are the state agency that's mandated to prevent depletion and waste of coastal resources. And so they are, they are the regulatory body that will manage the fishery to, to achieve those goals, to prevent depletion or the loss, you know, or you know, of a particular fisheries product. And as I said before, that's a difficult thing to do, but they're doing it. So their, their job is primarily regulatory. And in that regulatory sort of framework, they have also sort of expanded into enhancement and restoration as well.

Bill Balboa [01:14:10] Texas Sea Grant and AgriLife Extension, they're looking at providing people like oyster farmers or industry members with science to help them become more efficient at what they're doing, to provide them with the business science that they need to perhaps become more profitable, or the fishing science, or the farming science, like with oyster farming. AgriLife, A&M Sea Grant and AgriLife are working really hard to try to show people, you know, the benefits of wild seafood, but also the alternative ways to farm oysters and the different gear types and things like that. They've been very, very involved in the, in the Gulf shrimp industry in Texas as well, looking at turtle excluder devices and bycatch reduction devices and things like that. Ways, ways to make the fishery more efficient, more profitable.

Bill Balboa [01:15:04] I worked for Parks Wildlife, as I told you, because you know, I, I got into it for one reason, but I fell in love with the Texas coast. I got the job with Texas SeaGrant upon retiring because it brought me back to Matagorda Bay. The reason I came back to Matagorda Bay was, was for a very specific reason. And that is because, to me, Matagorda Bay is the forgotten bay of the Texas coast. Over, throughout my career, conservation dollars were being spent, you know, protecting resources, oysters included, in Corpus Christi Bay and Galveston Bay and all. And, and the primary reason behind that is they have, they have, they are part of the estuary program and they have robust foundations and a lot of advocacy. So the chance to come back here and try, trying to elevate Matagorda Bay and to, to the public, to raise awareness of the issues that we face being connected to Austin through the Colorado River, Some of the impacts it was having on oyster reefs and bay productivity overall, was why I came back with Extension.

Bill Balboa [01:16:21] When I had the opportunity to go to the Foundation, I did that because the Extension and AgriLife and Sea Grant are not advocacy organizations. They are the purveyors of science to industry members. And so being with the Matagorda Bay Foundation has allowed me the latitude to vocally advocate for, and openly advocate for, resources to help protect Matagorda Bay and the oyster resources here, and the wetlands, and all the fisheries. Because, you know, oysters are very, very important on the Texas coast, as I said, especially on the Mid and Upper Texas coast. But you know, they are, the oysters, and the marsh wetlands, and all the other habitats are all tied together in a very intricate way, you know, that, that is, that provides, you know, Texans ample opportunities to fish. You know, they help, they help protect our shores, all these habitats do. They help keep the water clean, they sequester carbon. So they do all of these things for us. And, you know, and I want to be able to, at the Foundation, you know, help Matagorda Bay get the attention that I think it deserves, bring it equal to Corpus and Galveston Bay.

Bill Balboa [01:17:39] And so, you know, you have Parks and Wildlife regulating, you have Sea Grant and Extension providing information to fishermen so their industries can be more

profitable, and they can understand new gear techniques. And then the Matagorda Bay Foundation is here strictly to advocate for bay health of the natural resource, you know, so that, you know, we can sustain wise use and make people aware of the value of, the beauty of the bay.

David Todd [01:18:09] Well, the bay is lucky to have you.

David Todd [01:18:14] Is there, is there anything you might like to add? You know, you've covered a lot of ground here, from one end of the coast to the other, and, and all the different aspects of oyster reefs, whether it's, you know, their ,their sensitivity to, to inland floods and storm surges and overharvest. But is there any sort of, I guess, top view that you could give us of your work there on the coast, in particular with oysters?

Bill Balboa [01:18:50] Yeah, I think that is that we are all connected in Texas. You know, the Colorado River goes all the way over to Lamesa, you know, clear across the state, over to the desert, right? And what I think Texans need to understand is that, is that what you do in Austin, or what you do above Austin, or below Austin, affects everything downstream. And so I think what's most important for us to understand as Texans for the health and the vitality of all of our natural resources, and for Texans themselves, and for the oysters, is that we are all connected, and we share these resources. And so I think it's really important for people to understand that we are connected and that we do share these resources and that we all have a responsibility to use them wisely, and understand that we share them, and that there are multiple uses and benefits all up and down all of these massive watersheds and these beautiful areas in Texas. And so I think that's something that's critical that we understand, as we move forward into the future and start facing some of these things like sea level rise and climate issues and stuff like that, because it's just going to make management and that much more difficult, and it's going to make restoration more challenging.

Bill Balboa [01:20:11] So I think Texans need to sort of come together and understand we are connected by all of these diverse natural areas and we need to learn to share them.

David Todd [01:20:21] Well said, it's really wonderful the way you, you connect all these different places, and, and resources, and people who, who enjoy them and use them.

David Todd [01:20:33] Well, this has been really nice, Bill, and I, unless you have anything to add, I might just say, thank you for your time.

Bill Balboa [01:20:44] I do not and I really appreciate the opportunity to, to speak with you.

David Todd [01:20:50] Well, it's been a pleasure and I learned a lot, and thank you again for participating in this oral history project.

Bill Balboa [01:20:58] Well, thank you very much.

David Todd [01:20:59] OK, well, you have a good day and I hope our paths cross soon.

Bill Balboa [01:21:03] They will. Thank you very much.

David Todd [01:21:05] All right.

Bill Balboa [01:21:06] Bye bye.

David Todd [01:21:07] Bye.