

TRANSCRIPT

INTERVIEWEE: **Deyaun Boudreaux** (DB)

INTERVIEWERS: David Todd (DT)

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Please note that videos include roughly 60 seconds of color bars and sound tone for technical settings at the outset of the recordings. Numbers mark the time codes for the VHS tape copy of the interview.

DT: My name is David Todd. It's February 24, in the year 2000 and we're in Laguna Vista, Texas. And I'm representing the Conservation History Association of Texas and have the good fortune to be visiting with Deyaun Boudreaux, who is the Environmental Liaison for the Texas Shrimper's Association and has been an environmental advocate and authority down here in South Texas for many years. And I want to thank you for spending some time with us.

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DB: It is my pleasure.

DT: Thank you. I thought that since we'll be discussing shrimp and shrimping and a lot of other aspects of shrimp, that we should talk about shrimp's ecological world in the bays and gulfs of Texas.

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DB: I suppose that the biggest job the shrimp have in the Gulf of Mexico is that of forming the keystone of the food realm. They are crustaceans with a life span of twelve to fifteen months. The three major offshore species are all nursery-dependent. There is one species of shrimp called the Royal Red that completes its entire life cycle in the deep ocean but the other species, which would be the brown shrimp, the white shrimp and the pink shrimp, all start life in the deep ocean, are washed into the bays and nurseries, sounds and estuaries all around the Gulf rim and spend several months in the nurseries and migrate back out to the deep ocean to complete their life cycle of twelve to fifteen months. Everything below and above them on the food web is affected by the fate of the shrimp.

DT: What sort of predators feed on shrimp?

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DB: Well everything from the whale to a trout. There have been some studies done on the near coastal fish that are some of the favorites of the—the recreational anglers, and in a big redfish, for example, there may be as many as eighteen shrimp when their stomach contents have been examined.

DT: What do the shrimp feed on?

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DB: The shrimp like live food. The shrimp, during their nursery life cycle, when they adhere to the blades of sea grass, feed on the microscopic life, mostly animal life, that would be on the blade of the sea grass. They don't actually eat the sea grass but they eat what is living on the sea grass. As they proceed through their metamorphosis into juvenile shrimp, they

go to the bottom and what they like most would be animals smaller than they are. They actually pick up their food with their—with their walking legs and take bites of it until it's gone. They have two different sets of legs. They're decapods. They have ten—ten legs. But they have walking legs and then they have swimming legs. And they use their walking legs to feed themselves. So they eat live fresh food.

DT: Give us a little brief history of shrimping as you understand it.

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DB: Well there has been a shrimp fishery in the Gulf of Mexico since the 1800's. Here in Port Isabel right after the Republic of Texas was founded, some people came from New Orleans down here to set up shop and start the economic development of this part of the world. One of the first persons to come was a gentleman who came from Mallorca(?) by—he came to New Orleans and from New Orleans, here. He set up a seafood company. They harvested the shrimp here and shipped them in bait wells to the New Orleans market. Back in those days, the shrimp fishing that was done, was done in the coastal areas. The deep shrimp harvest area—the deep shrimp harvest areas in the Gulf of Mexico – were not exploited until after World War II when a technology—a technology was developed.

DT: When they were shrimping in the bay, I understand that they sometimes used horses?

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DB: They really shrimped in the Gulf waters with the horses and, of course, they would have been shrimping the white shrimp, which are a species that's active during the daytime. And the—the horses would walk along the beach and drag the trawls through the water and capture the shrimp. That was, of course, much before they started harvesting shrimp offshore in the deep Gulf.

DT: Maybe you can tell us about the deep Gulf shrimpery?

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DB: Yes, prior to World War II, there was no technology that allowed the exploration of the deep Gulf waters for shrimp. All of the shrimping was coastal, either in the bays and estuaries or in the near coastal waters. But after World War II, the otter trawl had been developed and the otter trawl is the trawl that is used today. It seems to be the perfect answer for a sustainable fishery because it doesn't fish that hard. What we mean when we speak in the fishing world of fishing hard means it catches everyone. When you have gear that fishes hard, you're not letting much go. The otter trawl does not operate that way. The way the shrimp fishery has been sustainable off the Texas coast is we've never tried to make the gear fish harder. What we've tried to do is make the gear efficient but leave enough shrimp so that we're not harming the parent stocks, so that we have enough for a sustainable fishery. The thing that's the make or break with a shrimp fishery is the condition of the nurseries because, in the micro layer where the—where the shrimp starts life after the eggs rise to the top and—and—and turn into what's called nauplii which is a— a larval stage that pushed by the currents into the nurseries. Well that's where they're most vulnerable and present in the greatest number. So if you have good weather, clean water, plenty of sea grass, you'll have a good crop of shrimp. They start arriving in the Texas nurseries around February and the first waves of migration into the Gulf of Mexico will start sometime toward the end of May or in June. They stay near the coast, I would

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say within six miles of the coast, for approximately three weeks and that is the one and only breeding season for the animal. The eggs won't be laid for months but the animals have

their encounter for reproduction during about three-week period of time after they first go into the Gulf. We're closed for two hundred miles during those forty-five days when the scientists tell us that the shrimp are present and breeding. In the middle of July usually, they've started to migrate offshore into the deeper water. They grow very, very quickly. They—when they pass through the thermal clines, it causes a change in the body and they develop a sweet taste, it causes a sugar to develop in the shrimp and that is when we're allowed to harvest. Most of the offshore harvest takes place in water deeper than ten fathoms which would be sixty feet and deeper up to about a hundred feet. The otter trawl does not drag the bottom. It is not a balloon net that goes from the outer rigger of the vessel to the bottom. What it is is it—it is a flat net that is designed to ride about eighteen inches off the bottom of the Gulf and it has a chain that hangs down the mouth. There is, of course, a cable through it to give it the stiffness that it needs and it's held in trawling position by two wooden structures called doors. The doors open the net so as the nets are put out, the—the skill of the captain is to go at the right speed so that these things open and settle. Now the doors have a shoe and that is a metal edge. That's the only thing that touches the Gulf, the bottom of the Gulf. I've been to the bottom of the Gulf in ten fathoms of water, right out here when I did my checkout dive for scuba. I've seen what it looks like. I know where the shrimp live and because I've seen that, I think I understand what the impacts of the trawling would be more than someone who's never seen the Gulf bottom, you know, live and in person.

DT: Do you think there is much damage to the Bay or Gulf bottom from shrimping?

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DB: Well...

(misc.)

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DB: I don't think we're really doing that much damage. If you look at the Gulf and what is actually trawlable, you will find that there are 35,000 obstructions to trawling in the Gulf of Mexico. And a 7,000 mile—square mile dead zone plus there are all kinds of areas that are restricted from trawling. There's a three-mile radius around every man-made platform. There is no trawling in the shipping lanes that lead into our ports and harbors.

(misc., phone ringing)

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DB: Yes, first of all we need to look at the Gulf of Mexico as an entire system. Then we need to look at just exactly what is trawlable bottom. Trawlable bottom is probably going to be less than a hundred feet deep, there around a hundred feet deep and sixty or more feet deep. So there—you'll find a great deal of the Gulf that would not even be trawlable just from where the trawler could reach.

DT: Too shallow or too deep?

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DB: Right. Then you would look at all of the obstructions. Some of them are natural. We have areas called the rocks. We have areas called the shell ridges. And then, of course, once you get past a certain depth it goes off into the continental shelf that drops off and we're not trawling there because it's way, way too deep. And then there are the airplane wrecks from all of the years that the Navy trained out of Corpus Christi. We have all of the shipwrecks going back from the beginning and these man-made obstructions, these accidents, if you will, are called hangs. Well all of those are non-trawlable. There are

radiuses around each man-made structure in the Gulf.

(misc., phone ringing)

DT: So could you continue about how much of the Gulf is being...

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DB: ...not reachable by the trawlers. We have a huge dead zone. It's apparently a natural thing that used to develop in August and September almost every year because of the climate and weather but now it seems to have become a fact of our lives. It's with us at all times and it's caused by some materials that are—are being fed into the Gulf by the Mississippi River that prevent it ever from regaining its ability to be oxygenated.

DT: Is it fertilizers and...

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DB: Fertilizers and other nutrients. You know, we have quite a bit of—of poultry culture going on upstream and that's also classified a nutrient (?) into the ocean. There's a—a dynamic going on in the Northern Gulf that's causing this. When the petroleum industry began developing as early as the 19—late 1940's, the Corps of Engineers permitted a lot of dredging, dredging of channels so they could get into the shallow areas to drill. Well that caused salt water intrusion. When the salt water intruded in formerly brackish areas, the plants that need fresh water began to die. Once the root systems of the plants began to give way, then the earth started to slough off and the waters that run over from the annual floods were coming in carrying their load. Used to be a lot of the nutrients and fertilizers were uptaken by the marsh plains. But as the marshes have disappeared because of the salt water intrusion caused by over-channelization, we have this—this phenomenon going on, if you were to see the changes in the bathymetry of the wild of the Northern Shelf, it would look as if the Northern Shelf is sloughing off but actually what is happening is—is there's this tremendous load of soil that's transported by the Mississippi River is now coming straight into the Gulf unfiltered. And this is contributing to this—the permanence of the dead zone.

DT: I see.

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DB: I would say that if—even if you don't look at just how much is trawlable and how much would even be exposed to trawling, the other thing would be to go and look at—at the work that Texas does. Every fifty years, Texas conducts a census of the species in the Gulf of Mexico, off our coast, because we have a territorial sea. The last time it was done was 1992 and the species numbers were in better shape than they were in 1942 so I don't think the shrimping is hurting it. Now that's my personal opinion. I believe the system has maintained its productivity that could have been affected by the trawling. And I like to think that the presence of the shrimp fishery and the work that Texas Shrimp Association has done to protect the nurseries of the valuable fishery resource asset has helped all of the other animals sustain their numbers and maybe even improve.

DT: Can you talk about a controversial issue—some people charge that shrimping damages the turtle populations and do you think there's truth to that? What do you think about the TED's, the Turtle Excluder Devices that are installed on shrimper's nets?

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DB: The net / sea turtle interface depends upon what species of turtle and where the net happens to be. The first problems that were documented that were a sea turtle / net interface situation developed off the coast of South Carolina, Georgia, and basically in what

we call the Southeast Atlantic. They have loggerhead turtles and green turtles that nest there. There are five species of sea turtles but the loggerheads and the greens use those coasts. They have more of a coastal fishery than we have in the Gulf of Mexico because they're sitting right there on the Atlantic Ocean. As you come around Florida, you'll find that there is some loggerhead and—and green turtle nesting that goes on in Florida and maybe even a little bit up as far as Alabama. Then it's not conducive off Mississippi or Louisiana and the next place that's really conducive for sea turtles nesting is the State of Tamaulipas about ninety miles south of here and that goes all the way down to the Yucatan. There are reasons for this. There's an interplay in the currents that are driven by the Atlantic Ocean and how they act in the Gulf of Mexico. Have you ever noticed that the Gulf of Mexico is kind of round? Did you know that the Gulf of Mexico spins counter-clockwise in its center. It has—I call it a gyre. Oceans have a gyre which is their deep ocean motion, if you will. Now as the seasons change in the Northern Hemisphere and the Southern Hemisphere, we'll have a waxing and waning of the two Gulf coastal currents. And the one that's strong is the one that's been in summer and they'll be just the opposite when it's winter. In the Northern Hemisphere, the strong current is the current called the Gulf loop and that's the one that's driven by the southern ocean because while we've been cooled off, they were heating off. When we started heating up, that current has been, for six months, heating. So the current that comes by

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the Texas coast enters the Straits of Yucatan bringing the Caribbean waters, the warm Caribbean waters and hurricanes. Also bringing us our tropical species like the shrimp. That's the current that keeps the population of shrimp between Tampico and Corpus Christi. Okay. That current comes up and then goes out the Straits of Florida. The other current, the one that heats up in the winter, is the Gulf Stream and everybody knows about the Gulf Stream. It comes in from the Atlantic, sweeps down the Carolinas, around Florida, into the Gulf and it bumps into the Gulf loop. Now that play is anywhere from the other side of the mouth of the Mississippi where the toe of the Louisiana is there, all the way down to off the mouth of the Rio Grande. You can see how this works. How in the world could a sea turtle nest in those upper reaches when that other current will come and push it back down? If you plant a turtle or if a turtle plants itself too far north, it gets on the wrong current and instead of making the trip around Cuba and back in, it's going way out in the North Atlantic. Hence, some of those head start turtles—the tagged turtles have wound up in Ireland, Morocco, France, airlifted back. Waif populations have established themselves as far north as Maine. These turtles are tropical animals. There was never a record that we had a nesting population of Kemp's Ridley's on the Texas coast. When you learn about the oceanography of the Gulf, you can understand how the populations of turtles developed, where, because the turtle can't feed in deep water. He's an air-breathing animal. He needs to be able to be on the top and then since he has lungs, there's a limit to the diving. Now they—in cold-stunning situations, they can go into sort of a shock and a hibernation and stay down for quite a while because they are cold-blooded and they've been known to do this in the Atlantic Ocean, you know, during cold spells when they don't make it offshore far enough to stay in the warm water. So it—it isn't that they can't stay alive but, the studies that they've done on the turtles here on the Texas coast, all the way to Florida, with releasing a turtle on the jetties at South Padre Island. They released a female turtle with a tracker on her and it took her eighteen months to get to Key West and she never was over

three miles from the coast. We now

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have satellites that track the—the tagged turtles. And they usually do not get out past six miles. There was one—one that did and it swam around a platform for several days and then went back inshore. But the two—the Kemp's Ridley is a—a—a turtle that—it's a carnivore. The green is strictly an herbivore but the Kemp's Ridley is a carnivore and its most favorite food is crab. Its second favorite food is shrimp. So the only time that there would be a turtle / net interface is usually in more shallow water when the turtle might be eating shrimp. Otherwise, there's really not that big a chance for the turtle / net interface once you get out into the deeper water because—we didn't know this in 1986. We didn't have the satellite technology. We didn't have the transmitters implanted into—in—in—into the animals' shell so that they could be tracked by satellite and really see what they're doing but we have this information now. What we're spending our time doing is building up the protected area of nesting of the Kemp's Ridley because we believe that that is the life stage that's most vulnerable. The Kemp's Ridley is different from other sea turtles in that the Kemp's is the only one of the five that will nest during the daytime. This makes it much more susceptible to predation by the raccoons and the gulls and all of the other animals that will watch the turtle nest and then immediately go and plunder the nest for the eggs.

DT: So...

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DB: One of those predators is man.

DT: The shrimpers have been involved in trying to protect Rancho Nuevo, the nesting...

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DB: Yes...

DT: I see.

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DB: ...with the National Fisheries Institute. We've built some quarters down there. We've bought several vehicles for them at \$4000 each so that they can expand their coverage and we've even had some people who are members of the fishing community put some money together and go and buy some land so that Pat Burchfield could expand his protection of the nesting grounds.

DT: What do you think about some of the other efforts to try and protect the turtles and one of which is to try and ban shrimping from near shore areas and across the Texas Coast?

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DB: Well there's already that protection in the system that we have. The system that we have is set up by the Endangered Species Act, it's set up by Congress. And Congress in the law acknowledges what the Department of Commerce, what information was provided by the Department of Commerce which is all of the fifteen activities of man and including shrimping, that have an impact on sea turtles and their survivability. Okay. The user groups in the Gulf of Mexico that need to be worried about the numbers of sea turtles and modify their habits, are the shrimp fishery, the energy people and the Corps of Engineers. Within the—the Endangered Species Act is a section called Section 7 that recognizes the legitimate uses of the ocean. The legitimate uses being: food for man which is the highest and best use of the ocean, activities of transportation which, of course, is maintenance of waterways and harbors, and since the 1940s, offshore mineral exploration and exploitation which, of course, involves seismograph, drilling, occasionally there is some type of leakage that is

harmful to marine life and then platform removal. In order for the legitimate activities of the ocean to go on, not just by our country but other countries as well, this Section 7 allows National Marine Fisheries and National Oceanic and Atmospheric Administration to determine a level that is compatible with sustaining the populations of turtles. The shrimp fishery has a Section 7. The Corps of Engineers has a Section 7 and Oil and Gas have a Section 7. The instant the stranding numbers exceed the Section 7 acceptable level, which will maintain the populations, the closure is automatic. So there's no point in adding another layer of bureaucracy onto that especially if it will wind up taking part of the ocean's protection away. We sustain

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ourselves and our ability to do the environmental work because every pound of shrimp that's processed is assessed a cent and a half. That goes to run our association which is required by law because we're harvesters of the deep ocean. If you're a harvester of the deep ocean, it's not a free ride. You are obligated to do the work to protect the habitat of the species throughout its range. If we're there, we can do the job. If we're not, we can't.

DT: What do you think of the function of these Total Excluder Devices? Do you think they work well? Are they dangerous? Are they expensive? Do you lose catch?

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DB: We're required to have Turtle Excluder Devices in our nets and we believe that they exclude turtles. They were originally developed as a Turtle Excluder Device because the shrimp fishery wants a clean catch. There is good reason to exclude everything but the shrimp. If you're catching a lot of shrimp and you have things other than shrimp in your net, it can lower the quality of the shrimp naturally because they're so delicate. They can be broken or otherwise damaged by too much of other things that you don't want. So we're all for efficiency in the trawl. The original Excluder Devices basically excluded cabbage-head jellyfish because, at different times of the year, there would be too many of them and be impossible to pick up the net because they're very, very heavy. So they were called cannonball excluders because they shot the jellyfish out. Now they've been refined and changed into Turtle Excluder Devices. They do cause a shrimp loss. We have figured out, including the cost of the equipment, the drag—the extra drag on the engine because of—of the—this extra piece of gear and its weight and the shrimp loss, and for us to do this, costs about \$40,000 per vessel per year. But there—it's a regulation

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and like every other American, we want to see the sea turtles survive. And as long as it's a regulation, we will comply. Things are happening that—that indicate that the sea turtles are gaining in numbers in the Gulf of Mexico. The surveys, the nestings, the number of hatchlings, all indicate that the sea turtles' numbers are improving and it's impossible to know whether or not the Excluder Devices has contributed or whether the protection of the nesting area has been the key factor but whatever is going on, we feel encouraged and we know that we've been a part of the effort.

(misc.)

DT: You were talking about why some of these turtle strandings were made here in the weeks of March and you think that it's some sort of a tidal or current problem...

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DB: Yes, if a turtle dies and the currents are running one way, it may be pressed against a rock otherwise kind of caught. And as the seasons change, that turtle's carcass may be

released and wash up during—it—it can be months after the turtle died that it washes up. Now there were 360 strandings last year. There is a file maintained by the government from the Stranding Network that tells where that turtle's stranded, whether it—there was—it was a fresh carcass or it was a carcass that had been exposed to the elements for quite some time. On the fresh carcasses, they always have to make note of anything that could indicate that the turtle died as a result of man's activity. Prop marks, those are very, very easy to see. Ingestion of fishing line. Fishing line wound around its neck. Fishing line wound around a flipper that results in—in the animal becoming sick. The diseases of—of turtles. There's a disease that causes them to lose the ability to hold their head up and that's called breakneck—their—their head just gradually becomes uncontrollable and it falls down and death is imminent. There's another disease that—that is tumors that grow on the animal. If it's a fresh enough carcass they can do necropsy and tell if it—if it had parasites or if it was anemic, all those different things. Then if the turtle has been near an explosion, the whole animal is pink. We'll know it was—with the U.S. Fish & Wildlife when they discovered a—a turtle carcass that weighed probably six hundred pounds and she said the entire animal was pink. And she asked U.S. Fish & Wildlife officials that were on the beach what causes this and they said, this turtle was by an explosion. What happens is every blood vessel in the turtle breaks and so the turtle is—is pink.

DT: What do you think the biggest cause of death is for the Kemp's Ridley's?

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DB: I really don't know. I know that the Kemp's Ridley is the turtle that eats crab and shrimp. Only since 1996, have the inshore fishermen been required to use Turtle Excluder Devices. Prior to 1996, they did not use them. We, in the deep Gulf, have been using them since 1989 so we have a seven-year period, prior to 1996, when the fishery that seems now, after we've gotten all of this sate—satellite information, on where the turtles actually are and where they spend their lives, we need a little—probably more time to get a better feel of the stranding records because this will only be the fourth season that the near-shore fishery will have been required to use Turtle Excluders.

DT: Let's talk about influences besides shrimping itself, on marine life in the bay and in the Gulf. I know you've been active in working on dams and trying to insure that there's enough nutrient and freshwater inflow to the Gulf and to the Bays. Can you talk about some of your activities there?

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DB: Yes, the—the first thing that—that I had to learn when I started working as the environmental person for a fishery is what the State does and—and what I could count upon should I have to go to any entity that might be holding water back. I learned that the Texas Water Development Board had done the calculations and had the freshwater budget already determined for all of the nursery systems and that this was a very high priority for the State of Texas. With that knowledge, now when we have situations where we know waters are being held back, with a simple phone call, we can get Parks & Wildlife informed, talk to Senate Natural Resources Committee, talk to Office of the Governor, and come to some type of a—of an—an agreement that helps the marine life when there is need for release of freshwater. It's not that we're putting animals over man. What it is is man is dependent on the balance of that marine water more than man realizes. 80 per—80 to 85% of all the earth's oxygen is produced by the oceans of the world. Now trees do a good job of cleaning air but the oxygen is produced in the ocean. And the cradle of life in the ocean

which maintains the carbon cycle, the life in the ocean,

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the cradle is the coastal area so any impact here will ultimately have the impact out there on the ability of the ocean to produce the oxygen, let alone our rain and everything else. So it's not animal over man or one group of humans as opposed to another group of humans. Sometimes we'll find a headline couched, "Shrimp Fishermen Force Release of Water". Well maybe we forced the release of water but we weren't thinking just of ourselves.

DT: Where are these releases usually...

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DB: A lot of times it's Choke Canyon and the dams on the Nueces that we—we—we really have to insist upon releases. Now we've got another situation brewing on the Rio Grande. There is a plan to put another dam between Brownsville and the Gulf of Mexico. There have been several things that have happened in the last ten years. It was a bad idea to start with but it's an even poorer idea than it started out to be because there have been some changes in—in the tributaries to the lower segment of the Rio Grande. There's no U.S. tributary to the Rio Grande past La—Laredo, from Laredo to the Gulf of Mexico. There's not one U.S. tributary. One of the major tributaries is the Rio San Juan that passes through the State of Tamaulipas but comes from Nuevo Leon. Nuevo Leon is where the City of Monterrey is located. For some reason, during the regime of Carlos Salinas de Gortari who was a native of—of—of that state, they dammed the Rio San Juan in the State of Nuevo Leon when the stakeholders of the water were the citizens of the State of Tamaulipas. They replaced the flow with the wastewater from the sewage plant

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of Monterrey. Well that affected the quantity, the quality and the character of the water coming in from the last tributary. The estuary of the Rio Grande grew from fifteen miles to twenty-nine miles because of the diminished...

(misc.)

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DB: ...diminished flow. Now the Rio Grande's estuary is not shrimped, never has been. It's a sanctuary. There's no shrimping there so it's strictly recruitment. We knew the site of the proposed channel dam to be forty-eight miles, river miles, up and when it was originally proposed, the hydrology said that the saltwater would intrude to that point. That's when the estuary was only fifteen miles. Now it's almost twice, so what I fear is that our freshwater supply is going to be affected because what they intend to do is scalp off the freshwater. They—they're not calling it an allocation. They're calling it a diversion.

DT: Of the floodwaters?

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DB: Freshwater. They want to scalp off the freshwater and see, anytime you have a—a—a river running directly into saltwater it's called a two layer system and you'll have the tidal action that pushes the heavier saltwater upstream and the lighter freshwater floats on the top and that's a dynamic system that moves back and forth. They want to scalp freshwater. Well there's a lot more water in the Gulf of Mexico than there is in the Rio Grande. And all the river people with whom I've spoken tell me that this is a risk that should not be taken. That ultimately, not only would we ruin the nursery, that we would endanger our freshwater supply.

DT: Could you talk about the other end of the Texas Coast? I understand that Sabine Lake

supported a shrimp fishery and that as the rivers that fed the estuary were dammed, that that shrimp fishery died. Is that true?

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DB: Yes. What happens when the freshwater inflow is curtailed, is the species that—that can live in the brackish water and those species especially that need the brackish water, the white shrimp I was speaking of, the near—near-shore shrimp, when the freshwater dries up or is no longer available, the parent stocks of the—that population of white shrimp declined. And if it's not sufficient for the next crop to come back in and the nursery is not suitable or habitable or conducive to that animal's development, even if its larvae comes in there, it won't live. That white shrimp can complete its entire life cycle, even though it uses the deep ocean, can complete its whole life cycle around the mouth of a river. The brown shrimp and the pink shrimp need the whole Gulf. Those are the ones that like the salty nursery. But the white shrimp need the fresh, brackish water mix and that would have been a white shrimp fishery that disappeared.

DT: Let's talk about other things that can influence marine life. There's been a lot of channel dredging. What impact do you think that's had on the marine ecosystem?

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DB: Well the shrimp are such a part of the ecosystem of both the nursery and the—the ocean that any type of dredging or dumping in either place, especially at certain times of the year, will have a very negative impact on the shrimp. Since my job is to make sure that the shrimp's habitat is protected, I don't like to see open bay dumping of dredged material. I lost the argument before I was born on whether or not we should have the whole coast of Texas have this big gouge down the middle that has to be re-dredged every—every few years. That decision was made because of World War II.

DT: Can you explain why?

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DB: Well the Germans were able to penetrate into the Gulf of Mexico with submarines and U-boats, endangering commerce. The fisheries, the vessels, including the vessels that my father-in-law worked on, were all sort of made a part of an informal Navy to watch the German ships and craft in the Gulf of Mexico. They feared that American or—or any of the allies trading in the Gulf of Mexico and some thirty-five nations have commerce in the Gulf of Mexico, they feared that if the war took a—a turn against us that there wouldn't be any way to move large amounts of material since they couldn't use the Gulf. So the decision was made on an emergency basis to declare the first use of the Texas waters as transportation which enabled the federal government to dredge the Intracoastal all the way to Brownsville. To this day, it is considered in national interest to maintain the Intracoastal because it was related to national defense. Now there were plants in Brownsville, at the Port of Brownsville, that manufactured artificial gasoline. So they had to have a way to get the artificial gasoline, synthetic gasoline out of here. So pipelines and Intracoastals and all that became very, very important, you know. All of the rubber was being used by the—by the military, so trucks were not considered, at that time, a viable means of transportation so they felt that the Intracoastal was important for national defense. That was a long time ago. We're much, much better at protecting the Straits of Florida and the Straits of Yucatan than we were then. You just take a look at these tiny, little areas. So now what we need to consider is a better way of dredging. They don't have to dump that spoil anywhere. I sat through five days of hearings: Europe has started to learn the lesson. One, they don't need

to use a dredge with a cutter head because once that material, you know, once the—the channel has been made, what they should be using is a vacuum dredge, not a cutter. They wouldn't cause near the turbulence or have the tendency to over-dredge, sometimes they'll over-dredge an area by four feet. And when you start calculating out the quantity of material that they're just taking over and dumping over the sea grass beds and it stays in suspension for months and months and months because this is a very dynamic system down here, this is really not a very smart way to do things. What they need to do is use a vacuum dredge which

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squeezes the water out of it and you've got this small amount of material to deal with instead of this—these tons and tons and tons of this soupy mud. And if they took it out of the system, whether they took it up to the incinerator if it happened to be terribly contaminated or whatever they wanted to do with it, there would be that much less to slump back in there and smother all the sea grass because every time they dredge and they go over and dump it, it is months and months and months before the clarity of the water returns. And all of that suspended material cuts down on the productivity of the Laguna Madre. Maybe it didn't matter when all up and down the coast we had lush sea grass beds but if 82% of the sea grass beds are now in the lower Laguna Madre, we better get excited and we better be very vocal about it and refuse to be quieted by, you know, someone saying no, we have to have this because of national security. Maybe the argument was valid in the '40's and '50's but I don't believe that argument is valid today.

DT: You mentioned that some of these sediments may be contaminated. Can we talk about pollution and the marine systems especially in the bay? One of the dramatic ones that I've heard of was, I believe, was Aramco, that contaminated a bay and has been considered an underwater Superfund site. Were you involved in any of the discussions about that?

0:54:33 – 2082

DB: All of the pipeline breaks or any type of an accident on the Intracoastal or in a chronic discharge, Texas Shrimp Association since its inception in 1950 has probably weighed in. I'm not familiar with that—that one. I know that one of the more serious ones that we have on the coast that's a terribly contaminated site is the Alcoa site. And that is the site of the worst mercury contamination in the world.

DT: What happened there?

0:55:11 – 2082

DB: In the process of taking bauxite into aluminum, mercury is used and a friend of mine who was involved during the process that led to the custom management plan asked them how much mercury they lose a day. And the answer was about a flask. A flask of mercury is ninety pounds. So not only has it been a problem, it still is. All that we do is just don't touch it. We just leave it alone. And apparently the sediments are holding this contamination there and as long as we don't go through and mix it up and stir it, it isn't affecting the whole ecosystem around there the way it would if it were disturbed. I, myself, would feel better if it weren't there and I would certainly hope that, in the future, we wouldn't permit something like that on the—on the Texas coast without some safeguards or processes a little bit more efficient than losing a flask a day.

DT: You mentioned that the Texas Shrimp Association had been involved in raising the alarm about pipeline spills and I was wondering if you might talk about either barge ship or pipeline spills since there are so many hydrocarbons that go around the coast?

0:57:03 – 2082

DB: Yes, well, as I said, you know, each step of the shrimp's life is critical and one of the things that will absolutely kill a marine system is any type of sheen on the top of the water because the top of the water is where the micro layer is. That's where the zooplankton and the phytoplankton live. And that top fifteen inches of water is the most productive water in the world. So when we have a pipeline spill, we know that if it's out in the marshes, it's going to ruin that water for a long time. And if it gets out into the bay itself, it has a suffocating effect on the micro layer and that top fifteen inches of water. Whenever something like this happens we, along with Texas Parks & Wildlife, follow all the companies to make sure that the State of Texas is compensated for its loss and since the shrimp fishery is so important, the state is very, very good at keeping records of what the value of the productivity happens to be and then if there is some left then the third party damaged would be the fishermen. And when they file class action alongside of the State of Texas, they're in the third party position. So they're third party damaged. So if the fishermen had a—a reduction in income because of someone's negligence then they—they are given monetary relief.

DT: Maybe you can give us an instance of what happened with the Ixtoc spill, which was pretty traumatic.

0:59:03 – 2082

DB: There was two kinds of damage from Ixtoc Uno. There was the immediate damage to the...

DT: Maybe you should explain what Ixtoc was?

0:59:13 – 2082

DB: In the Gulf of Mexico, the northern half, since the 1940's, has been used for petroleum production. That involved development of technology for exploration, exploitation, production. In the early 1980's, they thought it would be a good idea to explore the offshore waters in the Yucatan in the Gulf of Mexico. Great care needs to be exercised in that area because there's a lot of thermal activity. The governor of Texas owned a company called Sedco and Sedco leased to Pemex, which is a state-owned oil company of Mexico, a rig. They hit a thermal and it—the rig blew out. And it was months and months and months before they were able to cap that blowout. We had hundreds of thousands of gallons of crude carried right up on the Gulf loop and deposited on the Texas shore. The Texas shore has a couple of sandbars and, in places, it wouldn't be so bad right off the first bar but between the first bar and the second bar or the second bar and the third bar, there would be three feet of crude floating in a ribbon. We had the actual damage—we lost a whole class of sea turtles that year. They could not have made it through with that—the hatchlings and all. The other damage was reputational. For over three weeks, not one shrimp moved because people were just sure that the nets were being brought up through petroleum and they tested and tested and tested, never found any hydrocarbon in the shrimp but the damage was done because this was part of the season that it's—the—the make-or-break time, since it's an annual like—like—like a farmer. They have tractors, we have vessels. That was our harvest time. And so these shrimp fishery, along with hotel, motel, all people that were damaged, filed class action suits. And Sedco was forced to—to compensate the fishermen for their loss during the time of the worse of the spill. And that was even a reputational damage because our seafood wouldn't sell. No one would come to our beaches. It had a devastating effect on the coast.

(end of Reel #2082)

(misc.)

DT: We've been talking about the effects of pollution on the marine ecosystem. I thought you might talk about how a proposal you got involved with which involved incinerating toxic waste off the coast and I was wondering if you might be able to elaborate a little bit?  
0:01:15 - 2083

DB: Yes, that was the nightmare that we didn't see coming. You know, the Environmental Protection Agency was created in the '70's and their first actions here in Texas were very strong and very positive for the seafood industry. The first thing that they did was require all coastal towns to put in sewage systems. Example: Laguna Vista used to be on septic tanks. We had three members of the shrimping community on the board with our water district that—that serves the whole area. And as soon as EPA came out and said, we want all municipalities to have municipal sewage treatment and stop these pollution problems in the bays and oceans, these men pushed forward an \$11 million bond issue. Up to that time, the processing houses used to take the waters from the washing of the seafood and dump it into the channel. Normally, in the course of the year, it wasn't a problem. But during the time of the year when the run was on it could be quite a problem: nutrient over-enrichment. So it took all of the seafood processing waters out of the channels and took all of the municipal waste out of the direct infiltration into the water from the—from the soils. We thought EPA was the toughest agency around. And there was just a little blurb about incineration of toxic wastes at sea. My first impression was, well, the EPA, that's a tough outfit. If they're going to all this, surely they are going to do it well. I did not know that some people here in the Rio Grande Valley were tracking this very, very closely. Cindy Chapman, who works for Audubon Society was track—tracking it. Robin Alexander who has a Master's Degree in public health from Harvard and a law degree from Columbia University wor—and worked for Texas Rural Legal Aid was tracking it and Dr. Margaret Diaz, a physician. Now all of these people were friends. When they saw this, they asked the government for the test results. Well the government started to hedge on it and go sideways and these people became immediately suspicious.

DT: Did they say who the proponent was for this permit?

0:04:24 - 2083

DB: Well the applicant was Waste Management and, at that time, the vessel, the Vulcanus One was foreign flagged, had the crew from Singapore and the half interest in the vessel was owned by interests from the Netherlands. Now you know that we have very strong maritime laws and they can't make port in the United States if they're foreign-owned vessel. They can't pick up cargo. They can deliver cargo but they can't pick it up. So there was some kind of a fight going on. So there were—there were plans to build two more American-flagged incinerator ships. There was only one incineration site on the whole earth that was designated and that happened to be in the Gulf of Mexico, 140 miles southeast of Brownsville, right on the line with Mexico's exclusive economic zone. This was strictly a political position but it was about the worst place in the Gulf where the incineration could—could occur. The vessels did—did not have any safety features. They had no scrubbers on the incinerators. They would not go to the temperatures necessary to destroy either PCBs, DDT, DDE, dioxin, and there was no way to affect a clean-up if they had a spill. And the area where the material would—would sink would be destroyed for forty years. That's how long the residual effect would be. We thought this was a horrible idea and

as we got into it more, we found out that not only were they planning to operate the Vulcanus One but, they had built a Vulcanus Two and there was an Apollo One and an Apollo Two coming. So we were going to have four incinerator ships working twenty-four hours a day, twelve months a year, 140 miles southeast of Brownsville. We asked, how is it you happened to choose us? They said, well, we couldn't—it's actually closer to some other places but the people up there would

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have been more wary of—of the proposal. For example, Houston or Corpus Christi. So once they essentially told us to our faces that we were considered dumb and they—they ran the notice in the paper in Brownsville, they also told us that we had a very divided population so we could probably never get ourselves together to mount any kind of a protest. Well the Rio Grande Valley is diverse but that doesn't mean that the populations are fractured and don't have the same interests like public health and welfare in the future. So we took the government on, on the fact that they had no regulation for these—these vessels. They had no indemnification should there be an accident. And through the exploration of the indemnification, the—the possible chronic effects if the emissions were highly acid and I've told you about how the shrimp are in the micro layer, in the zooplankton and how they would be affected by acid rain or anything acidic on a chronic basis. We took all of these questions to them and finally the decision was, we can't write a regulation that's protective. And if we can't write a regulation that's protective, we probably shouldn't be doing it. And they couldn't get a site designated in either the Atlantic or the Pacific. They couldn't have the site just in the Gulf because it defied what's called distributive justice. If all of society is benefiting from the product and the—the byproduct is dangerous then everybody in the society has to bear part of the risk to enjoy the benefit. That's distributive justice. Well if it's all going to the Gulf of Mexico, that is not distributive justice and if the other coast politically fought it back, then they finally had to undesignate the Gulf site. And I was around for that one when that finally happened.

(misc.)

DT: Let's talk about one of the more recent issues with pollution of the bay and Gulf. I understood that there was a pretty significant spill of a pesticide. Is that right?

0:09:42 – 2083

DB: Actually what it is...

(misc.)

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DB: ...a component that's used in the manufacture of product—of plastics but it's a byproduct of the manufacture of pesticide. So it's toxic. It's corrosive and it's explosive. And it apparently was being transported in a Mexican rig from the port. I do not know whether it came in by barge or whether it came in by ship because we have chemical carriers and—and chemical barges. I have no idea how it came in. But the hatch apparently was open and the tractor trailer jack-knifed and flipped over and emptied 9000 gallons into a canal that feeds into the Brownsville ship channel. Well the Brownsville ship channel opens into the natural harbor, the Brazos de Santiago, that was first mapped in 1519, second point of discovery on continental North America. So this is a natural path that has a very good circulation. This spill made its way all the way to San Martin Lake which is like a little nursery area that's off the ship channel. There have been six million fish killed. There have been about fifty ducks die. We had a great number of red drum and trout die. If these

animals are dying, my question immediately is, “Is this going to affect San Martin Lake as a shrimp nursery because it is one of the most important of all of the shrimp nurseries in this area?” So I’ve been assured by Texas Parks & Wildlife that they are going to monitor because is the month when the—when the shrimp start arriving. If that is a poisonous area, then there won’t be any shrimp from there. Shrimp usually are acutely killed or they exhibit what’s called an avoidance mechanism. They get out of the way. They’re very sensitive and they are not an animal that lives long enough to bioaccumulate. Some of the animals higher on the—on the evolutionary scale do bioaccumulate but shrimp don’t. They’re either acutely killed or they’re not there. They get up and leave. It’s impossible to say whether or not there was an acute kill of shrimp because shrimp don’t float when they die. They sink. Some marine animals are

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sinkers, some are floaters. Shrimp are sinkers.

DT: What’s your thought about the state and federal agencies that are charged with protecting the resource that shrimpers use?

0:13:14 – 2083

DB: Well there’s a little thing called institutional memory. When Texas was just beginning to develop as a state with a—a maritime fishery, or a blue water, black shoe fishery like they call the Navy the blue water, black shoe navy, the one that goes to sea—when Texas was just evolving, all of the senators and all of the representatives and the governor and everybody else knew what it means to have birthed in your state a maritime fishery. They knew, at that time, that there had to be an association formed that would meet the requirements of international fishery law. I say international because it depends on whether or not you’re in a location where the movement, the migratory movement of the fishery resource asset crosses boundaries. With what the biologists could tell them about the marine shrimp and the names that had been given to the shrimp over the years as they were discovered as—and—and—and—and categorized, the *Panaeus Duorarum* is the prevalent species in the Caribbean and more tropical type areas over by the Dry Tortugas and Key West and Florida Bay and all of those areas. That means pink gold. The brown shrimp which is the most valuable shrimp in the Gulf of Mexico, it’s name is *Panaeus Aztecus*. That means it’s a trans-boundary and it was discovered in great number off of Mexico which happens to be where the shrimp ends its life. That’s where it will either die or be eaten ultimately in its twelve to fifteen month life span. That’s also where the females of both the *Aztecus* and the *Duorarum*, the pink and the brown, release their eggs almost at one time because the egg-laying is triggered by temperature and light. So at the proper time of year, the animals are stimulated and—and the eggs are released, rise to the surface, immediately hatch and then the whole thing starts over with the Gulf Stream and the Gulf Loop redistributing. So Texas Shrimp Association was de rigeur, required. Its function is to be a way of communicating between the governing agencies and the fishermen. But the communication has to run both ways because the government is not out there on the ocean and the only reed they can get on whether or not our nurseries were productive and whether or not anything was going right or anything going wrong, is

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what the yield is. We call the production what nature was able to put out there in a year. That’s the recruitment from the nurseries. The yield is what there was for man and I’ve already explained that our gear doesn’t fish hard so we intend to be here over the long haul.

With the maritime fishery, the obligation goes with the fisherman. He is responsible for protecting the habitat of that species throughout its range and it is his responsibility to always go to government when there is any proposal that will harm the habitat of that species. That is the way the fisherman of the high sea gives back to nature.

DT: Do you feel like the government is responsive?

0:17:34 – 2083

DB: They are when we walk in and explain to them that we know why we're here and this is what is at stake. And sometimes they decide our way and sometimes they decide another way. A—I've had a denial of a—of a dump permit from the Texas Natural Resource Conservation Commission and less than 1% of permits have ever been denied and Texas Shrimp Association owns one of those.

DT: Maybe you can tell about that issue.

0:18:10 – 2083

DB: It was aquaculture.

DT: Some people claim that shrimp farms may really start competing strongly with wild shrimpery. Can you comment on that and maybe answer on this permit...

0:18:23 – 2083

DB: Yes, I can comment. The species of shrimp that go on the market are mostly what we would call the tropical or warm water species. The Gulf of Mexico is doubly blessed because we have the warm gulf stream and the warm gulf loop so we have a high productivity of this tropical type shrimp. Around the world, the most productive shrimp areas will fall in the tropical regions but all of the valuable species are penaeids (Penaeidae) and need the nurseries. There's been a terrible premature jump on a technology that chose to locate the shrimp farm where the natural shrimp complete their—part of their life cycle. I could best illustrate this by telling you the story of Taiwan. China and Taiwan have always been great consumers of shrimp and China used to be a great producer of shrimp. The earliest form of aquaculture was to just dam them up and not let them get out or catch them as they came out of the nursery, out to sea. That's not permitted in the United States. Marine animals that belong in the sea have right of ingress and egress. So nobody can go string a net up across any ingress and egress. You just can't do it. That's why I tell you there's so many areas that are not subject to trawling. Well China didn't have this so with their (?), what they could do was just hem them up and then go scoop them up. Since they didn't need a vessel, you know, just harvest by—by damming, so to speak. That was aquaculture.

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Then they developed a means by which to artificially stimulate the female to lay eggs and do what they call maturation in captivity. Now this is a completely different thing. In Taiwan, they started out with what they call the Taiwan model of a shrimp farm. They have ponds that are from one to five acres in size, at least one meter deep going to a depth of fourteen feet on the other end. The pond was originally designed to take groundwater and dump into marine water. But they took so much groundwater that subsidence got started and they were affecting the water table and—and foundations and everything else so the government made them stop. So they started taking the water into which they had been dumping their waste. The reason they dumped the water is because the shrimp, as they grow, require more and more oxygen. The shrimp only eat 20% of the feed that's put in there because they're feeding them by a pellet that is like corn meal and some egg, maybe some shrimp meal in there with it with a little hard binding on the outside of it like a

grapenut. Well the shrimp pick up their food, eat it. Well what happens to the integrity of the pellet after the shrimp gets one bite? The water hits it, sog. He throws that one down and goes and gets another. So 80% of the feed is lying down there, it has fat, it has protein, it has carbohydrate. It starts fermenting. That takes more wat—oxygen out of the water. So by the end of the growing season, here they are seining water in as fast as they can on this end, dumping water out and they get something going where they're taking in their own waste. When water starts to become loaded with metabolites which is the byproduct of—of any animal plus this anaerobic activity that goes on with all of this feed lying on the bottom of the pond, plus the normal consumption of oxygen, they don't—they don't have any sea grass. They don't have a real system going there. It's

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not an aquarium. This is a feed lot. Disease starts to manifest. Too many animals, too little space, declining water quality. They usually get one or two years out of a shrimp farm and then they have to abandon it because you can imagine the build-up and if they're going to make money, they better get a great yield out of this land because they are feeding these animals which is expensive, they are having to aerate. The only thing they don't have to do in South Texas is pay for the water. They're the only agricultural user that doesn't have to pay for the water. All the other ag users have to pay for the water but they were considered a diversion and so they—they're able to get by without having to pay for their water. What happened down here is they—not only did they have the shrimp, all of a sudden they decided against a permit to bring in eel and try to farm the eel. That was against the— the permit. And we'd had a big discussion about it during the permit hearing. And when they started bringing the eel in anyway, we began to be very upset. And we had a great escape of eel.

DT: Were these exotic eel?

0:24:45 – 2083

DB: They told us that they were *Anguilla Rostrata* which is an American eel. It started off a long, long time ago as a common population of Conger Eels in the Atlantic but, over time, they differentiated into two branches of the same family. One was called *Anguilla Rostrata* and the other one's called *Anguilla Anguilla*. And it just so happens that the elver phase which is the little crystal baby eel, the elver phase of this eel that only breeds there, they go out and they live ten years up a river, then they come back to the Sargasso Sea either from Europe or from America. The only place in the world that elvers were available at the time they were buying elvers was Europe and it turns out that since the 1920's, they have forbidden the importation of any live *Anguilla Anguilla* into the United States because it hosts a nematode that's long host specific that attacks the swim bladder of the eel. So we started protesting the fact that they were going to grow eel. And they wanted a permit to dump the water from the eel. And we said, no, we're going to challenge it. We got into the hearing. I mean, they ordered us right there from the hearing to go in and start whether we had a lawyer with us or not, to go in and get started with a hearing judge. And we had two more weeks, you know, like a week in between and back to Austin and another week in between. We forced Texas Parks & Wildlife to go onto the property and take samples because we had evidence that these eels had been smuggled into the United States. And when Parks & Wild—Wildlife went onto the farm and took just a random sampling, some of those animals had as many as forty and fifty worms on their swim bladders. The State of Texas denied that permit to dump the water, made them hold all of that and later on in that

growing season, they tried to send some of the eels to Taiwan and some here and some there. Those animals, those eels, those poor eels, actually exploded from so many parasites. That was a the denial, denial to dump that eel water. But we know from natural history that they couldn't be getting *Anguilla Rostrata* because the seasons are opposite. When the— the elver is going ashore, up the rivers, the migration, in Europe, they're not in the United States even though it's population and it takes a real genius biologist to be able to tell the difference between the *Anguilla Anguilla* and the *Anguilla Rostrata* because they came from the same Conger

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Eel a long time ago. So I guess that was one of the more challenging things. Eels, by the way, are great predators of shrimp and all we needed was a bunch of sick eels with nematodes whose waste would expose all of our fish, our fin fish that have swim bladders, to infection. Plus this new bunch of absolutely voracious nocturnal animals.

DT: Can you discuss any other major conservation challenges you've...

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DB: From the shrimp farms?

DT: No, not necessarily but just as somebody who is an advocate for the shrimp fishery, what other sort of conservation issues do you think will be coming down the pike?

0:29:07 - 2083

DB: Well they're going to have to get a decision one way or the other on the—whether or not we'll be done in the Rio Grande another time, even though it's against a treaty and against common sense, I'm sure that we'll have to go and—and be involved with that one. When the Corps of Engineers finally comes up with some answer to our question of why they continued to allow OSH—I mean, open water dumping of dredge material when, since 1976, it's said they're killing the little Laguna Madre with open bay disposal. When they can tell us why it's still going on, with a straight face, when there are so many other way. When we can get congress to allocate the resources, if they want to keep this reach open, to allocate the resources based on its recruitment value, then maybe we can get the vacuum dredging and some of the other more—more modern things that would, if they must, must, must for national security reasons, have an Intracoastal, then we can finally get enough money. Some areas get \$50 a yard to do something with the dredged spoil. We get \$.50 a cubic yard. And that is take it here, dump it there. And we can't get them to take the recruitment value. They will only base our allocation on the amount of traffic and we don't even average one a day. So I think there's an inequity there and that's a—a battle I will continue to—to, every time I hear the—the clarion call, I'll be there. That—that's very, very important to us, given the fact that our—our sea grasses in this area are so important. The shrimp farm, there continues to be stories in circulation that the lion's share of shrimp on the market in the world is from aquaculture. As of 1998, when I was involved with the Task Force reviewing the practices of aquaculture and what to do about aquaculture, shrimp aquaculture in the United States, the statistic is: anywhere from 75 to 80% of all shrimp in the world are from the oceans. Natural shrimp. The amount of aquaculture shrimp varies from 20 to 25%. That's all the shrimp in the world. Now the United States can only produce 20% of the U.S. market of shrimp because oceans have a finite capacity. And we don't over-harvest because we want to be here to put this delicious, wonderful, desirable, seafood—ma—make it available to the American public so we don't make our gear fish any harder and try to be what they call optimal yield fishery which is take what can be taken, not over-

take or under-take but, you know, try to balance it out so that it's just right. 20%, now if we take that 80% that's imported into the United States and call that 100%, what percentage of that is aquaculture

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shrimp and what percentage of it is natural shrimp? The same, that is (?) production. 75% to 80% of it will be natural shrimp and 25—20 to 25% will be aquaculture. So aquaculture is not coming anywhere near even cutting half into the production. The only affect that they can possibly have on natural production is to lessen it if they continue their rape and run practices in the shrimp nurseries of the world because they can damage and destroy for a period of five years any little sub—sub—subsistence fishery such as in Vietnam or some of the developing com—countries. The U.S. aquaculture shrimp production, where does that stack up? It is less than 1% of the U.S. supply. This past year, the Texas farms sold every single shrimp to Europe that they had. So they didn't improve the shrimp supply in the United States. They did not pay the money for processing so that there was any salary or any benefit to their having been here other than the salaries of the—of the people for the feeding and the—the harvest. And harvest usually lasts about three weeks and—and it's over whereas the fishery is twelve months a year. And I—I feel that if we weren't there then Texas and especially the legislature with as much turnover as we have, that we'd lose the institutional memory of what brought maritime fishing to Texas in the first place and how we have been almost a resource for the Land Office, Texas Parks & Wildlife and especially Office of the Governor because the highest elected official is the steward of the property of the people and the Governor's the only one who can interface with the Secretary of Commerce and the President. And the President is the one who is the steward of the resource assets of the United States' exclusive economic zone of the ocean. So without us to remind and to come in and—and say, wait, maybe this isn't a good thing. We see these repercussions. We developed our own institutional memory as well and the best thing about Texas Shrimp Association, it is 100% self funded.

DT: I understand you were a teacher in your early days. What sort of lesson might you give to the children of the future for conservation? What do you think is important to pass onto them?

0:36:29 – 2083

DB: The one thing that I would want children to know is that earth is a water planet. That we're beautiful and we're blue. And that we may live many, many miles from the ocean but 85% of this planet's oxygen comes from the top fifteen inches of the ocean. That top fifteen inches of the ocean is greatly impacted by hydrocarbons and petroleum and oily substances. If we ever pollute and allow very unsafe practices from even stacks—stack emissions can affect that layer—that layer, we run the real risk of interrupting the production of oxygen of the transpiration which has to take place for clouds to form, for the rains to move over the land, we'll lose the cycle of salt to freshwater or damage our atmosphere. So if I could ask children to remember just that one thing, I would ask them to remember that everything runs to the ocean, that earth is beautiful and blue and we're the water planet. If we're the water planet, then that's the thing we need to—to concern ourselves with.

DT: Thank you. Good message. Thanks for spending this time with us.

End of reel #2083

End of interview with Deyaun Boudreaux

