

NOAA Beaufort Lab Oral Histories  
Joseph Smith Oral History  
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Interviewer: DH – Don Hoss  
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Joseph Smith: Joe Smith here. We're at the Beaufort Lab. It's Monday morning, November 7th, 2022, about 10:40 a.m. I'm here with Doctor Don Hoss and Doctor Jeff Govoni. Today's interviewee will be myself, and we'll start off with the questions from Doctor Don.

Don Hoss: Okay. I've been looking forward to this. I know some of how you got here. I believe you came up from Charleston. I'd like to hear how you actually got into the field and then how you got to Beaufort, if you don't mind.

JS: Okay. Well, I was born and raised in Philadelphia. My father was a sport fisherman. I'm told my grandfather was. I never met him. He had passed away before I came along. Philadelphia actually had two county parks and streams running through it. Fish and Game would stock those streams with trout every spring. So, I kind of grew up to freshwater fishing and of all places, Philadelphia, for trout. The Delaware River – there was still access points there catching catfish and carp, small mouth bass, that kind of thing. Several weeks of each summer, we took a Christmas summer vacation to South Jersey – to the Jersey Shore. We'd fish down there for fluke and wheat fish, blue fish. That was my sport. I was hooked on fishing. I had a very good high school biology teacher, Father Tucker. Very instrumental in early training, Father Tuck was. I knew I wanted to go into biology. I wound up going to St. Joseph's University – St. Joseph's College back then – on the main line of Philly, a little Jesuit school more well known for its basketball team nationwide. But there was only about a couple of thousand students there. But I was in there for freshman, maybe sophomore year, and I realized I was amongst almost all pre-dent and pre-med students. I was pretty certain I didn't want to go into those two fields. My friend, Bill Ross, had gone to Columbia. He had a friend that was working at Woods Hole, a summer program at Woods Hole. So, we took a visit up to Woods Hole, end-of-the-summer kind of road trip. My first trip to Woods Hole, we got into his laboratory. I think he was doing eel respiration. I was just hooked on the area and the field and the research vessels. I said, "Boy, this is what I want to do." Graduated from Saint Joseph's that senior year, applied to a couple of graduate schools. I got into William & Mary without any graduate money assured. So, that first semester, I didn't have any support. But I met John Merriner. He was head of the ichthyology department, and John had an assistantship available working with cownose rays. VIMS – I should back up. William & Mary sent its graduate students across the York River to Gloucester Point to the Virginia Institute of Marine Science. So, VIMS had gotten some Sea Grant money to study cownose rays. They had a nasty habit of coming in the Bay every summer. They're shellfish eaters, and they would devastate the cultured shellfish beds, particularly in the Western Rivers System, which is where the oyster industry had gravitated to because of the various pathogens, diseases, and predators that were in the main stem of the Bay. So, I worked under John. He was my major professor on life history of the cownose ray. We worked out the life history of it. I guess about [19]78 or so, I was finishing up and was looking around for jobs. There was another graduate student, Jeff Ross, and I were both looking around at the same time. A job came up in South Carolina Wildlife and Marine Resources Department. Also, Mark Chittenden had a job – I think it was at Texas A & M. He had a big trawl survey going on at the time. Jeff and I both applied for the jobs. I got the one in Charleston, and Jeff took the one at Texas A & M. I think it could have very well gone the other way. But I got down to Charleston in [19]79 and worked for the recreational finfish group, helped write species profiles on three of their sport fishes, spotted sea trout, red drum, and flounders. That was my first year. I continued to work for the finfish group. I think we did an

access study on public access and potential public access places for putting boat ramps, fishing piers, that kind of thing. But after that, the Reagan administration came in, and they pulled a lot of federal funding out from underneath the states. So, starting about [19]81, I was on some tenuous funding there. I spent a year supervising three port agents in the commercial statistics office for (Dale Tealing?). He was my supervisor. My samplers would go out and sample the shrimp catch and the finfish catches at the docks. I think my final year, I worked for Charlie Wenner on the MARMAP program, going on some offshore surveys. At the time, Charlie had the inshore MARMAP survey also doing a trawl dragon bag kind of survey.

Jeff Govoni: On the (*OR?*)?

JS: Yes. The *O2* or the original, excuse me. Then the inshore surveys were done on the *Lady Lisa*, I think, and then maybe the *Atlantic Sun*. So, well that – two kids and tenuous funding bouncing around program to program within the department down there. I was looking around for possibly a federal position. I gave a talk at the Atlantic States Marine Fish Commission meeting. They had their annual meeting in Charleston. I think it was in [19]82. That's where I met Bob Chapoton. I gave a talk on spotted sea trout versus weak fish life-history-strategies kind of thing. Chap told me he had a job come and open up, possibly the next spring, menhaden program. So, I applied. Lo and behold – I think Rosa Hill was the personnel person down in Miami. I got a letter from her saying I got the position. April 18th, I came up here from Charleston and started on the 19th. My car broke down on the 17th in Georgetown, South Carolina. It jumped time. So, I had to get back to Charleston, get our second backup car. I think I arrived a day late here in Beaufort for my tour of duty. I think Bob Chapoton had told me he had a similar thing happen to him on his way from Michigan for his first day. But that was April 1983. I had visited Beaufort a couple times when I was at VIMS. John Merriner brought me down here a couple times. I forget what the reasons were. John had business down here, and I tagged along. But I liked the area. I thought it would be a great place to raise kids, lots of water and a great inlet with access to the ocean right here. Of course, the Beaufort Lab had a great reputation in the marine science field. So, I made the leap. It was, for me, a great career decision. So, that's how I got here. When I got here, Bob Chapoton was in charge of the menhaden program. Donnie Dudley was still here. Donnie was in charge of the Atlantic port samplers and collecting the Atlantic landings from the menhaden industry. Eldon Levi was in Gulf Breeze, Florida, and he supervised the Gulf menhaden samplers. Chap put me to work sample in here in Beaufort, at the fish factories here. At the time, there were three. Also, I handled the Gulf landings data and built that data set as the fishing year progressed. They were my first tasks here.

DH: The menhaden program, had it reached its peak?

JS: I think it did. It was right around then – because we still had Donnie. We still had Eldon. Bob Lewis was still here. Bill Nicholson was still here – Mayo, Judy. But four out of five of those guys were getting ready to retire. Two years after I arrived, about [19]85, Bill Nicholson retired. Bill was in charge of the fishery-dependent data for the menhaden fisheries. So, he handled all the landings, the port samples. So, when Bill retired, I inherited a lot of his tasks. Mayo, he was here. Doug Vaughan – oh, I should say, Doug came right around the time I came. Doug was an assessment guy. Doug had Mayo working with the logbook data, trying to recode

that and get it entered on the mainframe. But Mayo was two years away from retirement. Then Donnie retired in [19]89 or [19]90, I guess. So, these were folks in positions that we weren't replacing. So, myself and one or two others were starting to accrue duties as these folks retired that had been with the program for decades. So, yes, I probably hit the tail end of the peak there and as the program was shrinking, at least personnel-wise.

DH: When did John Merriner come?

JS: John came on that interagency transfer in [19]80, maybe, around [19]80 from VIMS.

JG: [19]81.

JS: [19]81.

DH: So, he was here?

JS: John was here.

JG: As an IPA.

JS: As an interagency transfer.

JG: As an IPA.

DH: That is right. I forgot.

JS: Then somewhere in those early eighties, he got put on permanent after John Reintjes retired, which might have been right before I came. I think maybe early [19]83 or something like that. So, John was here, yes.

DH: Yes.

JG: No. I was just going to add that the sequence in regard to John Merriner's.

DH: Go ahead. Any other questions?

JG: No. I didn't have a question. I was just going to add to the sequence of John Merriner's arrival and eventually, movement off of the IPA and the FTE status.

DH: But you then spent your entire career at Beaufort with menhaden?

JS: Yes. April [19]83 to July 2015. It was 32.5 years, I guess. Bill Nicholson was sort of my mentor. I always remember Nick saying, "You've got to retire when you're sixty. You've got to retire." Now, doggone it, he went right around when he was sixty. I just watched him and his wife Barbara – they would flit all over the world. I think, once a year, they'd have one big trip somewhere. I said, "I think this guy's got – he's on to something here." Well, I aimed for sixty,

but I think it was 62.5 I was. But Bill was always a good source of historical knowledge about the menhaden fisheries and also the federal government.

DH: And many other things [laughter].

JS: Yes.

DH: My family, being rather middle-class people, would always go out at sixty-five. So, I hung on at sixty-five. Quite frankly, I did not really want to retire. But I'm glad I did.

JS: Right.

JG: We're ready for more questions? Maybe you've got the list there.

DH: No. This is for somebody else to say. Bud didn't give me the list.

JG: Right. Bud Cross has cooked up this list of questions to answer. From my recollection – I don't have them before me, Joe – but he always asks about funny stories, and you being, in some ways, the funny story maven of the menhaden.

JS: Yes. Gosh. Travels with Joe and Doug – Doug Vaughan, it didn't take long to realize that Doug was a barbeque connoisseur. [laughter] He literally had a three-ring binder that he travelled with. If you did not want to eat barbeque, you better be at the wheel of the vehicle around lunch and dinnertime. Because he had a three-ring binder and he had it indexed on whether you were going north or south on Interstate 95 and which barbeque joints would come in sequence up or down the Interstate. So, we had many a tale or we got off the beaten track trying to find barbeque joints out in the middle of nowhere.

JG: The other question I had is towards the end – and I don't know how many years, but weren't you basically in charge of all the port sampling in the Gulf as well as the Atlantic?

JS: Yes. That gets back to the attrition of the personnel in the program. Again, as people retired, we just didn't replace them, and I just started accruing things. So, Donnie Dudley retired around [19]90. So, I inherited his supervising the Atlantic Port samplers, which at the time, stretched from New England down to Beaufort. Then Eldon Levi retired in [19]94 – late [19]94. So, that was the Gulf sampling he was in charge of. So, I accrued those duties of managing the port samplers in the Gulf and then the Gulf landings – amassing the Gulf landings. So, yes, I handled both coasts there from probably [19]95 on for twenty years.

DH: Yes. Bob Chapoton – that's funny I can't remember some things, but was he in charge?

JS: When he hired me in [19]83, I think he was a menhaden program manager, yes. They had just hired Doug Vaughan. Doug was the stock assessment guy, and Dean had been on board since [19]74. Dean was in charge of tagging, mostly juvenile tagging, of menhaden back then. When I got there in [19]83, Dean had just finished up two major assessments of the Gulf fishery and the Atlantic menhaden fishery. I think, one, maybe two of them won him awards for the best

paper in fishery bulletin that year.

JG: You're talking about Dean Ahrenholz?

JS: Yes. Dean Ahrenholz. So, Chap was the lead, and he was also the liaison to the menhaden industry. So, he would go to the industries once a year. They had a trade group called the National Fishmeal and Oil Association. So, Chap would go there in the springtime. Chap produced the forecast reports that the industry had asked for back in the seventies, some kind of forecast that they could – well, I'm told they would take our forecast and go to their bankers in the spring and say, "Look, the feds are saying we're going to catch this many fish. We want a loan for this amount of money." That was one of the practical things. But Chap would produce that forecast. Then Chap passed away in [19]85, two years after I got there. So, another thing – task I inherited, was Chap's forecast report. So, I kept that up also every spring. There was a multiple regression of historical catch and effort. We would pull the fishing companies every late winter and ask them which vessels they anticipated fishing the upcoming year. Then we had a track record of those vessels. So, we took a stab at how much effort we thought was going to be expended the coming fishing year. We'd plug that into our multiple regression, and it would produce a forecast for both coasts in thousands of metric tons with some 80 percent confidence levels. We continued that. We'd have a recap of the previous season, what went wrong, what went right. So, I inherited that liaison task also that Chap had, interfacing between the industry and the service and representing the service at the Atlantic States Marine Fish Commission and the Gulf States Marine Fish Commission.

DH: Am I right in saying – I think we used to say this, right or wrong – that menhaden was the biggest fishery by tonnage in the U.S.?

JS: It was.

JG: It was.

JS: Up until about the early nineties and it was superseded by the Alaskan pollock. Alaskan pollock was a trawl fishery. It's a firm white meat. It goes into fish sticks, essentially. But Alaskan pollock superseded it early nineties. Menhadens run a second – sometimes a close second, by volume of Alaskan pollock. By value, it's down there. It's probably below the top ten in terms of value, but number two in volume when you add Atlantic and Gulf fisheries together.

DH: For a while – I can't remember when – there was an interest in supplementing the food of Four Nations with menhaden meal. Were you aware of that? Or was that before –

JS: That might have been before me. I know in [19]85 there was a big push. NC State was involved – their seafood technologist – in making surimi out of menhaden, a fish paste. The Japanese had just come out with the surimi fish paste, a base product that could be morphed into a lot of different things: extruded crab legs, crab cakes, fish cakes. So, there was interest in there. Here you have an industrial fishery that the products getting reduced to fishmeal. NC State – there were some other universities involved, and they partnered with the industry. I think it was SK money, Saltonstall-Kennedy money, that Omega Protein then Zapata Protein up in

Reedville got. They designated a couple of their boats for unloading fish for surimi processing. They had a small processing plant up there. The bottom line was you can produce this fish paste from menhaden. However, it had an enzyme in there that wouldn't allow you to have a pure white fish paste, which is what the foreign markets wanted. It produced an off-gray color of fish paste – menhaden did. It had something to do with an enzyme. So, yes, the texture was great, but the color was the problem. So, that surimi didn't progress beyond the mid-eighties, I guess. A couple of times, downstream from that, though, there's been a couple of reports that, "Hey, we found something that will counteract this enzyme and create the white paste." But it's really never taken off.

DH: I was just on the fringe of this, but another problem I remember was that to produce a food product, the menhaden plants weren't the most sanitary type of factory that you'd want to eat out of.

JS: Yes.

DH: That was somewhat of a problem.

JS: Yes. The seafood technology folks at Pascagoula Lab actually do inspections of the menhaden factories, but it's mostly for salmonella entering into their product. They're very fastidious about salmonella, testing-wise. That testing program's orchestrated out of Pascagoula. I guess my example would be, when I first got here in the fall, there's a roe fishery here in Beaufort. Beaufort fisheries was my key sampling factory here. They'd come in with these big adult menhaden, December, late November, December, January. I asked the owner, Jule Wheatly, about that. Because at the time, the mullet fishery was expanding, and there's a big fishery in the Far East for mullet roe. I asked Jule Wheatly about that menhaden roe. He kind of pooh-poohed it saying if he went into food-grade fish, that's a whole different ball game of FDA standards. He just didn't want to get into that.

DH: I hate to say it, but in [19]58, in the winter, the grocery stores would have sitting outside the front of them, bushel baskets or something full of menhaden roe.

JS: Yes. I've got a story about that. My first December here, December [19]83, I lived in Morehead City. I go home down Evans Street to look at the charter boats just to see who's been fishing. Usually, there's not much activity there in December back in the eighties. There, the Sanitary Seafood Restaurant was open. There's a sign that says, "We have shad roe." I'm scratching my head and saying I know quite a bit about the life histories of anadromous fishes on the East Coast. You don't get a run of American shad here until the spring, until April, maybe March at the earliest. I found out later when I came back – I might have asked Bill Nicholson. He laughed, and he said, "Shad, that's the local name for menhaden here is shad." I hadn't grasped that yet. Well, I did some snooping around. I found out that Beaufort is one of the few, maybe the only places that menhaden roe is eaten with great affection. Subsequently, I found out, yes, they do break some – it's called breaking roe up in Reedville. The Gulf fish, of course – Gulf, many a different species, but they're a lot smaller. So, you don't get that quantity of roe out of a fish. Literally, here, you take the fish – the menhaden adult female. It's 12, 14 inches. You grab – grasp it and break it away from you. The body cavity opens up. If the fish are fresh, the

ovaries pop out, and you toss them into a 5-gallon bucket. It's the only place I could identify where menhaden roe is sold in retail fish stores. Subsequently, you go by a retail fish store, and you'd see shad roe on the marquee. They would sell it in the supermarket. There was a little supermarket on 14th Street and Morehead. You'd see it packaged, I think, over at Piggly Wiggly also.

DH: I saw it in (CA?) Jones on Front Street.

JS: Yes.

DH: It's a grocery store.

JS: Yes.

JG: I can add that I've eaten menhaden roe that was provided to me by Joe Smith [laughter].

JS: I brought it once or twice. The timing was right. I broke some fish down at the fish factory on a sample. Then we had the Christmas party here at the lab. I fried it up and brought it here. I think I labeled it the 1995-year class, or something, fish.

JG: It's rich in oil.

JS: It is. It's very rich in oil. But to a local Carteret Countian, you couldn't give them anything better than a Ziploc bag of fish roe around Christmastime. But with the factories closed here, what little roe makes it here comes from Reedville now, the only port left on the East Coast with menhaden purse seiners. Still a lot of the fishermen, the deckhands, on the menhaden boats up in Virginia hail from Carteret County. So, they'll come home on the weekends and bring it home. I actually got a little paper – I think it's in *Marine Fisheries Review* – on the menhaden roe fishery. I just thought it was so unique. It starts right around now, in mid-November. You get a smaller class of that old fish about – the two- and three-year old fish. The industry calls them forerunners. Then about December, you get the three-, four-, five-year old fish, the bigger fish. They're the mammy shads, the industry calls them.

JG: I have two more questions that are spring-offs from this monologue that you just delivered on menhaden food – as a food fish. One is a reminder; I've actually eaten menhaden flesh, not just the roe that Joe provided to me, but the flesh. Because Joe Smith himself cooked up some menhaden one day over in the old shop and was handing down menhaden flesh out.

JS: Yes. That was one of my first couple of falls here. The age-zero class of menhaden that they catch here in the fall are called peanuts by the industry. They're small. They're 3- or 4-inch fish, at the most. We, one day, got a load of peanuts fresh, iced them down, and we decided to fry them up – to batter them and fry them up in a skillet. At first, we were cutting the heads off and taking a little scalpel and scaling them and trying to gut them. Then it's, "What's the point here?" The whole fish – 2- or 3-inch fish went into the batter, and we were just frying the whole fish. They were like little potato chips. The other thing I did was I used to like to smoke fish. I would go to some of these marlin tournaments before the feds had any minimum sizes for



billfish. I'd take these small, white marlins they brought in, but they were just going to take offshore the next day and dump. I'd fillet them out and smoke up the marlin. Well, I got this great idea to smoke some of these big roe menhaden mammy shads. So, I'd fillet them out and smoked them up. It was okay. But they were really oily. Very oily.

JG: You mentioned, Joe, again, in this monologue about menhaden – which was very informative and certainly appreciate that, but you mentioned publishing one paper on the menhaden roe fishery, I guess. So, most of your publications while you were here at the Beaufort lab for those 32 years were menhaden-related. But you also published some other papers on other fishes while you were here, cobia being one.

JS: Yes. Again, John Merriner was a great guy to work for. What a great supervisor. He'd give you plenty of slack or rope to hang yourself with, I guess, as someone once said. Maybe it was you, Jeff. But we got proficient in catching cobia. It's a sport fish in the early eighties. I knew the literature, there wasn't much on cobia life history. I had a bit of an assistantship for a couple of months with C.E. Richards up at VIMS – Clarence Richards. He was about the only one in the literature that had done anything with cobia life history. I knew Rich, and he'd worked on the fish up in Chesapeake Bay. So, John gave me some slack and a little bit of money. I started collecting cobia carcasses. I stashed some chest freezers at some locales here – Hatteras and Ocracoke's docks or fish houses, where I knew cobia were coming in and being weighed for citation purposes. I got the proprietors to save me the carcasses. So, I got a couple of hundred carcasses out of that, and life history studied. So, that was neat. It's rewarding in that some of the age and growth data is still being used in the cobia assessments. So, yes, I did that and then sampling here, my first couple years. I found it interesting that they caught thread herring here in big numbers. The fishery here off of Beaufort, there's a summer fishery, but the big fishery is in the fall, usually late October, November. Probably 70 percent of the menhaden landings of Beaufort came after the 1st of November. There was a little low around Labor Day to that 1st of November, and what shows up here is Atlantic thread herring, *Opisthonema*. Jule Wheatly's factory, they'd land several thousand metric tons a year of these thread herrings. The fish are loaded with oil. A typical catch of menhaden in the summer would produce two or three gallons of oil per what they call a thousand standard fish. It's a unit of volume. Roughly, if you took a cube 28 inches on edge, that would be their hopper that they'd measure the catch in. The thread herring, per hopper dump, they'd get 12, 13, sometimes almost 15 gallons of oil. So, it was a good infusion of catch and oil for the companies then. So, I got a little paper out of the thread herring. I started to look into the landings, the seasonality of it all. Ethel Hall, our fish ager, she aged the fish for us. Then that roe fishery, I followed that up with a little paper. I think that was in *Marine Fisheries Review* also. So, yes, they were some of the spin-offs I got into while I was here. The other papers, the menhaden stuff, I followed up with – after Nicholson Bill used to do some reports on the age and size composition of the catch, Atlantic and Gulf, I did an article or two. I think they were scientific reports for the service for the Atlantic and Gulf fishery. I suppose one of the proudest things I did well with the program was with the logbook data. Early in the program – many of the programs started in Beaufort in [19]55, and early on, Fred June, Charlie Roithmayr, John Reintjes had logbooks put on the boats, menhaden boats, on the Atlantic, followed by the Gulf later in the sixties. But they had about 50 percent participation. But from that, they were able to extrapolate where the fishery was prosecuted and when the seasonality, that kind of thing. The logbook program fell into disuse. But in about

[19]77, there was a joint effort – the state, the feds, and the industry – to rejuvenate that. They called it the Captain's Daily Fishing Report, or CDFR. So, about [19]77, both coasts, the fisheries started filling out – the captains filled out these daily logs. They enumerated each purse seine catch set they made, how many fish they caught, where they caught them, did they use a spotter pilot to help them, that kind of thing. If they did not fish, why, what reasons if they didn't leave the dock. So, I mean, we're talking about seventy or eighty boats on the Gulf fishing twenty-six weeks a year, five days a week. On the Atlantic, there were probably fifty boats fishing as many weeks, if not more. So, there were tens of thousands of these, and they were literally sitting in file cabinets beginning in [19]77. I mentioned before, Doug had a little initiative to recode a lot of these and get them put on the mainframe down in Miami, which we were doing with all our data at that time from Beaufort. That didn't come to fruition. About [19]94, and at the behest of John Merriner, John said – and this is really great data set. So, as John would do, he cajoled me into writing up a proposal. I think it was something called the Fishery Services Pioneer Fund, but we got some money for. That's when PCs, personal computers, came into vogue, and we got some money for two PCs. We got Sharon Seckler's time as a key entry person, and we went through and started – we started with the current year [19]94. As those logbooks came in, weekly logbooks, CDFRs from the industry, we got Sharon – we vetted them, and she keyed them. Charlie Krauss wrote the dBase files or the dBase program that the files went into. It was a wealth of information. So, we moved forward year to year, but we also went backwards on the Atlantic Coast. We went back, I think, to [19]85. Sharon and others helped us key those older files. We went again back to [19]85. On the Atlantic, we had [19]85 through when I retired, 2015, all those years documented. They would have been five- or six thousand records a year. Then on the Gulf Coast, where you'd have [19]70 or eighty vessels back in the [19]80s there, we got all those key-entered. Then I think in [19]99, we entered into a partnership with the Gulf States Marine Fish Commission. Larry Simpson was the director down there at Ocean Springs. He recognized the value of this data set. So, with their help, we got key entry folks from the commission to go back on the Gulf Coast and key back to [19]83. So, that data set is almost complete going forward to 2015. It was real instrumental. There's all these managerial questions with menhaden. A lot of municipalities or states want to push the vessels off x number of miles or portions of miles off the coast. So, we had that data, so we could look at different strata along whatever portion of the coast they were fishing and look at these different strata and look at amounts of fish removed over time. So, they were real – the data was really helpful in answering these managerial questions over time. I've got a couple of publications out of it, tried to summarize twelve years of the Atlantic and, I think, five years of the Gulf.

JG: Do you want to speak at all about your work in building a rapport with a ship captain so that they actually trusted the Fed coming in and –

JS: Yes. That's sort of like an old Bob Chapoton line. In my first couple of months here, he said that the menhaden industry realized early on – early on being in the sixties or so – that they were going to be managed, and they'd rather be managed by good data versus no data or bad data. So, the industry was always circumspect about individual states. I think handling fisheries data – given that the fishery is a broad fishery, on the Atlantic, from Maine to Northeast Florida, and on the Gulf, from Florida to Panhandle Texas. So, they wanted the feds to be the repository of their data. So, it wasn't always cordial. There was a lot of contention back in the seventies, at

least on the Atlantic Coast. But yes, it was like data managers' heaven when I came here. Again, I worked in South Carolina for a year at their commercial fisheries statistics office. The fish dealers – not all of them, most of them were cooperative. But they had to report their landings once a year, and it was like pulling teeth sometimes. Then you had to show up in person to some of them, and then others wanted a phone call. It was this treating with kid gloves kind of thing. But again, it was like pulling teeth at times. I came up here. The industry sent you, at the end of each month, their landings. We had unfettered access to their vessels at dockside to get our port samples. Then when we switched out permanent port samplers in Reedville in [19]91, I brokered a deal with the industry up in Reedville, and we got our Newport sample. Bradley O'barr – he's physically housed at the old office building at Omega Protein. They give him an office in Wet Lab Space gratis and have been since [19]91, I guess. They were going to tear down that building a couple of years ago. The story I got was – it was right before I retired in 2015. I said, "Well, gee, you know, what can we work out for Bradley, our sampler, up there?" The story I got was, "Don't worry. We've got the architectural plans. We've already got an office space for them up there." So, they want our presence there. They want us sampling. So, yes, I just had to pick up a phone if there was a problem with landings. Then like my last ten years, the landings from Omega Protein, I'd get the day after the fact, via an e-mail. I'd get a daily e-mail from the previous day's landings. So, their logbooks or their CDFRs, I was told that the captains would not get paid, and the crews would not get paid on Friday unless the captains gave the clerical staff five of those CDFRs for that week, Monday through Friday. So, it was a good working relationship I had with those folks. One story, Captain Al Dudley, he fished for Jule Wheatly down here at Beaufort Fisheries. I got friendly with Al. Al likes to sport fish. I like to sport fish. So, we jab banter back and forth every once in a while. Well, Al went up to Virginia when Wheatly's factory closed here. Al fished up in Virginia. We'd do long distance jabbing back and forth of who caught the biggest speckled trout. I think for that season, I had the biggest, and maybe then he bested me. I said I was going to stalk him because he liked to fish North River over there by Beaufort. I was going to find a secret spot. I'm leafing through the logbooks, the CDFRs that I got one fall. I get to Al's boat. Down at the bottom of the form was a section for remarks. I see on one of Captain Al's, "Joe Smith is a lousy trout fisherman." [laughter] I think I went to Dean Ahrenholz at that point. I said, "Dean, I think we've become a little too inbred at this point here." But so, yes, I guess I touched on a little bit of it, but in retrospect now, I've thought about how I worked with the folks in the Gulf, and we had real partnerships down there. One thing that happened in about [19]95, when Eldon retired, coincidentally, Al Gore reinvented government. That's when we lost all those on-call, temporary positions. Up until that point, that's what our Gulf samplers were. They were temporaries, but they were bona fide federal employees. We could deactivate them when the fishery was over in October. If we had hired students, undergraduates, we'd have a good chance of getting them – the same folks back the next spring so we could reactivate them in April. When government got reinvented, all those quasi-permanent positions went away. So, we were forced to write contracts. It was federal money going to the Gulf States Marine Fish Commission, and we had to write contracts through the commission for these students. That was always a stare contest in the springtime. Because the money would come down from Silver Springs at headquarters, and it would go to the regional office in Saint Pete. Then there'd be this stare contest between the regional office and Miami on who's pot of money that \$40,000 for the samplers that would be sampling the second largest fishery in the United States – whose pot that would come from. So, that got a little awkward, and there was some brinkmanship involved there. But so, I had to

work with the commission. Then I had to hire the students from the universities, and the commission would pay the students. In about [19]94, the money started going directly – at least in Louisiana, directly to the Louisiana Wildlife and Fisheries Department. So, I got to work with the state guys, and we would use their technicians instead of the students and to some extent, the Texas Parks and Wildlife folks in Port Arthur over there in eastern Texas. So, at one point, I'm working with the two commissions, the state guys, the universities, and the industry. It was a little clunky, but it worked. I look back, and I think about some of these – the proposals folks write. You're asked to partner with different agencies to give your proposal some validity, and that's it. I'm saying, "Man, I was doing partnerships before partnerships were cool." But it worked. I really had good cooperation with those folks. So, I can't say enough about the folks in the Northern Gulf that I worked with back then.

DH: I've got two things I'd like to get in here quickly before we adjourn. One was flipping back to using menhaden as a food item. When that came up, who was head of the Coastal Federation?

JS: Todd Miller.

DH: Todd Miller. Todd Miller's father was the one at NCC.

JS: Ted.

DH: He was stationed at Morehead City. In my youth, we were doing work on the radioactivity, and somebody told me to find out what's in menhaden meal and oil and stuff. So, he had the equipment. He had the presses and toy stuff that did the job. So, I went over and borrowed all that stuff from him. We actually set up a little menhaden operation here in the old turtle lab and made press and oil. I don't think I published it. It wasn't a serious problem had they been able to use it for food.

JS: Yes.

DH: I thought it's an interesting part of the lab's long-term involvement in menhaden.

JS: Yes. Like I said, the program started in [19]55.

DH: Yes. This was before that [laughter].

JS: Yes. I think there's an interesting story about Ted Miller –

DH: [19]54 or [19]55, somewhere in that era.

JG: Because you got here in [19]58.

DH: Yes.

JS: Yes. Todd's father, Ted, was a chemist by training from up north somewhere. They came down on a sailboat, him and his wife, intent on going to Florida and finding their fortune. The

story I got was he stopped in Morehead City. He tied up at the fish factory over there, which is now – that ground is now the community college. But the Wallace Fish Factory is over there. Borden Wallace's dad, the owner of the company, offered him a job because he was a chemist. He became a marine chemist and worked with many most of his career.

DH: The other thing is you explained how this huge industry disappeared so quickly on the East Coast – almost disappeared.

JS: Yes. The heyday on the Atlantic was in the fifties, and they were probably benefited by some exceptional year classes. The [19]58-year class might have been the biggest in history. According to Dean's assessment, maybe [19]52-, [19]53-year classes were even bigger. But our sampling really didn't start in earnest until [19]55. We just picked them up as adult fish a little bit later. But there were years of bad recruitment in the sixties, and the fish were only abundant in the southern half of their range, which is about New Jersey South. They weren't abundant in New England. So, those factories up north pretty much all closed that the fishery became centered in Chesapeake Bay in the South Atlantic. The seventies, the stock rebuilt. But by the seventies, it was difficult to build a fish factory up in the Mid-Atlantic somewhere. The sociologists had a name or term for it, waterfront gentrification. So, whereas there was a factory at Port Monmouth, New Jersey in the [19]60s up until [19]81, I guess that one closed. But it was within sight of the New York skyline, and you'd be hard pressed to build a factory up in that area now. A number of the states just didn't like – it was kind of a user conflict. They didn't like seeing the big purse seiners. So, they were slowly pushed off out of state waters up there – Rhode Island, New York, New Jersey. So, now it's like a one-state fishery. Virginia allows them to fish in Chesapeake Bay and Virginia, North Carolina pushed them off. You'd be hard pressed to cite a factory down here in Carteret County anymore. So, that's sort of the way the Atlantic fishery has gone. The stocks expanded. It had a resurgence in the late seventies and eighties. What do you do in New England when the stock expands? You've got a lot of fish up there, but the last factory was closed because of odor issues in [19]88 in Rockland, Maine. The state of Maine brought in Soviet factory ships to process the fish. They anchored in state waters. They kind of circumvented the Magnuson-Stevens Act. All the Russians needed was permission to come through the exclusive economic zone and anchor in state waters. That's what they did. They had up to three Russian factory ships at one time, the early nineties. American ships would fish for them and offload on the factory ships. But that's what you did with a super abundance of fish and nowhere to process them. That all that was the [19]88-year class that pretty much drove that fishery, and that was over in [19]93. So, now, you've got one factory left on the East Coast – Reedville, Virginia – and maybe six vessels, six or seven.

JG: The Gulf?

JS: In the Gulf, there's been consolidation in the industry also. In the Gulf, that's been the story down there. The big players are Omega Protein and Daybrook Fisheries. Omega, in particular, has bought up its competitors, save for Daybrook. So, there's only three factories left on the Gulf Coast. Daybrook at Empire, and Moss Point in Abbeville is Omega Protein factory. So, they've consolidated also. Fortunately, for what's left of the industry, the price of meal and oil has been very good. There's just a worldwide demand for meal and oil. The industry has switched over from putting their products into poultry feeds, historically, and now most of it goes into

aquaculture feeds – salmonid feeds and farm rearing catfish, shrimp, that kind of thing. So, it's a different industry, but again the prices for the end products has buoyed the industry.

DH: I promise this is my last question.

JS: Okay.

DH: We didn't mention oil, I don't think.

JG: Not specific.

JS: A little bit.

DH: Oil was very valuable.

JS: Yes. The byline was that the industry usually broke even on the meal. Their profits was in the oil. That's where the profits were made. Historically, the oil went overseas, Europe and Canada, where it was turned into oleo or cooking oil after being hydrogenated and deodorized. The FDA possibly threw an omission in the forties – left fish oil out of its list of edible oils. It took until 1992 that the FDA finally turned around and approved fish oil for human – generally regarded as safe is how it was termed for use in the United States in food products. So, starting in [19]92, fish oil started getting more refined here in this country and entering into some of the historical vegetable oil products like margarines, cooking oils. So, you see a lot of it going into different products now. That was a bit of a boost to the industry too. They weren't selling it in bulk. Also, fish oil capsules, you see some of it go in getting pharma refined in the pharmaceutical grade and putting it into fish oil capsules.

DH: I've heard perfume mentioned.

JS: I don't know where that came from. I've heard perfume – that's one of the old lines – perfume, linoleum, that kind of thing, rust-oleum kind of products. That probably goes back to the fifties or so or maybe before. It was in the late 1800s. It was a replacement for whale oil for a while. Then the crude oil, of course, replaced that. But for a while, it was working its way into the markets that whale oil was in.

DH: Well, I've enjoyed the devil out of this.

JG: Thank you Joseph.

JS: You're welcome. Thank you.

DH: He's always been a fascinating fisher.

JS: Yes. I'm trying to do some writing on it now. It's not like a *Cannery Row* story that the fishery survives. So, okay. Well, thank you guys. Appreciate it.

JG: Menhaden is a fascinating story, but the narrator is a fascinating person.

DH: The narrator certainly is.

JS: Thank you.

[end of transcript]