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Despres, Linda ~ Oral History Interview

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Voices from the Fisheries
166 Water Street
Woods Hole, MA 02543

Interview with Linda Despres by Joshua Wrigley

Summary Sheet and Transcript

Interviewee

Despres, Linda

Interviewer

Wrigley, Joshua

Date

July 29, 2016

Place

Social Sciences Branch
Falmouth ,MA

ID Number

VFF_WH_LD_001

Biographical Note

Linda Despres was born in Brunswick, Maine and grew up on her father's boat with her brothers learning about tuna fishing and how to navigate the sea. This ignited a passion for marine wildlife as well as being outdoors exploring nature. She graduated from the University of Maine with a degree in zoology with a minor in wildlife biology. She began working at the Northeast Fisheries Science Center in 1973. She logged over 1,200 days at sea on the *Albatross* IV as well as many days at sea on foreign fleet vessels. She served as Chief Scientist aboard the *Albatross IV* beginning in 1975 and including the *Albatross IV*'s last voyage.

Scope and Content Note

Interview contains discussion of: fisheries science, Title 9, plankton larvae, marine biology, joint research projects, foreign scientific research vessels, social differences, herring, mackerel, cultural diversity, U.S. survey cruises, age and growth studies in marine biology, parasites, Europe.

Linda Despres provides a rich, detailed description of her time as Chief Scientist. She chronicles her time spent at sea, with detailed descriptions of the daily work on board the *Albatross* IV and foreign fleet vessel. She shares the ups and downs of being a scientist throughout changing culture of the fisheries industry. In addition, she reflects on the changes in women's roles on scientific vessels as well as the transition from manual data entry to electronic data entry in the

information collection process within a laboratory environment. As of this interview, she was working on two books about the *Albatross IV*. One book focuses on the vessel, her structure and technology. The other focuses on the many people who sailed on board her.

Indexed Names

Bigelow, Henry
Bonang, Claude
Brown, Brad
Cousteau, Jacques
Crossen, James
Derry, Louise
Edwards, Robert
Fritz, Ray
Gaines, Jennifer
Gerry, Pat
Graham, Dr. Herbert
Grosslein, Marvin
Kelly, George
Livingston, Robert
Lux, Fred
Marak, Bob
Nichy, Fred
Nickerson, Sam
Posgay, Arthur
Stoddard, Ruth
Twohig, Patrick
Wigley, Roland

Transcript----EG_001

JW: So when and where were you born?

LD: I was born in Brunswick, Maine in February 1950, so I just grew up, my Dad had a tuna fishing boat and I spent my entire teenage life on weekends on my Dad's boat. It was, um, the time of Jacques Cousteau and" Sea Hunt" and that was kind of exciting to [be able] to see what was going on under the water rather than just what was on the surface. So I took SCUBA diving when I was eighteen and we'd see a lot of whales out on my Dad's boat, and cod fish and tuna.

JW: Where was the vessel moored?

LD: It was moored out of Bailey Island, Maine. Just south of Boothbay Harbor.

JW: Cooks Lobster House?

LD: Exactly! Exactly, just over that Cribstone Bridge.

JW: Right, right.

LD: You just continue on down the next cove.

JW: Beautiful area.

LD: Yeah, so it was for me, it wasn't an ideal childhood because I was stuck on the boat with my two brothers and my parents for [laughs] every weekend. But in retrospect it was, it pointed me in the career that I thought I could try to get into. When I was eighteen in high school, there was a biology teacher that really, marine biology was just beginning. Ecology [was just] that word was just getting into the lexicon. So he was rather progressive and brought us out into the field and brought us out to in tide pools and under the seaweed.

JW: This was in Brunswick High School?

LD: Yeah, Brunswick High School. Claude Bonang was my teacher. And when I was on the boat and we were tired of fishing ,we would go land on some islands and continue exploration. Dig clams, pick blueberries, you know, eat lobster. It was more interesting than just fishing.

JW: What was your father fishing for?

LD: Tuna mostly. He was um, the month of July it was a tuna tournament, Bailey Island Tuna Tournament. Back then the tuna that were being landed were between seven hundred and nine hundred pounds.

JW: Giant bluefin, wow.

LD: Giant bluefin and so there'd be forty or fifty boats that would come up from Gloucester or Portland, Boothbay, Bath, so there was kind of competition. There were prizes for the first, the last, the heaviest, the most. And so there was definitely a lot of fishing pressure on those tuna way back when. And it was a big draw at the end of the day when the fisherman could bring in their catch. The public would come down and ooh and ahh over the size of these fish and their heads would be cut off after they were weighed. Um, but even at that point, you know, sometimes one fisherman would catch so many he couldn't bring them all in so they would call

my Dad or someone else and say "can you bring my fish in?" So you've got five or six fish with one boat and they'd hoist them up, weigh them and because they were only getting three cents a pound for them way back when - one restaurant could only take one fish - and so they'd weigh them and then bring them back out and sink them. So it was a terrible, terrible waste of resource.

JW: Yeah.

LD: And the Japanese came in and started paying twenty five cents a pound and then fifty cents and then a buck a pound. And we thought" oh my God, seven hundred dollars for a tuna". And they'd test it to see what the fat content was. But there were more rules and regulations about whether or not you could have more than one fish, spotter planes were coming into being and so that was unfair. Electric harpoons were coming in that seemed unfair also. My father was a harpooner rather than a rod and reel guy, so yeah, there were changes in the industry that favored those who had the means.

JW: In what years did the Japanese buyers start to raise the market price?

LD: Let's see, it had to be in the '70s. Because I was away in college and I remember my Dad talking about it, you know, twenty five cents, fifty cents. Big bucks. And then the summer of 1970, my Dad after the tuna fishing tournament was over which was after July. [We] decided to go on a cruise and come from Bailey Island down to Cape Cod, Woods Hole. My dad had a friend who has a boat in Falmouth, Inner Harbor and I had always heard of Woods Hole. I thought someday I would love to work in Woods Hole because I knew Jacques Cousteau had been here.

JW: How much time did it take to come down the coast line? All the way from Bailey Island?

LD: Well, it was two days, and so that gave me a distorted view because I had never left Maine. It gave me a distorted view that probably Cape Cod was somewhere around Washington D.C. [laughs] because it took two days to get down here. So I think the first night we made it to Cape Ann and then the next day, we went through the canal and ended up in Hadley's Harbor where we met my Dad's friends and then they took us into Falmouth Inner Harbor. And then they loaned us their car and I got to go to Woods Hole. My dad drove. It was amazing. To this day. I can still envision where I was in front of one of the WHOI [Woods Hole Oceanographic Institute] buildings because at that point I didn't know that there were three, at least three agencies in Woods Hole. I was thinking "ah, someday I would love, love to work in Woods Hole. And three years later, I was there. So it was like, oh my god, I never thought that the power of vision would become reality.

JW: That's miraculous

LD: It really was and it was, you know I went to University of Maine, graduated there with a degree in Zoology, um, with a minor in Wildlife Biology because I wasn't sure if I wanted to be a game warden or a marine biologist. All I knew was I wanted to work outside. It was the time, '72, '73 where Title 9 was actively being supported and so more job opportunities were opening up for women and minorities in non-traditional careers.

I took advantage of that situation, and in the summer of 1970 which was also the summer that we came to the Cape, I had volunteered at the State of Maine Boothbay Harbor Lab to sort plankton larvae. And one of the opportunities that was offered was to go out on a one day trip to collect shrimp larvae and fish. So the person who had been in that position the year before had no problem [about] going out but when it came to me, the day before I thought I was leaving I was told I couldn't go out. When I asked why it's because the trip was leaving at ten o'clock at night and it was going to be an overnight trip. Because I was a lady, I couldn't stay on the boat with all the guys that were there. So I raised a little ruckus and the day that they did leave was a foggy day. So they left and they came back.

So that gave me an opportunity to speak with others when I found out this was a federally funded program for me to work there, and somebody, and I don't know who in the administration just moved the time, from ten o'clock at night to 12:01 and I went to the same cabin I would have been at the night before, the day before. And I had one day worth of experience of weighing, measuring and sorting fish and doing plankton work. Which when it was time to make my application to Woods Hole, they were looking for a technician who could weigh measure and dissect fish and do plankton. I didn't say that I had one day worth of experience. I just said that I had experience [laughs].

JW: So that one little change in the time that was, that made all the difference?

LD: That made all the difference and I am forever grateful for this unknown person to have accommodated my need, my enthusiasm, to go out because I had been on my Dad's boat all these years so I wasn't going to be a liability and I was familiar with at least the Maine fish. It was great to be outside so I didn't get sick and I worked! [laughs]

JW: Was this when the NMFS Boothbay office was in operation?

LD: That's correct so because I worked with the State of Maine and the federal laboratory, there was one building where we usually had coffee together and parties together. It was a very close knit group. And when they did close that lab, it was the same year I started working, in '73. And so people thought that since I came from Maine, I had worked in Boothbay and I knew some of these guys that I had been part of the transfer but it was great. Whatever illusion they thought I

[laughs] was working on. But like I said it was a good time to be there. It was interesting because I saw the closure of that lab and I saw the Gloucester Lab close, the Sandy Hook Lab burn, the Maryland Lab trying to decide whether or not it was going to stay open or be absorbed then disappear. The Washington Office, Smithsonian, you know, it's in a different state now, a different state of being. I have seen the contraction of many of the facilities to go from independent laboratories to a Center based organization. That's a major change in the forty years I was there.

JW: Right, um, I realized that I forgot to introduce the interview before so I am just going to say a couple of short words here and then we can jump back in. This is an interview for Voices From the Fisheries as part of the Voices from the Science Center's Project funded by NOAA's Office of Science and Technology. I am Josh Wrigley, Project Manager of Voices from the Fisheries and today I am speaking with Linda Despres at 15 Carlson lane which is where the Social Sciences Branch of the NMFS is located. The time now is probably about quarter past ten. The date is the 29th of July, 2016. Linda has occupied several roles here and one of those has been Chief Scientist aboard the *Albatross IV* during her career. Today' s interview will be focusing on her career and perspectives on developments in fisheries science. So jump back into things now, um so you came on in 1973.

LD: July 2nd.

JW: What were your responsibilities at that time when you first arrived?

LD: When they said my main responsibility was to go to sea, it was like I died and went to heaven because that's what I wanted to do. Be outside and go out on the surveys and weigh, measure and dissect fish. There [were] many species I wasn't familiar with so there was a steep learning curve there. So that was July of '73 and I think by September, this was also a time when we had joint ventures with the Soviet Union, Poland, France, East and West Germany. Many staff were not excited about going on the Polish and Soviet and East German ships. So I volunteered. The standard of living on some of the ships was rustic, the food was questionable. Language was difficult to communicate but French is my first language, English is my second so I enjoyed the challenge of learning to basically communicate and I had a little notebook I would keep in my pocket and write down helpful phrases like "where's my cabin?" in Russian.

At the time, we had ships that were here for three to six months at a time so there were many opportunities to go out on these boats. You've got to have friends, make friends, and there are still Polish people that I have known for forty years now and I have an adopted [Polish] family[11] now and it's, my whole life has changed because of that interaction. Yeah, I just, I remember a

[1] I have known the family for four generations.

Russian woman sitting across from me and touching her face and then my face and then she nodded her head. And then she touched her nose and my nose and she nodded her head. Then she touched her tongue and went to touch my tongue and then the only difference, shook her head, and the only difference between us was our language because everything else, you know because I was the "better off dead than red" generation. You know the Soviets were evil.

JW: A lot of Cold War tensions still at play here.

LD: Right, and so it was a revelation that, you know, that they were people just like us. It was a challenge to learn the different languages but it was exciting. I still have all my diaries that I kept whenever I was on those ships. What we ate, what we did and um..

JW: What were some of the joint research projects that were going on at that time between the United States and the Soviet Union and Poland?

LD: Most of it was some on fishing because at that point the 200 mile limit had not come into effect until, I think, '76. So between '73 and '76 there were large fishing fleets off our coast. I can distinctly remember one night seeing a city of 20 to 30 vessels just on the edge of the continental slope. Just moving back and forth, back and forth. Most of them were looking for herring, mackerel and squid. which were not on the American palate at that time. But they also caught other species that were, some of them were bottom trawling, some of them were mid water trawling. But it was part of, you know, the politics of the work that I did which I never wanted to get into the political aspects of it. I was more just a blood and guts biologists. Give me fish and I'll process it. Um, and whatever platform I was on, I would enjoy the company and the food was questionable but that's alright.

JW: What did the food consist of on foreign vessels?

LD: I'd say the Soviet vessel was mostly potatoes and cabbage and some sort of mystery meat which sometimes ended up being horse. Eggs, a lot of eggs and brown bread that had a strong yeast flavor. Something called compote which was dried fruit. I ended up calling it compost because it wasn't that flavorful but yet on the Polish ships, you know, we'd have fresh fish. We'd have like a fruit cocktail type beverage that was definitely compote. Whoever the cook was, was a better cook than the Soviet ships. French ships were quite elegant, white table cloths and silver napkin ring holders and three to five courses depending on whether it was lunch or supper.

JW: Luxurious

LD: Wine, yes. German boats, a lot of different types of knockwurst, sauerkraut, potatoes. Not as social, not as many social interactions when you were at the dinner table as opposed to the French where meals were two hours. A little siesta afterwards.

JW: More of a social affair.

LD: Yeah, supper was two and a half hours during your twelve hour work day. It was definitely the variety of eating and social interactions were vastly different depending on the ship. I was never on a Japanese ship although we did have cooperation with them also. Mostly for mackerel.

JW: How frequently did you ship out with the foreign fleets?

LD: There were a couple of times. There were a couple of opportunities where, I think, I made probably fifteen trips on the ships when they were here. And then I made a trip on French ship off the Normandy coast. And then a trip on the, off the North Sea on a German ship where I had a subspecialty of fish diseases and parasites. It's a much bigger concern in Europe for the appearance of a whole fish rather than the filleted fish that we have here in the U.S. So Europeans want to see the eyes, look at the gills, touch the flesh and see how fresh it is. Where in America...

JW: So they are more accustomed to cooking it on the bone, I suppose.

LD: Right, so any physical anomalies, parasites attached or lymphocystis skeletal problems or any type of ulcer or growth on the skin, those aren't marketable. So there are so many countries that border each other, and the fishing pressure in the North Sea as well as off the coast of France and England. There are many opportunities for fish to be disfigured. So I was part of a, I don't know what they call, ICES [International Council for the Exploration of the Sea] working group where we went with an international group of fish pathologists and tried to establish standards so that when we reported our diseases, we were all [coming] from the common baseline. Rather than my personal experience with say, oh my god, if I saw lymphocystis which looks like raspberries or poison ivy on a skin, I would say that's unbelievable. But it wasn't until I got to Europe where I would see a whole filet with lymphocystis. So based on my experience I might have registered that as a much higher incidence of importance [than what] the Europeans would. We all had to come to an agreement as to how severe the problems were because it seemed that at the borders of each country, incidences would go up or down based on your personal experience.

JW: Was that mostly attributable to pollution you think? To fishing pressure or....?

LD: A lot of it…it was an interesting combination that it could have been pollution related because so many countries at the time were just open sewers into the North Sea or closed bodies. But a lot of it was fishing pressure whereas there was different sized nets that were used by different countries that if a fish managed to escape um, somebody's net, you would, that protective slime that is on the fish surface would be sloughed off, So if they were...

JW: Leaving me susceptible to the bacterial infection.

LD: Bacterial, viral, whatever was there. So that was an opportunity for entry for tumor growth. And then there was also an observation that was made once accusing nuclear power plants of creating monsters. And it took somebody who was not involved in the fishing industry to step aside and look at the [fishing] practices because fish normally migrate up and down the coast or in shore, off shore. But nuclear power plants, the water is always the same temperature. There is always a ready source of food for them so fish that would be lost during a migration, because they are not strong enough, could stay in a localized area and be healthy. But what would happen would be the fisherman would see these diseased fish when they brought their catch on board, kick them back over the side and take the healthy ones. So over time, there were a good healthy population of sick looking fish. And so somebody would say, that was due to the nuclear power plant creating these abnormalities. So it was rather interesting because human population, everybody has something wrong with them if you look at them close enough. If you didn't see it on the skin, you could see it on the liver. And parasites so...

JW: What were some of the common parasites that you encountered during that study?

LD: A lot of them ended up in the tumors, the livers normally had tumors in them. The parasites, some of them would be under the gill that would go straight into the proboscis, the [proboscis] would go straight into the heart. So they would look like a red cashew. And so that didn't affect the meat but it did affect the strength of that fish. Others were parasites that would embed in the flesh of the fish which would make it unsellable. We still have the issue here with cod on the East Coast. The people who fillet cod will actually candle that filet to make sure there are no little parasites in the flesh. There are other parasites that end up in the organs and since we don't eat that, those sort of get minimized. But if it's on the skin or in the flesh, then that was a marketing situation that had to be taken care of.

It was interesting to see that once we established our own disease and parasite program here on the East Coast how relatively minor this problem was. It was, we would see lobster disease which we still at this point don't know why the shell disease exists or why it’s worse in that Long Island area. Sometimes some of the parasites that would be in the cod flesh have a known association with seals so if the seals that eat the cod that eat the snails that have eaten the seal feces, you know, and the life cycle continues like that. Then we know that these cod were at

some point inshore because the seals aren't offshore. So we would know that oh, we must be in shore if we didn't know where we were, we must be inshore because...

JW: Interesting indicator there.

LD: Yes, it definitely was. That was just a side interest I had at one point in my career.

JW: So did that culminate in a paper for ICES?

LD: Yes, there were several papers that were written because of this joint effort. They still exist [laughs]

JW: So in the early '70s, in Woods Hole, do you recall what the layout of the main lab was like in 1973?

LD: So in '73, the laboratory had been, the current lab had been built and replaced. The two mansions or cottages that one was a residence, one was a laboratory. So it was rather non descript.

JW: This is the main lab where it stands today?

LD: The main lab, yes, and that first lab opposite the entry, that was a main wet lab. With live tanks where fish were, cod and haddock and others, were being studied just to see what their fecundity was. Counting eggs and just learning the basic biology. Even though Bigelow and Schroeder had written their unbelieveable, *Fishes of the Gulf of Maine*, I mean a lot of basic biology was already there. But to me, these guys were incredible for the conditions that they had to work under. And the observations they had to make and their contact with the fishermen to incorporate their anecdotal information with the fisherman, But we were trying to get more precise data. So that was the early, when I remember that. I remember the wet lab, not tunnels but they were underneath all of the offices. There was like a chute where all of the excess water would be recycled out of the lab. I remember mostly offices, mostly men in the offices. But at that time, I was so excited about going to sea but I really didn't pay much attention to who was at the lab especially the older guys because it was like Posgay. Who's Posgay? George Kelly you know?

JW: Who was center director at the time?

LD: That's a good question I'm wondering if it was Bob Edwards? It wasn't Herb Graham. Um, although I met him later.

JW: Cause he had been there when he *Albatross IV* was commissioned right?

LD: Correct.

JW: In '63?

LD: In '63, he was. Herb Graham was there also when it was decommissioned in 2008 which was amazing that he was there for both ends of it. To see how spectacular it was, how exciting it was too, when it first arrived. And I think Pat Twohig might have been there when it first arrived too. So that will be a story I think it was like Thanksgiving Day that it came in.

JW: I will have to ask him.

LD: Yeah and then again when it was decommissioned. It was, like I said, from '73 till 2008, was my time on the ship. And a little bit over it was probably 1,200 days on the *Albatross* and the rest was on the foreign vessels I worked on.

JW: So you didn't really work on land too much.

LD: No, in the beginning, it was like a hundred days a year at sea.

JW: Wow.

LD: You, know sometimes you would come in on the Friday and you would have the weekend off and go back out on Monday. We worked six hours on, six hours off, twenty four hours a day on the *Albatross*. When we were on the Soviet ship, that to me, I thought was the ideal situation. Eight on, eight off. Four on, four off. So you got a good eight hours of sleep so you didn't feel like you needed to sleep again during that four hours you were off. Whereas on the *Albatross*, those six hours that you were off, you had to eat a meal when you were finished and then they woke you up to eat another meal [before you went back]. So yes, you might have gotten eight hours of sleep a day but it was a four hour period.

JW: Always a little but sleep deprived.

LD: Always sleep deprived. And then on the French vessel and the German vessel, we worked twelve on, twelve off. But working on the French vessel was two hour break for lunch, two and a half hour break for supper so it was not a very productive work day. [laughs]

JW: More enjoyable I would imagine, but...[laughs]

LD: Yes, yes. It was, their work ethic was a little different than ours. [laughs]

JW: What was the geographical range that you were covering then when you were sailing on the U.S. survey cruises?

LD: We always went from Nova Scotia down to Cape Hatteras. And then after the 200 mile limit went into effect we did not survey beyond the Fundian Channel. Prior to that, we had cooperative work with the Canadians. So we would survey on our side of the Georges Bank. And then we would survey on their side, we would exchange data and there were many joint meetings about how many fish were out there.

JW: That was before the establishment of the Hague Line?

LD: Right, so we then needed permission to fish in the northern part of Georges after the Hague Line went in. They needed permission to fish on our side. In retrospect, it was probably a good idea that we did not get the whole of Georges Bank because it was amazing, amazing. When you were totally out there, you had no idea of where you were when you were out on Georges. But as soon as you crossed this Hague Line, the amount of cod and haddock that came on board, it was like there was a line that went straight to the bottom and it was like, "oh we must be in Canada" because the cod and haddock were just abundant, abundant.

JW: What do you think was responsible for that rise in fecundity, getting into Canadian waters?

LD: I think...

JW: How did people discuss it at the time?

LD: That's a good question because I was not part of the assessment group. I was there to capture the raw data . But I believe that that was a great spawning area. The bottom wasn't disturbed because it was really too far for the Canadians to come and I think it was a National Park and so they weren't destroyed. I mean it was really the last few years of my fishing. There were closed areas butt up against the Hague Line. And there was the other one in the South Channel area. And if you fished in between those two closed areas, it was like a biological dessert. I mean, you'd catch sea raven, sea robins, you know, a few flounder but there was hardly anything there. And it was so surprising and so obvious when we [did] go into the closed areas, how much more fish there was there. And the fishermen knew this too because [with] their tracking systems you can see where they are and when the change of tide would occur, how some of the fish would go beyond the borders and they would be caught. Those closed areas were a good idea.

JW: Those were the scallop closures, right?

LD: Yes. but the, yeah so there were a lot of yellowtail in those closed areas. There were lobsterman in those [closed] areas and the scallopers but not any draggers so, I think the, not having draggers in that area really helped keep the ground fecund. It's sort of like, I like to make the comparison that especially in the Georges Bank area, if that was a field and you had, nobody owned that field. And then you had a farmer that went in a planted seed and then another guy came in and planted seed. You know, the seed would be covered and covered. And if it's spawning time in Georges, you have all these draggers coming in and all the eggs go to the bottom. They get smothered and so you need to give them, as far as I know, at least three weeks in order to get off the bottom so they are free swimming you know so you got to let the field lie fallow for a while. So yeah, that was, that's it's hard to believe that you could fish out some areas with the intensity that we have.

JW: What was the average harvest when you would haul back in the early '70s, 1973, was there an average amount that you would get? Or what was the average tow size then?

LD: It was, it would be a lot more cod and haddock and pollock and white hake, but it seemed like there was more diversity and poundage. Didn't seem to be as many, I don't remember as many big dogfish catches. But boy, in the last few years, we went through a haddock crises and then that sort of rebounded. We're in the cod crises now, that one hasn't rebounded but, boy, the dogfish definitely rebounded. So the dogfish seems to have been the major species when I retired. I remember barn door skates. I remember reading in the '40s, they used to have very large barn door skates. Five and six foot barn door skates. And it was nineteen years before I saw my first barn door skate. And then by the time I retired, we had dozens of barn door skate that were coming on board and some with size. So where were they for all of these years? I remember halibut were, you know, probably fifty, sixty pounds. And then, you know, if we had a ten pounder we would quickly weigh and measure it and throw it back over the side. And you know we were getting maybe twenty, twenty five pounders by the time I left. So there is a cycle here that is a mystery but sometimes if you close off certain areas, maybe it is like farming. You have to rotate, rotate that field.

JW: So when you were aboard the ship, umm can you go over how the data was collected? You know in the early '70s at the beginning of your career? What was the process and the routine of the ship before sampling?

LD: We would always, back in the old days when we got on station, there was something called XBT Expendable Bathythermograph which looked like a little bomb attached to a copper wire. And we put it into what looked like a gun turret. And then we closed the breach, pull the pin and then that little copper wire would send a signal back to the ship as to what the temperature was

because there was this little thermasture at the head of this little bomb. And so that indicated what the bottom temperature was at the, well the whole temperature profile. As well as the bottom temperature.

JW: From the surface to the bottom.

LD: From the surface to the bottom. And then we would put a plankton net over the side. And it wasn't, I don't believe at every station, yeah it probably was at every station we did a plankton tow. And after that we put the net in the water for thirty minutes and then bring it back on board and we had a large sorting box where the six scientists would gather around. Wire baskets on the ground and then we would throw fish to each other if you happened to have the haddock bucket or the butterfish bucket…

JW: So the sorting took place right on deck?

LD: Right [on deck] after the net and doors were secured, the fishermen said it was safe for us to go out. We didn't have survival suits, we had PFD's when we first started going out so we would have fire and boat drill when we would first left the lab. Um, didn't have hard hats at the time also, that came later as well as the survival suits. As we were sorting the fish then as the baskets would get filled, we'd drag them over to the weighing station.

JW: Where was that located aboard ship?

LD: That was also, it was also, um, under cover. So there was an overhead so we were protected from the wind at that point. So we had circular scales where we would put the lighter weight buckets. Depending on the roughness of the weather, you know, that was an estimate or oh, that looks like it's 2.3 kilos. And then we would have a beam balanced scale . So we would have this beam balance with a heavy weight at one end and then a strap that would go over the basket. And then we'd hoist that basket up onto the hook of the beam balance and then we'd move that balance over to where we would eyeball it so that it wasn't hitting someone in the head and then we'd get our weight based on that. And then we'd have three locations where we would start dissecting the fish. Weighing, um, we had weighed it, measured it and then dissect it. So at that time, we'd have one biologist that would measure the fish and call out the number to the recorder who was standing next to them with paper and pencil and stroke tally the catch.

JW: To record the length?

LD: To record the length. And then there would be a certain number that we would identify to be further processed for stomach and for age and growth work. So we'd take some of those fish, re-measure them and then do the age and growth and food habit analysis on them.

JW: How did you determine which species to perform further age and growth studies on?

LD: There was a list of requests and always the highest priority requests were always the food habits and age and growth because we could extract that information on the same fish. So they had the highest priority. If time allowed, then Universities or private investigators would request a gonad or a piece of flesh or blood and so we would process those also. But the age and growth and food habits, it was based on length, they needed [so many within] a size category. So we would do that. So whatever we did for age and growth, we also did for food habits.

JW: Were there specific species that were of interest for age and growth?

LD: The primary ones and then again those were prioritized. It was always cod, haddock, yellowtail and then down the food chain, it would be mackerel and herring and sea robins and sea ravens again if time allowed. But again, we had much larger catches back then. So we would have to sub sample. So there were times where we couldn't, you know, we couldn't even weigh all of the baskets. So we would make sure that they were all filled. And we would take ten baskets. Take an average of those ten baskets and say we'd threw another fifteen over the side and get a total average. With dogfish, we would count them as we flung them over.

So yeah, it was um, very fluid but you know we had trained the group that I was in. There had to be at least one from my office on every cruise whether we were Chief Scientists, Watch Chiefs or whatever, in order to make sure we had all of the same operating standards. So and then back in the old days also, we'd try to have somebody from food habits and age and growth and plankton. Again to make sure that their needs were all met. But then things changed and the more of the staff from my office were going out. And they were doing double duty and plankton, as well as oceanographic as well as age and growth and food habits as staff diminished in those groups. So our group became a bit larger because we had more responsibilities. Not only for bottom trawl survey but for scallop, clam, and shrimp surveys. So pretty much the staff in the survey unit went out on every type of trip except for exclusively plankton surveys, exclusive food habit surveys, or marine mammal surveys. We were not part of that.

JW: And when doing the sampling, how many people would usually be working on deck at that time?

LD: Normally there'd be twelve, I mean six, we'd have two shifts of six people each.

JW: OK

LD: So, there'd be twelve scientists and a chief scientists. So if the Chief Scientist, remember, back in the old days, if somebody had to step away to go do a XBT or had to do a plankton then the Chief Scientist would step in and make sure that the team was running smoothly. And they would work with the Captain to determine how the cruise track would go based on weather and sometimes in the old days, we didn't have very good TV reception but on a Sunday you could probably maneuver a cruise track close to shore. [laughs] We could get some TV reception to watch a football game.

JW: You had ABC, CBS, NBC?

LD: Yeah, just to, you know. That helped moral a bit. Because we didn't have e-mail. We didn't have satellite. It was like a closed band or just a radio that we used once a day in order to call in where we were, what we had been catching. It was a radio room at the lab that the *Albatross* would come on first and then the *Delaware* would come on afterwards. Just to prove that we were still fishing. Or we are getting ready to go into port because of some medical emergency or some weather related. Every day was different. There were no ever two days that were ever alike.

JW: When the stomach sampling and age and growth information was being taken, did that occur in the same place that weighing and measuring happened?

LD: Mhm.

JW: Was that the wet lab somewhere else?

LD: No, there was an attempt at one point to go into the wet lab and we had a conveyor belt system that would get us inside so we weren't so exposed to the weather. But unfortunately when you have whole fish going in. And then you've got pieces and parts going out, sometimes all those pieces and parts don't make it into the basket and so there was an aroma that built up within the ship. [laughs] So we said you know? It's much better, it's closer to re-depositing it over the side. We preferred working outside. So everything happened, we tried to finishing the weighing and measuring first and then we tried to do the dissections after that. And again we continued until either we continued processing or we were already on to the next station. Then we'd have to throw things back.

JW: So if you were in the middle of doing that then and your shift ended, would the next crew members in the next shift just come on and resume where you had left off?

LD: Correct. If you were a cutter, there was some sort of, not hierarchy, but there was some sort of unspoken situation where if you were mainly a cod, haddock person, whoever your gadded

associate was on the other side, on the other watch, they would come and look over your shoulder and see where are and say, "Okay, I can take over from here". If you were a flounder person then you went to the flounder station or the miscellaneous one. So you developed an expertise so that when you are looking at the gonads or identifying fish contents in the stomach, you develop that expertise and that was good to be consistent across the two shifts. We always, even though our watch would begin at say noon time, they would always ask you to come up ten minutes earlier [just to observe and] to get dressed. To get your all weather gear on and get dressed, look what's going on. It was probably one of the first things we would do when we would get up before [we had our meal] we went on the shift was to see where we were on the map and if they were still working on deck. Because if they were not working on deck then we could linger longer at the dinner table, didn't have to rush. When you woke up at midnight to go out on a cold icy deck when you had been in your bunk nice and warm and then to have to experience that harshness it was like, "why I am working the midnight shift?" [laughs]

JW: It must have been jarring.

LD: It was um, but then on nice days in the summertime when it was so hot and flat calm out there and oily calm. You could see fish and whales and turtles you know sharks. It was, you know, "this isn't bad". But it wasn't reality. [laughs]

JW: Were there procedures for if the weather deteriorated to such an extent that it became impossible to work out on the deck?

LD: Mhm, so that was normally a call by the Officer on Watch in consultation with the Captain. And they would talk with the Chief Scientist too and say, "boy if we could get one more station, then we could sneak off" . Or if they knew that there was a big storm coming we would have to stop and run in. The Chief Scientist did not have final say over the safety of the ship and the operations. So we would stop, tie everything down and then hang on. [laughs] Because there were many times when food was lost. Dishes were broken. Jars filled with formalin, formaldehyde broke.

JW: That must have been pleasant.

LD: Yeah, going to sleep in your bunk, trying to stay in your bunk. Those were all unpleasant memories.

JW: Who was Chief Scientist on your very first cruise?

LD: Fred Nichy, um, I distinctly remember that also, because he, for two reasons. One was the very first time. When we left there was always , the chef always had the same menu. Mondays

was steak, Tuesdays was something, Wednesdays was pasta, Thursday was something. So it was like the menu didn't change much. So the first night was steak and everybody is excited about their first night out. And we always had some volunteers or new staff that were going out. Steak on the first night, this is great. But sometimes they didn't realize it wouldn't stay with them because of the rough weather. And so I remember him, we always would say if you are feeling uncomfortable, carry a bag with you or hit over the rail and make sure you know which side the wind is blowing. And sometimes they couldn't make it so they would be sick in the sink, in the wet lab sink. And I remember him unplugging the sink with his hand. And I said "there is no way. If that is part of the Chief Scientist's responsibilities I will never be Chief Scientist". [laughs] Yeah, that was definitely an eye opening event.

And then I had to go down and ask him a question one time when we were at sea and I knocked on the Chief Scientist's door and I looked and he was standing in the corner and there were a bunch of shavings in the deck. And he was in the process of making violins. He had brought material, wood, out and he was doing the rough cut of shaving wood into a violin. He had studied extensively how the old masters made and glued the pieces together. And it was like, "wow". I never expected it and I think I only saw that once. But the other people...

JW: It must have been difficult doing something that requires such delicacy and precision on a rolling ship. [laughs]

LD: Yeah although it was a summer trip so it was in July so it was a little calmer there, But yeah, sometimes you'd see unusual things. You know, some people did wood carving, some of the fisherman did wood carving. On the foreign vessels, they used to take lobster and little lobster men from the shells and one of the claws would be the head.

JW: Little human figurines?

LD: Yeah, little lobster figurines, yes. Some of them painted scallop shells. Very nice scenes in the scallops shells. Sort of like what the old time sailors did with the valentines.

JW: Hm, scrimshaw?

LD: Scrimshaw, yeah.

JW: How were the various destination points plotted for the trawl surveys? You were determining the course?

LD: Right, we would determine the order we would get them but prior to our sailing we would have these charts and Marv Grosslein had determined that the, all of the coast, the East Coast

would be cut or subdivided into large, irregular shaped areas. Those were called strata. And then within each strata, there were one and a half by two degree blocks that were numbered within each strata. So the size of the strata and the number of blocks there was some statistical way to determine that three blocks within strata would categorize the fauna within that strata. Larger strata probably had ten or twelve blocks, out of ten or twelve stations. So they were randomly selected. So we would look, "ok we have a hundred and thirty eight blocks in this strata, I need six". And so the table of random numbers would say, one, four, thirty nine whatever. So once those were plotted onto a navigational chart, Chief Scientist would just look to see what is the most efficient way to access those points. Often times that changed during a trip because of bad weather or we would have had to make a port call so we had to do some inshore stations first. Some people would zigzag inshore, offshore because if we went inshore, we knew we would be hit with, especially down South, a lot of anchovies, butterfish, squid that were very, very tiny. So that would take more processing time. So sometimes we would go off shore just to get a break. Because later on in our career, we worked 12 hour shifts. So 12 hours on your feet was a bit demanding especially if you just did all inshore stations in one day.

JW: It's a lot. What were some of the greatest challenges of entering the workforce here at the pivotal time as the Center was beginning to diversify? What were the challenges of being in such a male dominated workplace?

LD: It was interesting because we didn't have that many younger peers. We had mostly older fellows like Marv, Fred Nichy, Posgay and George Kelly. So I didn't know them as sea going biologists and there were very few like Fred Lux, Sam Nickerson who were still going out to sea when I came.

JW: Had they all worked on the *Albatross III*?

LD: UM, not all of them. Some of them had worked on the *Albatross IV* since it came in '63 so they were there for ten years before I showed up. It was interesting, it was harder on the ships because the fishermen either came from Gloucester or New Bedford, either Italian or Portuguese. There were three categories that they would put us women in. Either they ignored us, they adopted us as their daughter, or they tried to molest us. The molesters we sort of steered clear from. Those that ignored us, you know, we just knew who they were and they didn't talk to us and we didn't talk to them. They just didn't feel it was right that women were on board the ship. It was bad luck and they wouldn't be able to carry their own weight. There were three or four of them that adopted us as daughters and they showed us how to fillet fish. They showed us how to dry fish, putting it in a salt solution and hanging it to dry, salt, to salt the cod fish. They were very good.

At the lab, yeah there was, it seemed like in '73, '73 to '75, there were men and women of the same age coming in. They were our peers, there was no problem with us going out. The women tended to say, "I can handle that fish. I don't need help. Let me carry the basket. Let me cut the fish". So we were sort of the Susan Butchers." I can do it, just give me the chance to do it. And if I can't I will ask for help". So that was a big change when I left because when I first came there were no females in the engineering department, on deck, even in the galley and then officers. And when I left, there was somebody in every category. So that was a big change. And I remember when some of the old guys started to retire and got the younger guys on board, they would always ask, "well who is coming out on the next trip?" And we'd know and it would be no women, it would be all guys coming out. It was just the way people signed up and they'd be "oh". And they were looking forward to having women on board the ship which was so strange that at least there wasn't three women. We needed to fill a cabin.

JW: Is there a certain time when you remember seeing that change take place?

LD: Yeah, '75 when I went out as Chief Scientist for the first time. It was the first time that we had women, seven women and six men. The women were in the majority. That's the first time ever that happened. And the ship didn't sink.

JW: I think I saw a photograph of that cruise in some of the materials that you had given me.

LD: Yeah, that was a big deal. It made the newspaper to have seven women go out.

JW: Who were the other women on ship that day? Or not that day, during that cruise?

JD: Oh boy, that's a good question. I have to look that up again. I believe Louise Derry was there. And we had a couple ladies from my office were there who have since passed. And we had a couple volunteers. Two, maybe three volunteers. It was interesting because I remember going through the canal and it was really rough and so we lost some people right at the beginning of the trip to sea sickness for [about] three days. And it was the first time, I had done plankton work, I had done XPT work, I had done the fish work but I had never done it all at the same time. There was so many people down, we had to do double duty.

JW: How did you compensate for that?

JD: We, I worked later and longer and then one of the fellows, Bob Livingston, God bless him. He was on the opposite watch, God bless him and so he did the same thing until we could all regroup. When I got through the East end of the Canal and I saw the waves going like that I thought "this is going to be bad" and it was. We were just exhausted after two to three days but by then people were coming in and wanting to live rather than wanting to die. [laughs]

JW: How many days were you out at sea for that trip?

LD: I think it was only seven days. It was a short trip and maybe it was more of a test to see if we could do it. But it was short but it was good and the Captain wrote an nice note to the lab director to say I had done well. Ironically, his ashes were just put to sea on the *Bigelow* two years ago.

JW: What was his name?

LD: Yes, I'm drawing a blank.

JW: If you can't remember, that's okay.

LD: I'm drawing a blank. It will come to me.

JW: Do you have any other thoughts on how the science has changed? From 1973 to now or how the Center's organization has evolved? Anything like that?

LD: Well, the work that we do at sea now is definitely more automated than it once was. To go from scales that were motion compensated estimates of, you know, one pound or three pounds or five pounds to getting a decimal point to thirteen point two. When we started the electronic scales, that was pretty significant. And then to go from paper logs to electronic data entry. That was a big change also. You didn't have to, you didn't need a recorder to write the information because sometimes people in the old days if they said thirty you weren't sure if they said thirteen or thirty. So whatever that person heard is what got recorded. Then we would find an error saying a thirteen centimeter fish did not weigh three pounds. So now with a magnet at the end of your finger that would tap the end of the tail and then that length would get automatically entered into a database and then you hit a button on a scale and that went into another database. It was like "Oh my God, this is great." Fewer methods of entering the incorrect data.

JW: When did that technology start to come online?

LD: Boy, it was probably fifteen years ago and the Marel scales. They were used on commercial boats and they were expensive but they worked out very well. And then the technology moved to the *Bigelow* where we were inside processing. And instead of having to muscle heavy baskets of fish, everything was on a conveyor belt system so there was no lifting anymore. The fish were dropped into a box. Conveyor system brought the fish to you. You sorted the fish in baskets next to you and then you pushed those baskets onto a conveyor belt system which got onto a scale which went down another conveyor system and all you had to do was tip that basket into a

trough. And then you just picked up a fish and weighed it and dissected them. That was a major change in the ergonomic of fish processing.

But I missed not being out on deck. Not seeing the sunrise, the sunsets, the whales, the birds. There were just two port holes that we, sometimes you were so busy, you had no idea that day had turned to night and vice versa and there was no fresh air. And you were definitely on your feet for a long time processing. But the fishing, we had a different net. We were fishing for twenty minutes rather than the thirty from before. It was a higher opening net so we were hoping to get more pelagics as well as bottom fish. It was a different dynamic when we moved from the *Albatross* to the *Bigelow*.

JW: And did the role of Chief Scientist evolve at all in terms of its' duties and responsibilities during that time?

LD: I spent most of my time on the *Albatross* and when the *Albatross* and *Bigelow* were working side by side, I stayed on the *Albatross* because I was familiar with the fellows that I had grown up with. Some of them I had known since I was twenty three when I started and the guys were, people were dating each other, getting married, getting divorced, having children, becoming grandparents so I knew them very well. I didn't know the people on the *Bigelow* as much and so I just opted to stay on the *Albatross*. So when I did sail on the *Bigelow*, I did not sail as Chief Scientist. There was the electronic data collection and the responsibilities were changing, almost on a seasonal basis. It was just too much for me to deal with at that point and so there was a younger generation that really enjoyed the challenges of doing that. So I went full circle, I went from being a technician from the beginning to being a technician at the end. That was okay.

JW: Well, I guess that's, we have sort of come to the end of things here but if there are any parting thoughts or other comments you'd like to make. We still have the machine running so...

LD: Yeah, I think the major difference I see in the politics of the fishery is like I said, in the beginning we were mostly a fish biology oriented laboratory and towards the end we were definitely more number crunching. Coming up with the assessments, using different methodology to find out how many fish were out there. And we became more regulatory. Which is what I always thought the regional office was more regulatory. We did the pure science, they did the regulations. But somehow the last few years that got blurred and so we were affected more by different timelines and responsibilities that we didn't have in the beginning. The social science group didn't exist when I first came. The marine mammal group didn't exist when I first was at the lab. So it was strictly food habits. Age and growth, find out how many fish are out there. Some oceanography and then Roland Wrigley with the invertebrate research that he did. Just to identify what was out there. And now that collection is at the Smithsonian so that was groundbreaking work that they did. Bob Marak, he just passed and he did the development of the

bongo nets and I think when you speak with Pat, he was on the cutting edge of technology along with Jim Crossen with the underwater camera, that was tested on the *Albatross III.* So some of this early work, underwater work, with really bulky equipment or not the best technology still to this day is regarded as groundbreaking. Some of it hasn't been improved much. The role of women at the lab now, there is definitely more women at the lab at all capacities. Not only at the sea but at the lab.

JW: Are there any other gender barriers that you still observe that have not yet been broken or have things that have reached a level of equity in your opinion?

LD: I still believe that there are barriers at the administrative and Division Chief level. We have had one Center Director, female. But there was always, it's kind of interesting to see that sometimes with women, they feel that if there is a position that's open, an administrative position, they have to know all about budgets, all about programming, all about, they have to know all details about everything because they are scientists and you develop a specialty and you don't embarrass yourself by trying something different because you don't know much about how money is allocated. About how the administration works. But what I find with men, that's not a barrier. They will either learn it on the go or they have support staff that will give them the budget numbers. So, I see that sometimes as a self induced barrier that women have. That may be changing but I haven't been at the lab in three years now. But that was something I definitely observed, it's interesting that the women at the lab today probably don't know or don't appreciate what Pat Gerry, Louise Derry and I and Ruth Stoddard, what we did back in the late '60s, early '70s in order to get them to the place where they are now.

And there is a difference also in the staffing because when I was there, it was all a hundred percent federal employees. You did not have contractors and now there is at least 50% there who are contractors now. So there is a difference in the staff makeup. So there has been some evolutionary changes, I'm sure, they are all for the good. But sometimes you remember the old days. Some of them were good, some of them were not. But, you know, I do remember celebrating birthdays together and going on vacations together and the guys that preceded me at the lab. They made lifelong friends with their coworkers. And now it is more independent.

JW: People in Marv's generation?

LD: Definitely, yeah, definitely in Marv's and Ray Fritz and Pat Twohig. You know they used to be a big golf tournament called the Bonesy Invitational. It was Bob Livingston was called Bones and every year there would be a big golf tournament. Everybody with no ability whatsoever to play golf. You know, there would be a big comrade day of, or half a day, of going out on the golf links, that sort of died by the wayside. There used to be a when you turned forty, there was a special balloon celebration and walker that was delivered to your door that day. [laughs] There

were celebrations that was shared with the family that we had at the lab. Again, it was a smaller lab. You got to know everybody. So times have changed and everybody does their things differently. But I do remember fondly some of those things.

And that went back even to Boothbay when the state and federal people would have their coffee breaks together and parties together. So and I think that's why I felt more comfortable on the *Albatross* because there was that feeling of family. I knew these guys when they were younger and then becoming grandparents. We are too young to be this old, you know, where did the intervening years ago. We worked together, we played hard together and made a career out of it.

I think the only thing I see that hasn't progressed as much is the support of the minorities that we have. There was a big push by one person, Brad Brown, back in the early '70s. He actively was looking for women and minorities and he made it his life's mission to find people. There was a legacy of maybe three or four people that are still at the lab that are a result of Brad's efforts. Not too many more have filled the holes as people left and so we don't have as much diversity as we once had. And some of those people have all gone Washington, D.C. and had successful careers in other locations but they got their teeth cut into the work that they did when they were here. And so that's the only thing that I see that's different from when I really, when I first arrived as far as personnel. It's been, it was my dream come true. It was hard for me to retire. To think of myself as other than a marine biologist or fishery biologist. It's like, "what's my identity in the next phase of life?
JW: Have you kept one foot in the scientific world?

LD: I have, I have two books that I'm trying to finish. One is on all the structural changes that have occurred to the *Albatross* during its' lifetime. Because when the engines changed, when they put superstructure on the ship, when the electronics were changed out on the ship. There may be some point of analyses in the future, that said, "oh because of this piece of equipment or because we changed the engine, the ship acted differently". So if I can bracket the timeframe that that was in, maybe they can see a correlation with the data. So that's been something that's actively being reviewed now. And then the other book is on, I have a hundred and twenty five people who have given me their reflections of their time on the ship. Whether it was the people they worked with, what happened during bad weather. What happened....

JW: Is that an enlargement of the *Spritsail* article that you did with Jennifer Gaines?

LD: Right, that article and then the decommissioning booklet of the *Albatross*. That one had thirty pages, I think I'm up to hundred and forty pages now of just the stories that people submitted. The spouses that met at sea. Just different stories of events that happened out there. And then I put the exhibit together in the Aquarium where it talks about the ships and the sailors and the science. Because everybody remembers the data, the science that we did. But I wanted

everybody to remember the seafarers that contributed so much of their sweat equity into collecting the best science and keeping the ship maintained that it was important for me to make sure people knew who the personalities were behind that science. And it sort of bookends also the *Albatross I* with the *Albatross IV*. Because number one had some colorful personalities on there and they talked about the bad food and the bad weather. Who was lazy and who, and it was like wow, back in 1871, they had the same problems. And Billy the goat that was on the ships and they had...

JW: No goat on *Albatross IV*?

LD: None, but it was ironic that Henry Bigelow for which our new shop was named after his last cruise was in the Gulf of Maine and that was the last cruise before the ship was sold also. And so I also had the last cruise in the Gulf of Maine as it was being decommissioned.

JW: That's a nice parallel.

LD: It was and I read his remarks and put them in the book, my last transmission was just to say how good of a sailing vessel this was, that she still had life in her. When we went through the Canal for the last time, the traffic control people honored us by saying how hard working the ship had been. They wished us fair seas and fair wind and they escorted us through the Canal. That was very moving for me to see that some other establishment had recognized our work. They see all these ships going in and out of the Canal and then that was it. It was an end of an era. Not having an *Albatross V*. Spending my entire career on one ship, it was good and it was sad. I was very fortunate. In the long and short of it, I was very fortunate to have the career and many opportunities I had for travel and making friends and learning different languages. It was the best of times.

JW: Well, thank you very much for sharing your memories today.