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Grosslein, Marvin ~ Oral History Interview

Joshua Wrigley

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

Interview with Marvin Grosslein by Josh Wrigley

Summary Sheet and Transcript

Interviewee

Grosslein, Marvin

Interviewer

Wrigley, Joshua

Date

July 25, 2016

Place

West Falmouth, Massachusetts home of Marvin Grosslein

ID Number

VFF_WH_MG_001

Biographical Note

Marvin Grosslein was born October 24, 1929 in Seattle. He grew up in Minnesota where a summer job with the Minnesota Conservation Department sparked his interest in fisheries science. He graduated from the University of Minnesota before attending Cornell University for his Ph.D. For his doctoral thesis, Dr. Grosslein developed a survey program that would provide a basis for estimating catches of all species. His graduate work took him to Woods Hole in the summer of 1959. He began full time in 1961 after completing his Ph.D.

Scope and Content Note

Interview contains discussions of: Woods Hole, R/V Delaware, U.S.-Canada line, foreign fleets, surveys, computer analysis, sampling strategy, trawl surveys, international cooperation on research, haddock, MARMAP, herring, Hague Line and Georges Bank.

In this interview, Marvin Grosslein discusses his education, his long career, and his work in Woods Hole prior to the creation of the Hague Line and NOAA's National Marine Fisheries Service. He discusses his work with early computerized sampling data, his involvement with documentation for the government during the Hague line negotiations and scientific collaboration between countries.

Indexed Names

Beverton, Raymond

Bigelow, Henry

Holt, Sidney
Smith, Dr. Lloyd

Joshua Wrigley: This is an interview being conducted as part of the Voices from the Science Centers project funded by the Northeast Fisheries Science Center. It is also part of the Voices from the Fisheries Project that is supported by the NMFS [National Marine Fisheries Service] Office of Science and Technology. I am Josh Wrigley, Project Manager of Voices from the Fisheries, and today I am speaking with Marv Grosslein at his home in West Falmouth, and the date is July 25, 2016. And I believe it's about 2:30 p.m. right now. So....when were you born?

Marvin Grosslein: I was born October 24, 1929. The second day of the big stock market crash.

JW: What an auspicious time to be born.

MG: Yup. Chuckle. In Seattle.

JW: And I guess you grew up in Seattle, then?

MG: No, I was only there a short time. My folks decided they wanted to have a trip. My mother had spent a marvelous summer before she was married at the - oh what's that famous place in the - I can't remember, but it's half way, more than half way up to Seattle along the long tier of the United States. Oh. Glacier National Park. And she wanted to go there so badly that she convinced my Dad to go out there at least for a while and I was actually born out there in Seattle. But grew up in Minnesota.

JW: Where in Minnesota?

MG: Uh a northeastern Minneapolis suburb. And got to see a lot of lakes, do a lot of fishing with my Dad and uncles so had an interest in lakes and fishing and so on even before I got involved in it at school.

JW: So when did you wind up doing your undergraduate education? And where did you go?

MG: I went to the University of Minnesota, and let's see. When was that? I guess it was, when did I? Anyway I got my, finished my master's degree finally.

JW: Looks like 1954 here.

MG: Yuh. Thereabouts. And that's where I got involved with fisheries, a summer job with Minnesota Conservation Department. I had a lot of fun doing water chemistry, test netting, surveying the lakes in Minnesota. There really are at least 10,000 of them there. And I had so much fun that I thought, gee, this might be a good career. So that's how I ended up working on a master's degree with Dr. Lloyd Smith at the University of Minnesota.

JW: What was Lloyd Smith like as a person?

MG: He was a very genial, fun, very encouraging person and he took a lot of pains to see that his students were doing what they needed to do, but he was just a wonderful guy, but one of the highlights I remember is that when he approached retirement I and others like Harry Anderson got together and organized a big party for him and students from all over the country --

JW: This is after you had your career established in Woods Hole, I take it?

MG: Yuh. That's right. And we really had a great party, and I think he really enjoyed that.

JW: Must have felt it was quite an honor.

MG: Yeah. Well, we were all really very grateful for the guidance and the help that he gave us and good advice. And as a matter of fact, he's the one who arranged for me to get a position as a grad student at Cornell University where I went to work on my doctorate. They were looking for a student who had real experience handling nets and equipment that they needed for work that was being done on Oneida Lake where I ended up doing my Ph.D. work.

JW: Would you describe your research for your doctoral thesis?

MG: Yes. The problem there was, amongst other things, they needed to get some measure of the sport fishery harvest of the various species Oneida Lake and so I was given the job of developing a survey program that would provide a basis for actually estimating angler catches of all the species, not just walleye pike and some of the bigger favorites...with the idea of trying to get a handle on the importance of that and what factors might be involved possibly in ups and downs, but it was primarily a statistical problem and since I was minoring in statistics and wisely, marine ecology, I was advised by the oceanographer that I took some courses from there. We, ah, was able to do that, and by the time I got to Wood Hole, starting in '61, I had a fair amount of statistics under my belt and a beginning knowledge of some of the issues and critters I would be dealing with in salt water.

JW: Now you had been to Woods Hole in 1959 during your graduate work, too. Is that correct?

MG: Yes. I was required by, oh my gosh I can't even remember his name now, the oceanographer that I took some marine classes from at Cornell that he wanted me to spend a summer getting my feet wet in salt water. And I was able to get a student assistant position there in the summer of '59, and did just that, although I do recall that my first cruise on the old Delaware was a pretty scary. We got on the ship out at Provincetown and we got out around the point and immediately hit some huge swells and I got so sea sick there that I thought I was going to die. Oh, oh. [chuckle] Never had seen anything like that on the lakes of Minnesota, but it was a very interesting summer in '59 in Woods Hole.

JW: So you were aboard the Delaware too for most that season then?

MG: You know I don't recall additional cruises that summer, but I think there may have been at least one more. Uh. That was a long time ago, you know. [laughter] But I never did really get entirely free of the sea sickness for starting out, but I became so involved with data analysis soon on and I didn't have to spend huge amounts of time at sea so I survived somehow.

JW: When you first arrived in Woods Hole in 1961, what were your responsibilities at that time?

MG: Well, at that time there was a lot of concern because foreign fleets were fishing along the continental shelves of Canada and the United States, and we realized that we needed to know a lot more about what was going on and where the various species were because the size of the fleets was obviously, and the experience of the Canadians even earlier, demonstrated that stocks could be really almost wiped out. And so there was a huge need for us to get in the act and begin to monitor distribution, abundance and hopefully begin to understand key things like the relationship between spawning stock sizes and recruitment for the various key species and so on.

JW: What was the general level of scientific knowledge regarding those topics at that time?

MG: Well, there of course had been pioneers ahead of us. Bigelow, [inaudible], uh a lot of others that had done studies, but no one had ever been able to muster the ship time, the resources to consider doing routine large scale surveys not only a year-by-year basis but seasonal basis as much as possible. And so we were delighted to do, to receive the new Albatross IV they called it, arrived 1962, summertime I think, maybe a little later, and we quickly got to work. My job was to help design a sampling strategy that would provide us with at least some measure hopefully with some statistical precision of the relative abundance of the various species through time and across the entire area which at that time was basically from Hudson Canyon on up to Nova Scotia Banks, and uh...A great deal of work, I got very heavily into helping develop the data processing guidelines which the programmers could then use to document the records and process rapidly. We had a big computer at the Woods Hole Oceanographic Institution at that time, and we for some time used that computer. That basically was what we started with.

JW: So you were using that computer to analyze data that was coming back from the first trawl surveys that you were developing?

MG: That's right. I've got a chart here that I'll show you the results of the first several years of surveys and as you will see right off the bat we documented a very strong decline after a slight increase in the abundance of haddock, for example. At the same time, we had huge Russian fleets out there and so on. That was enough to really get everybody, including our own fishermen, of course, up in arms and obviously a strong push to the establishment of the 200 mile limit some years later.

JW: When the Albatross IV arrived in Woods Hole in 1962, did you initially sail aboard it? As you were developing the survey?

MG: I did go on several of the cruises. Right now I couldn't tell you which ones. That's a long time ago. I'd have to go back and look at my detailed records, but first I'd have to find my records [chuckles]. But I quickly found that there was so much work required for developing techniques for analyzing data and getting the analytical programs functioning so we could process the data quickly and accurately that more and more of my time was spent in the lab as time went on.

JW: So how did the first trawl surveys work? Could you describe what the process was, planning them and how they were executed?

MG: Well, we used a table of random numbers to select trawling spots. Well, first I had to draw up a proposed stratification plan which stratified the area into depth zones and geographic locations and we initially started going down to off New York where we stopped initially and then went up along the Canadian coast part way. And there, were as close as we could come in, that made sense and as far out as we had capability for trawling, as far as we thought the principal fish that we were concerned with would be found, and we very soon became involved with...realized that other vessels were there and actually got involved with joint surveys with some of the foreign fleets. I organized some joint trawl surveys using our stratification scheme, for example, with Russian vessels that were sent over to work with us. I wanted to demonstrate that it didn't matter very much what exactly what kind of trawl you have, if you used that same trawl in the same way and you covered the same areas, depth zones and geographic areas, and so we had some joint surveys where we towed side-by-side. Uh and I was able to demonstrate even to the Russians' satisfaction that yeah, we got the same relative abundance in a season in the same places using very different gear. They had wanted to use our trawl, and I said no, no This is to convince you that these numbers that we're getting are meaningful, and so that took a good deal of time, but we had some good interactions with the Soviet workers that came. Same with Poland. We even had a French vessel over one year, and uh.

JW: How much data sharing was there in the early 1960s between the United States and the Soviet Union when it came to fisheries research like this?

MG: Well, we shared information within the context, as I recall. Often a good deal of this was described in the form of documents and then reviewed, discussed within the framework of the ICNAF International Commission for the Northwest Atlantic Fisheries. And headquarters there in Canada, so we would have annual meetings and all the countries would send technical representatives and we'd talk about the landings and the abundance indices and the, all of the issues that were coming up not only about the distribution, but the relative abundance of the various species, and the important thing I recall is that we've had very good relations, not only with other countries in working in these modes but over the years we have had very good

working relationships with our Canadian colleagues. Even when we got to the point of worrying about the boundary following the 200-mile limit extensions.

JW: To go back for a second now, when you initially arrived in the center in 1961, you were Chief of the Haddock Program. What was some of the work that that entailed, outside of the development of trawl survey?

MG: Well, obviously we were looking at, started to look at other things. For example, we needed to maintain a uh, maintain a good picture of the age structure of the fish that we were catching, so we were collecting scales and otoliths depending on the species. And of course, we were keeping records on all the species that we caught and each one of them represented a sort of a unique problem in terms of okay, what do we do with these. So all these records were being expanded as time went on and biologists that were there started getting involved with looking at stomach contents. At one point, we were doing some at racial studies with blood samples, uhm, trying to see the relationship between species groups that we were encountering, and when we expanded the surveys not too long after we got going in '63, we expanded it down to Cape Hatteras. Why the list of species really got pretty huge and we...uh...the size of the job kept expanding and expanding and we were also adding other kinds of sampling, not only the minimum hydrographic BT casts but towing plankton nets regardless of the season, but of course, in the springtime, especially interested in the spawning times of the major commercial species. And gradually the surveys and sampling aboard kept expanding as the various research areas increased so you had biologists looking at stomach contents, looking at not only the age and growth and abundance measures, then we got involved with the plankton sampling, and surveys were expanded to cover a lot more kinds of sampling on each cruise. We ended up, developed a very broad scale vision. We called them MARMAP - Marine Resources Monitoring Assessment Prediction surveys. We piggy-backed as much sampling as we possibly could on every cruise. And there are lots of other elements involved as we got more and more involved with companion studies being done with other research vessels by other agencies particularly Woods Hole Oceanographic Institution, the Marine Biological Lab, Sea Grant universities, other research organizations and had a lot of guest people and gradually building up new equipment for including underwater cameras and...It was expanding very rapidly and a practical issue but one which is, I think always with us, is that we begin to have, you could say well, it was competition within the Center, Northeast Fisheries Center. When that was, let's see, that came into being 1970--

JW: The transition from the Bureau of Commercial Fisheries?

MG: --Transition. yuh. We were constantly squabbling over the fact that we didn't have enough uh technicians, enough money for equipment that we needed and we kept expanding the scope of the and depth of the investigations we were doing. Getting involved with studies of, for example, the actual spawning concentrations. For example, there was a lot of concern about herring and we had a major program on herring spawning areas.

JW: This was Atlantic herring, I take it?

MG: Yes. Yuh. Uh and that was just one of many areas where the project just kept expanding, expanding and then got involved with special surveys or analyses to provide data for our government. For example, the whole idea of surveys and some of these studies I have already described was to buttress the arguments for the expanding or establishing the 200 mile limits so we'd have more control over our coastal resources. And our lab and staffs were pressed into service for all kinds of documentation to provide the government for information that they needed for their negotiations. And we...uh...we made a number of special documents. I was involved in quite a few, trying to provide documentation useful for the government not only for the fisheries, the 200-mile bill, but also for the Management Service. They were concerned about drilling for oil on Georges Bank and government was - one side would say good heavens don't do that, we'll destroy our resources, pollute the area and so on. Seems like there were...well, then we were asked to produce information, for example the...later on the I was heavily involved in the preparation of an atlas of the fishes Northwest Atlantic which we did. The government used that a lot and we produced the major tome on Georges Bank itself in cooperation with other agencies especially the Woods Hole Oceanographic Institution. I was heavily involved in that. I assisted with editing a number of the contributions from our fisheries center and helped write some of the documents, some of the papers that were included in that.

JW: Marv, what determined whether you would use a otolith or a scale to determine the fishes age?

MG: Well, scales are a lot quicker and easier to collect. Just a quick swipe and you've got them. Otoliths you've got to do a lot of digging and otoliths are a lot more work to process. Right now I couldn't tell you all the details on it, but depending on the species, you can use either one. But uh...

JW: Are there merits to one or the other?

MG: Well, right now I don't remember very much about all of those differences. That's a long time ago. But we did find as I recall for haddock, for example, it seems like we were able to have more confidence in some of the otolith work that was done than the scales, and so, but you can use other bones as well, I guess, but those have been traditionally used. I suspect they may have lots of better ways to do it depending on species these days, but that's what I recall about the haddock anyway.

JW: Do you remember what the conversations were like leading up to the passage of the 200 mile limit? How did the scientific community at the center think about this as a policy change?

MG: Well, it was certainly an obvious benefit to our respective countries as I mentioned earlier. There was no doubt that the distant water fleets were removing enormous quantities of fish and the Canadians got clobbered much more heavily and sooner than we did. So there was obviously

a very parochial interest in documenting the situation and trying to move that along as soon as possible.

JW: Let's steer now toward the establishment of the Hague line in the 1980s between the United States and Canada. What were some of the policy discussions that accompanied that or I could have instead asked, in what ways did the establishment of the Hague Line redirect the science center's research agenda, if at all?

MG: Well, it was obvious that both the U.S. and Canada had major interests in stocks of fish both in Georges Bank, Gulf of Maine region and even the western portion of the Canadian shelf. Since our fishermen were used to going both areas and so each side naturally wanted to present the best case for their own country and which we did. We were looking at Georges Bank as being a unique ecosystem and traditionally our fishermen had been the primary folks fishing there and the haddock stocks we suspected somewhat different, the ones up on the Canadian shelf, not exactly the same as the one on Georges Bank.

JW: They were a distinct stock?

MG: Well, we were both assuming that that was the case. But and I don't really recall any fully distinctive studies finding any racial differences, but it was interesting that we were so used to working with the Canadians on... when we had the common enemy in the foreign fleets, that it never really got to be a confrontation between the scientists from my perspective anyway. And yet we needed to provide information as best we could to our respective countries on why we thought the boundary ought to be here or there, and despite all of the effort that had been put into, up to that point in time, trying to figure what was controlling the recruitment success for the major species covering the respective areas, we still realized that we had a lot more to learn before we were going to be able to begin to actually adjust the size of the spawning stocks to a point where you could target a long-term maximum sustainable yield. That was the target of the assessment biologies. And to estimate minimum stock, spawning stock sizes, that would be required to provide at least average and sometimes even better recruitment, but you want to avoid as much as possible driving any spawning stock down below a point where you reduce the likelihood significantly of a good recruitment year. And that was the goal of the assessment arm of the research units. But tradition and politics and a lot of other things probably that went into the judgment that came out and interestingly enough, despite all of our hard work, trying to figure out what were the key factors affecting the survival of any one spawning season in retrospect of course, we have now observed definite impacts on the biological communities involved in the areas where these species are spawning. Involving, for example, the larval stages don't find the same batch of predators and/or food sources every spawning regardless of how many spawnings there are, and of course we now know that the eco-system is, physical eco-system, has been changing in later years and at the time that the boundary dispute was being worked on prior to the decision why, of course, we weren't seeing so much change, but subsequently it has been very obvious that the waters have been warming, distribution of some of the main species, regardless of what stock, have been affected, the boreal species like cod and

haddock tending to move a bit further north and subtropical species moving up the coast slowly and the plankton communities, as I say, changing and the dynamics of places like the southern edge of Georges Bank where the Gulf Stream moves up and where you have varying dynamics going on there, those physical dynamics are changing. A somewhat weakening of the Gulf Stream, so all that coming along with global warming...the scientists, biologists, et cetera, all of them got their work carved out for them. We've got tremendous new challenges if we want to maintain some of the productivity of some of our fish stocks, why it's going to require much more coordinated careful study and obviously for the benefit of mankind on global basis. Why, if we're not careful, we will be unnecessarily reducing the food potential for our burgeoning human population, so. All I can think of is I wish them luck [chuckles]

JW: To what extent was research in the areas that you just articulated, really stressed at the Center in the early '60s when you started?

MG: Well, as I think I may have mentioned earlier, the main concern was to get a handle on the foreign fisheries that were developing, were developed already, try to get some basis for what was happening. I've got a couple of graphs right on that table there that, in fact let me grab those. I'll give you a quick look. [background noise] For example, this shows the abundances that we got on Albatross IV starting in, let's see, I think it is, the first cruise was in the summer. Uh and this is early...

JW: 1964?

MG: '64. That's right. Showing, this is Albatross, the abundances for the cruises that was done in the various seasons. We actually were doing them in both summer, fall and winter, trying to get a seasonal picture of the distribution. But if you look at the fall cruises, which were the more complete set - that's the triangles - show that the catches were going up from fall of '64, late '64.

JW: Looks like they kind of peak around 1965.

MG: Yuh and then they started down, tremendous decline. In '66, '67, '68 practically off the chart. And that was for Georges Bank.

JW: What did you think at the time was responsible for that decline?

MG: Well, when you saw the size of the, particularly the Russian fleets on Georges Bank, it was like a city out on Georges Bank. Vessels all over the place, and that figure I think, those numbers got the attention of those of us living on this side of the Atlantic, Northwest Atlantic, and that, I think made it obvious that whoa, we've got a problem. Even though we didn't understand a lot of the things controlling the natural reproduction. The fact that a multi-year species could decline so much in such a short time was like a real warning, warning bell. And uh

JW: What was ICNAF's [International Commission for the Northwest Atlantic] response to that information?

MG: That raised major alarms in ICNAF and we and the Canadians were equally alarmed, and of course, as I said they had seen similar declines in some of their fisheries further to the north and east earlier. So we were...uh...all through this as I mentioned earlier, the Canadians and the U.S. scientists have been pretty much working together to try to make some sense out of this. But that was a real wake-up call.

JW: Were there other species similar to haddock that had also declined as precipitously? Or was haddock unique among them?

MG: As I recall, we did see some declines in some other species, but that was such a valuable species that that was a principal focus. Of course, we had information on a lot of other species. Cod, of course, they had noted a major decline up on the Canadian grounds much earlier and the picture there was similar. I don't recall how many other species were looked at with that intensity, but at least we had information on all of the species that we caught. And over the years why we --

[phone interruption]

JW: So we're back on line here, and to finish up the interview, I'm wondering if you might be able to provide any recollections about your transition to Woods Hole and what the community was like then, or if you can remember what the layout of the street was at that time, small details like that.

MG: Boy, that's a tall order, Josh. [laughter]

JW: Anything that comes to the surface.

MG: It was always impressive to see the three institutions there and including the Coast Guard Station there. My first summer, of course, we were not in the lab. There was repairs going on at the time. We were at the big building on Woods Hole Road, up on the hill on the right not too far from the village, but it's quite a fascinating place, especially for a kid from Minnesota. [laughter] And it was impressive to see the buildings there and to see the plaques here and there documenting the history of the place. The old candle shop there, getting to see the other institutions, their facilities, it was quite an experience for a kid from Minnesota, and it was, it was neat there, boats coming and going all the time, of course.

JW: Out of Eel Pond?

MG: Eel Pond, right. The bridge going up and down and watching the steamers coming in and out from the Vineyard and commercial boats coming in, and, of course, watching the big

research vessels come in to port at the Oceanographic Institution. That was very impressive. And learning about the history of the place was certainly an experience. I was pretty excited to be there, and certainly had...uh...learning about especially in the earlier days, reading about the work that had been done by Henry Bigelow and others that had done pioneering work in the Gulf of Maine, Georges Bank. That was, of course by that time, was very familiar with things that had been done in terms of fisheries research elsewhere particularly Beverton and Holt's work, and I rather quickly got involved with some foreign travel, which added a lot of interest,

JW: That would have been ICNAF?

MG: ICNAF, ICES [International Council for the Exploration of the Sea] meetings, went to the Soviet Union several times for joint sessions with the Russians. Went to various places. '63 I was able to attend a special session in Spain. Was a joint meeting, ICES sponsored, I think, but we usually sent the delegation. I remember I went along with Dr. Edwards who, the Center Director at that point. I was astounded to see, this was in 1963 I believe,

[Phone interruption]

JW: I'll pause it here.

MG: I was astonished at one point in the sessions when they were discussing the issues of exploitation around the areas of interest, the Russians were discussing aspects of the exploitation in the regions of concern - ICES AND ICNAF, and they were not presenting any data, just saying oh well, this was so-and-so.

[Person interrupts]

JW: Thank you very much for talking with me today, Marv. We'll definitely be in touch.

MG: Very good.