Christina Package-Ward: So, could we start with your name and what city you live in?

Gregg Waugh: Gregg Waugh, and I live in Charleston, South Carolina.

CPW: Your year of birth and where you were born?

GW: February 24, 1953, and I was born in Nassau in the Bahamas.

CPW: Your father's and mother's names and occupations?

GW: Father's name was Harold Waugh, and my mother's name was Alice Waugh. My mother is from Scotland, Dundee. She worked in the airline industry and ran the airline, actually, Mackey Airlines, that is no longer in business, that used to fly from Florida to West End. My dad started a gas station and construction business in West End. It's now still going, Waugh Construction. Several of my brothers – my two brothers and sister are working in that now, and a son.

CPW: That was going to be my next question, how many brothers and sisters, and whether any of them have been involved in fisheries management?

GW: I've got two brothers and a sister. I'm the eldest. My brother just under me, about two years younger than me, he's the only one that was involved in fisheries. He was actually more involved in aquaculture. He got a master's degree in marine biology and worked raising marine tropicals. But now, he's working in the family construction business. He's heading that up.

CPW: Do you have any children?

GW: I have four children, three boys and a girl. I saw your question, so I got their ages. I had it calculated.

CPW: [laughter]

GW: Justin is thirty-nine. He's the eldest. Kevin is thirty-six. Andrew is thirty. Our daughter, Margaret, is twenty-four.

CPW: Are any of them involved in marine science?

GW: No. Actually, a lot of artists. The eldest one, an artist. My second son, Kevin, is the one who's down working in the construction company. He was a musician and is now doing that. Andrew was in theater, and he's going to be teaching. Then our daughter is in game design and writing. So, yes, nobody taking up fisheries management.

CPW: [laughter] Could you tell me a little bit about your educational background, where you went to high school and college?

GW: I grew up in West End, Grand Bahama, and went to a boarding school in Nassau, which is the capital of the Bahamas, and did four years there for high school. Then I went to Florida

Institute of Technology in Melbourne, Florida, and got a BSC in Biology with a major in marine. Then went down to the University of Miami at the Rosenstiel School and got a master's degree in biological oceanography with a major in fisheries management.

CPW: Was the study of the marine environment always an interest of yours?

GW: Yes, it was. Growing up in the Bahamas, we spent a lot of time on the water. My father took us swimming and diving. We did a lot of spearfishing growing up and fishing and just were outside a lot. So, I either wanted to be a professional baseball player or a marine scientist. The first time I played baseball and someone threw that little round ball up, going to my head, I said, "I'll go the science route."

CPW: How long have you been involved in marine science?

GW: Well, I've been with the council for a long time, thirty-four years. I came to them in 1980, went down, got my bachelor's degree in [19]74, and then went down to the University of Miami and did a little over a year in classwork. Then went to the Bahamas to do my fieldwork for my master's degree. I didn't want to do an in-lab project, so I did a tagging study of lobsters to look at their growths and movements. So, that sort of started the field side of it from about [19]78 on.

CPW: Was that your first job then with the council?

GW: Yes. One of my major professors was Bruce Austin. He was at the University of Miami, and I worked with him. Actually, when I was doing my master's, I did some work with him on a Ford Foundation project studying limited entry potential for the lobster fishery. So, I did that, and then my first sort of full-time job was with the council. Started with them in 1980.

CPW: Have you worked with any notable people throughout your career?

GW: Yes, I would have to say my two co-major professors for my master's, Bruce Austin was a marine resource economist. Having a more biological background, I really enjoyed that and it really opened my eyes and mind to a different way of looking at things and factoring in economics. Ed Hood was my other major professor, and he was more a biology fisheries management type of person, but very detail oriented. You'd write a paper for him, and your paper might be four pages long. He'd give you six to eight pages of legal-size yellow paper with comments. But it really helped and learned a lot from those two. So, I'd have to say those two were the major influence.

CPW: So, you first got involved at the council and you explained that. What are some of the significant changes in the way that fisheries are managed today compared to when you started?

GW: The requirements have changed so much you look back at some of those first documents, and they're much more simple, much more simply stated. We worked a lot more with the fishermen in terms of getting measures in place. Things happened faster and they weren't as complex. The bureaucracy wasn't as big. Back then, we were tackling small problems. As it's progressed, with each revision to Magnuson, the requirements have increased. To me, the

biggest difficulty has been adjusting to these annual catch limits where you're putting strict limits on the commercial side and tracking it within a season, which we've done for years, but then trying to do the same thing on the recreational side has been very hard. The other major difference is we got relatively simple stock assessments more frequently earlier on, and they seem to be easier for people to understand. Now, it's gotten so complex and involved. You get fewer of them, and it's difficult to explain the outputs to people.

CPW: Is that because the technique is more complicated?

GW: The technique is more complicated, yes. I think some of the assessments we're getting now are better, but we've still got issues with the quality of data.

CPW: What do you say has been the biggest improvement?

GW: I think that in terms of the biggest improvement is the openness and transparency of the process. I think anytime people are critical of the process and then come and spend some time working with us, they really understand how open the process is. So, I think that's been a huge benefit. We've seen some successes in rebuilding king mackerel and Spanish mackerel. Then more recently, vermillion snapper and black sea bass, we've seen become overfished. Then the stocks have increased to where they're no longer overfished. We're still rebuilding them. But that's been nice to see.

CPW: What do you think is still lacking and needs improvement?

GW: Well, in fact, we talked about that today, data, data, data. When I started with the council, one of the first things I worked on was the State-Federal Cooperative Statistics Program, looking at ways to improve landings. Our data hasn't kept up over the years. We're now doing ACL management or annual catch limit management, where we're supposed to be tracking the harvest of each sector. We're just now getting mandatory weekly reporting on the commercial dealer level. On the recreational side, we're here in 2014 and don't have 2013 headboat data. So, we've gone to electronic data reporting for the headboat sector as well. Then the most difficult one to track is recreational, and we're still having great difficulty here. When you put in these stringent requirements and haven't provided the necessary funding for the data, it makes it very hard. Sampling, biological sampling so we can get size, age information, reproductive stages, and bycatch information, a lot of that is very limited to missing. So, that results in more uncertainty. Then you're supposed to be more conservative, so the fishermen end up paying the price with lower catches. But data, to me, is the biggest missing factor. I'm sorry, let me mention one other, enforcement. It's very difficult to do at-sea enforcement. The funding that's been provided has been very limited. There's a hesitancy to be very strict in terms of permit sanctions or permit revocation for major resource violations. The fishermen have always been very straightforward with this. They don't want that type of person operating in fishery either. For major resource violations, they're all in favor of pulling the permits. But we very rarely, if ever, do that. So, enforcement is another big issue. With the technology now, and we've just had some discussions about the use of drones for out-on-the-water enforcement. But right now, it's the policy of the agency that they can't use drones for law enforcement. So, that would be a big factor, to increase enforcement as well.

CPW: Where do you think it is that they do not pull permits if there is a major violation?

GW: Well, there's a hesitancy to be that strict. Years ago, when we were first discussing limited entry, we had someone come from Australia that had a limited entry program. He said one of the biggest benefits is the enforcement. Someone said, "Well, how many repeat violators do you have?" He just got this puzzled look and said, "Repeat violators? there aren't any. They lose their permit." So, it just seems that we're not willing to be that tough. Again, it needs to be for serious resource violation and not a minor reporting requirement or something like that.

CPW: If you could change anything about the current way that we manage our fisheries, what would that look like?

GW: Well, we're dealing with more people than we have fish. To me, the councils have looked in the past at allocations or sort of advised to use landings information to do their allocations. To me, in other facets of our lives, we have elected public bodies that make these types of zoning decisions for us, and there's no strict formula that they use. I think it would be very helpful if we're getting a better handle on the amount of biological yield we're going to have. So, then you need to get into the social and economic side. Our data there are even less than what we have biologically. But I think it would be very beneficial if the council could sit down and just put all the species on the table and recognize that you've got some that are a hundred percent commercial. You've got some that are a hundred percent recreational. Then you've got others that we want to have both sectors in and decide, okay, this proportion is going to be allocated to service to commercial market. This portion is going to service the for-hire sector – so, the charter boats and head boats – because their motivations are different. Then this portion is going to be allocated for the recreational harvest. Then within each of those components, to me, you need to have some sort of limited-entry ITQ type of program. Because otherwise, we just get into lots of size limits, closed seasons. You can't fish for this species, so you throw back dead ones. You throw back small ones. It doesn't make sense. We're just wasting the resource, and that's added uncertainty in our stock assessments. So, to me, it's time for the council, when we're doing a visioning process for snapper and grouper, then it's time for the process. The council to just sit down and have an honest, open, frank discussion about how to fairly – and that's the key word, fairly, because not everybody's going to be happy – but fairly divide up the resources. Then within each sector, scale the amount of effort so that those individuals can make an adequate return. If they're making money, then they can help with some of the cost sharing for data collection, data reporting. But right now, everybody's operating at such a small margin that any added cost for data collection and monitoring, the industry just can't afford it down here. So, I think that's the biggest challenge and would give us the biggest benefit.

CPW: Are there any memorable moments or periods that you remember most during your tenure as a fisheries manager?

GW: There are. We had a fisherman that we talked with, (Larry Bartram?). He operated a drift gillnet fishery. This operated in the king mackerel fishery. They were fishing these nets off of the Cape Canaveral area where the continental shelf is very narrow, but far and wide south of the Cape. It was really having a big impact on the resource, and there weren't a lot of fishermen

doing it. So, the council prohibited drift gillnet gear in that fishery. I'll never forget explaining to this fisherman, and he was very respectful, very polite. But his daughter was standing and then twirling in between his legs. I was explaining to him why the council was basically putting him out of business. That's something that has always stuck with me. One of the things I really like about this job is you're not just sitting in an office. When we make any decisions, we go out and do public hearings. We have advisory panel meetings. So, we meet with fishermen and explain to them why you're doing something. That's always a good check. You don't get that ivory tower disconnected feel. When you tell someone you're – this is going to reduce your catches and income by ten to twenty percent, I look at myself. What would I do if someone came up and told me, "Hey, we're going to cut your salary ten or twenty percent?" So, that was a moment that has really stuck with me. On the positive side, we worked with a group of fishermen that we prohibited in the fish trap fishery in Florida, put them out of business. They went off and developed another fishery for golden crab. The Nielsen family was the one who's doing – who had helped develop that fishery. The son, Richard, came back to us and convinced his dad to come back to us and asked for management. So, we worked with them and the industry itself – and this was all commercial, very deep water. That industry developed the fishery management plan. It said, "Here's the minimum size we think should be in here. We shouldn't be harvesting any crabs with eggs on them. Here's the depth that we should be fishing outside of." So, they came forward with a whole host of management programs that they wanted in, and they wanted to protect the habitat and the gear from – we had some interest in larger vessels from the northeast – sorry, the northwest, coming down from those crab fisheries, and figuring that they could fish down here with the current. It was very different. They came in and lost gear, caused tangled gear. But it was really rewarding to work with a group of individuals that you had previously put out of business. Then the council worked to develop this fishery, recognizing that their prior efforts put them out of business. So, we wanted to reserve that for a smaller-scale operation with the knowledge that was – met the fishing requirements here. So, we really worked with them. I think that's one of the high points of my time with the council is working with that Nielsen family to do that.

CPW: That kind of leads into the next question. What have you enjoyed the most about being involved in fisheries management?

GW: To me, it's working with the fishermen and seeing what you work on implemented. I was never interested in just writing papers, and they'd get published and they'd sit on a shelf. Here, we write fishery management plans, and they have an effect. They protect the resource. They affect fishermen. So, it's really meaningful work, and it's all done in the open. When we hold a meeting, they're all open. The only meetings we did closed are for lawsuits and personnel matters. So, all our meetings are open. We try to post our materials, give them to our council members two weeks before. At the same time, they're posted to our website. So, fishermen can get the exact same briefing material that our councils get, and they can come in and talk with the council members. We hold a meeting. We have four meetings a year, one in each state. So, the fishermen in that local area, like around here, around Savannah, have a chance to come in and talk with council members. So, the council is a very open process. The way our members are distributed, we have three members from each state. So, a fisherman in a particular state can go and talk with those three members. They can express to them how they want them to vote. Now, with the webinar capability, they don't even have to attend the meeting. They can listen in

and see how people vote. That, to me, as a form of government, is fantastic, as a private individual, to have the ability to share all the materials, to talk with them. Our council members have always been interested in what the fishermen have to say and what their thoughts are – protect the resource but do it in a way that minimizes the impacts on the fishermen. People talk about openness and transparency. You can't get any more open than this. Sometimes, it's ugly. You hear all the detail of the discussions. It's like watching sausage being made. But it's all open. You can see it. You can hear it. They take a break. You can go talk to them. It's a fantastic form of government.

CPW: What have you enjoyed the least?

GW: The least is the bureaucratic side of it. Trying to get documents implemented is our goal. There's a lot of the parts of the bureaucracy that's more about how you write the document. You've got to change it to this, change it to that. The requirements are constantly changing. That, to me, has to be one of the most frustrating things, is getting over that bureaucracy. Second to that is dealing with poor data and knowing that you have to put these limits in. If you don't have all the data you need, then there's more uncertainty, and you're putting more impacts on the fishermen.

CPW: What do you think is the biggest concern for the future of fisheries management?

GW: Well, definitely data. I think we've got to get better data so we can do better assessments. That's the key factor. We've got global change issues. We see more of our snapper and grouper species showing up farther north in the mid-Atlantic. We saw this years ago with king and Spanish mackerel, and then we extended our management jurisdiction through the Mid-Atlantic Council. We've talked about doing that before. But I think, too, in the Southeast, we have a much higher recreational component in the Southeast and the Gulf. So, as people continue to move to the coast, you've got impacts on the habitat. You've got demand for more access to the resource. We really need to have better data on what's been harvested so that our stock assessments can be more accurate, and we know what we can allow people to harvest.

CPW: How do you think we could make that happen?

GW: That's a good question. Earlier in my career, I'd have an answer. But we've tried so many things. To me, you can't expect the federal government to do it, particularly in the climate we're in now. So, to me, I come back to scaling the level of participation in the industry so that they're making money and they can cost share. I think it's time to look to the states and to regional data groups like the Atlantic State, the ACCSP, those bodies that can do data collection and data management more efficiently than the federal government, and then having the fishermen be in a position that they're making enough money that they can share the cost and get rid of confidential data. Many times, I try to explain to fishermen, "You're participating in a harvest of a common property resource. The cost of doing business is we get your data." Now, we're not going to say, "You're fishing in this area." We're going to do our best to protect that type of information. But we need to be able to get the data. That would help a lot, because there's a lot of internal costs that are generated by the requirement to keep the data confidential. We get to the point now somewhere where, for a species, the whole annual landings for Georgia are

confidential because you have so few dealers. So, I just don't see a way. We've talked some about getting the environmental groups to help fund data collection. They'll do some of that, but that's not a long-term solution. I think each sector has to share in the data collection cost. You can do that, some, through permit fees and some through requirements to carry observers. But you've got to have them in a place where they can do that economically and remain in business.

CPW: Is there anything you are particularly proud about regarding your accomplishments on fisheries management?

GW: Personally, it's that I've always been straight with people, and I value that integrity. I've told people, "I'll give you the straight scoop when it's good news and when it's bad news." That has really paid off with working people, with working with people throughout my career. They've been respectful, and I'm respectful of them. Sometimes, they'll say, "Well, I'm sorry to be so angry." And I said, "If I was in your shoes, I'd be behaving worse than you are. So, you're doing fine." But it's that honesty and being able to tell, "Damn, look, I'll be straight with you always. Have the same courtesy with me. Don't come in blowing a bunch of smoke." So, I'd say that. The other big accomplishment that I look back with a lot of pride on is working with a group of fishermen that we prohibited in the fish trap fishery, the Nielsens. Really developing close ties with that family to have seen a group that was totally disgusted with the whole process, put out of business, have the courage to come back and then work with them, and them working together with the council, and basically writing a whole management plan with them participating, real participatory management. So, those are two of the highlights.

CPW: Do you have any advice for a young person who might want to get involved in fisheries management?

GW: Yes. You start out, and you want to be in the field. Eventually, you're going to end up in an office. You're going to end up supervising people. So, really, when you're at the undergrad level, and even the graduate level, make sure you learn how to write very well and clearly, how to speak well and clearly. Take some philosophy and politics classes, psychology classes, so you understand how to work with people and how to mesh with people. Right now, you hate to tell anybody not to go into a field, but with the current budget situation – and I tell them, "There aren't a lot of jobs, and there probably are going to be fewer." But if this is your passion, pursue it and do the best you can. While you're getting your degree, definitely go for a master's, because I got a master's and I stopped there. I didn't want the added investment to go for a PhD. But that's enough to differentiate you from all the bachelor degrees. It gives you the opportunity, while you're getting your master's, to do some work and work with researchers if you want to get into research. Work with managers if you want to get into management while you're in school, so you have a little better idea of what's going to be involved in that career. That, you can even do when you're an undergrad. Don't wait until the end and then try to figure out how to do that. One other thing is learn how to supervise people. That, to me, is one of the biggest shortcomings, is as a scientist – well, most scientists are a bit odd, myself, included, from the start. We just are. But particularly, many cases, you have to do some level of supervision. Getting some training in how to supervise people would be very helpful.

CPW: I think we have covered all of my questions, but is there anything else you would like to

mention or think we should talk about?

GW: Gosh. I think we've covered a lot. I mean, what I just said about the number of jobs, the flipside of that is you – we need influx of new people. We need younger people that have new ways of looking at things, because we have to learn to do more with less and some creative ways to involve people in the process. So, welcome new ways of doing things, and particularly, if it's their passion, just go for it. Take advantage of every opportunity. It's exciting. It's rewarding. We've started to get some fishermen who would come up now and say, "Thanks for all the tough decisions the council has made. We're seeing more fish than we've seen before." That's very rewarding. Thanks for the opportunity to provide a comment. I think that's about it.

CPW: Well, thank you so much for doing this.

GW: You're welcome.

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