Interviewee: Gordon Colvin
Interviewer: Jeremy Sharp, Cornell University undergraduate student, for New York Sea Grant
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00:04
Jeremy Sharp (JS): Awesome. So let's, all right. Today is February 12, 2021. This is Jeremy Sharp of the Northeast American lobster initiative. I'm currently based in Ithaca, New York. I'm interviewing Gordon Colvin of the ECS federal LLC remotely, who is currently based in Lake County, Florida. So to begin, why don't you tell me about yourself in general?

00:33
Gordon Colvin (GC): Sure. So Jeremy, as I was saying to you earlier, I grew up in upstate New York attended Cornell University in the late 1960s. And from there went on to work for what was originally the New York State conservation department and later the Department of Environmental Conservation. For a long time, and retired in 2007. At the end of when I retired, I was the director of marine resources for the department and had been for almost 25 years. Subsequent to my retirement from my real job,
I have worked with NOAA Fisheries, supporting one of their programs, the Marine Recreational Information Program, initially as a NOAA employee, and more recently as a contractor, in a part time capacity.

My wife and I moved from Long Island to Florida, in 2016, and that is where we currently reside. Although we still have a home in Long Island, and maybe when this COVID business is over, we can spend a little more time up there from time to time.

01:49
JS: I hope the pandemic will pass soon. So could you tell me a little more about your role supporting NOAA?

01:58
GC: Sure, when I first, well. One of the programs, a major program that NOAA Fisheries implements
relates to the collection of data on commercial and recreational fisheries catch and landings as a key data input to fishery stock assessments and fisheries management. Up until just before I retired, the recreational side of that program was known as the marine recreational fishery

statistics program. And that program was subjected to a lot of criticism right up in the 90s and into into the early part of the 21st century. And actually, kind of interestingly, at a meeting in the DEC conference room, in East Setauket, the then Assistant Administrator for fisheries public meeting in our conference room announced that NOAA Fisheries had contracted with the National Academies of Science to undertake a comprehensive review of that recreational fisheries statistics program, which started then and concluded just before my retirement in 2006.

And what ended up being extremely critical in many ways of the surveys that were done survey designs and survey practices in use, and and recommended a kind of a sweeping overhaul of those surveys.
Congress then picked up on those recommendations, and in a reauthorization and amendment to the Magnuson Stevens Fishery Conservation and Management Act that was enacted in January of 2007,
delivered a mandate to NOAA and the Department of Commerce to institute a new program that addressed those recommendations.

04:18
I was hired to work in that program following my retirement from the New York State, and initially was assigned to develop and implement a National Registry of saltwater anglers as required by both the legislation and one of those recommendations from the National Academies. In consultation in cooperation with all of the coastal states, that was my first assignment and then later on, I I was
moved into a capacity for as a senior program manager for the program.

05:02
And then when I, after several years of working full time for the federal government and commuting weekly from Maryland to New York, that was enough of that. So I left federal serve active federal service and moved into a part time capacity as a contractor in the same program doing a lot of the same program management work I had done earlier, but the focus of this program remains on addressing necessary improvements to the, to the various surveys, and working with our partners around the country to improve the quality of recreational fisheries catch and effort data collection.

05:47
I should say that we had a second national academies review done in 2015 to 17. And we got much higher marks the second time around. So we're, we're very happy with that. We've made a lot of progress.

JS: Well, congratulations. Yeah, it sounds like a lot of work, they just throwing on you after you retired.
So I mean, do you enjoy the work at least?

GC: Sure. That's, and you know, in a pandemic, when you're kind of stuck without a lot to do with it helps keep me busy. So that's, it's been very, very helpful in that regard, as well.

06:29
JS: busiest keeping sane. So what interested you and working with marine resources in general? Like what brought you to like what made you what inspired you to head down this path in life?

GC: You know, that's a really interesting question. Because again, as I told you, I grew up in a small town in upstate New York, east of Lake Ontario. I never, I never laid eyes on a body of salt water until I was a senior in high school. And we made a class trip to New York City. And so I, like a lot of people my age that were there was interest in marine biology being promoted by some prominent people, including Jacques Cousteau, Rachel Carson, and others that kind of caught our attention.

07:25
At Cornell, I mean, originally, I was looking at colleges that are closer to the coast, but became convinced after meeting with a couple of the professors at Cornell that I could get a good start there.
And so I applied and attended Cornell for four years and I took a number of courses in general ecology and ecological ecology, related sciences, aquatic ecology, Aquatic Biology and marine and estuarine biology, which existed at the time. So it was it was a good place to be.

08:09
And then that in, you know, my education only cemented my interest. And I ended up as a junior with a summer job working for the New York State conservation Department's Bureau of marine resources on Long Island. And they liked me so much that after I went back to school and started my senior year, they called me up and said, we have a biologist position that we're going to hold open for you when you graduate. And that was wonderful. And so the rest is history. There I went. I graduated on June 3, I reported for duty a week later. And 38 years later, I retired.

08:58
JS: Oh my goodness. So as a current Junior with no idea of what I want to do,.I mean, that that's

GC: the other thing I will say is I had a colleague at the department his name was Jim Calhoun. He was the chief of the habitat Bureau for the division of fish and wildlife for the department who right around the time of Jim's retirement, he gave a paper at Northeast Fish and Wildlife conference. And essentially the subject of the paper was career advice for midlife mid-career professionals in the field and it was tremendous job, Jim dented it. One of the things he said was, and I've always remembered this,
some, you got where you are today because somebody inspired you. Might be more than one person or it might be events or, but something inspired you something specific triggered you to set out on the path that you're on. And those those people are those are, in your own way your heroes. And at this point in your career, it's a good time to step back and reconnect.

10:16
And refresh what the inspiration was in who inspired you in the first place? And it really was tremendous advice. And it caused me to step back and think how, who, who, and how did I get on this path? Which was kind of your question in the first place, and I realized that it was a person. And
a person whose writings and whose life inspired me, and her name is Rachel Carson.

10:52
JS: Now I like to think of myself as a student of history. But who is Rachel Carson?

GC: Rachel Carson was a biologist with the US Fish and Wildlife Service mainly in the 50s through the early 60s, she wrote one of the seminal treatises of American literature really, although nonfiction, Silent Spring, that was one of the fundamental triggers of the environmental movement at the beginning of the 1970s.If you don't if you're in this field, and you are unfamiliar with her history, Jeremy, soon as soon as we're done, look her up.

JS: Of course, no, I actually, I remember who she is I just my brain, I had a book for a second, she was the one who found that the chemicals were making eggshells weaker, correct?

GC: That is correct. She, kind of her her writings triggered the beginnings of the regulation of chlorocarbon pesticides, and particularly DDT. And but more to the point, it changed our focus, it changed the focus of our society. And as important as that work was, she also wrote three books on marine ecology and marine biology. The Edge of the sea, The Sea Around Us, and trying to remember the third one that was a that was a book of short essays. Under the Sea, I think and the quality of her prose is amazing, almost poetic, I'll just leave it at that. Her books are what pulled me in.

12:46
More so than anything, those three books. And the other thing about her is that she was quite an individual. You know, her her career was remarkable, even beyond the writings, but on a personal level. This is a woman who battled cancer for many years.

13:07
And you know, just that alone, her her fight against cancer, and her desire to keep her status as a scientist and a professional, through that battle is very inspiring. So we can all do worse, and have her as a hero. Let me tell you that.

JS: No, it sounds like she is a wonderful person to inspire you and to you know, go into this field. No, no. No, very, that's very awesome. She sounds like a remarkable woman. And I love to look into her after this interview,

GC: indeed.

13:44
JS: So that actually, so now that we're on the subject of you know, environmental shifts or environmental changes, I had a question. Were What was your perspective on the American lobster die off that started in 1999?

14:00
GC: Well, it was, there were many. And I guess, I should probably start with a little bit of a disclaimer in that in that there was a lot that happened, then. A lot of detailed stuff, but it's now goodness, over 20 years ago. And a lot of those details are obscure in my memory, and I will do the best I can. But I may end up perhaps not being as specific about some things as would be of interest, but in any event.
I think there were my recollection of the onset of the incident is perhaps relevant, and that is that it was a, it was an unusual year 1999 In many ways with bad storms, the first ever outbreak of West Nile virus and the associated deaths of people attributed to West Nile.

15:17
Think of it a little bit like, what did you think of when you first heard about or when we first came in contact with COVID-19. You know, it's a new disease and everything that goes along with that, and I'm sure we'll talk more about that. But there was that. And then we started to hear reports that summer of weak lobster so lobsters in limp and in bad condition coming up in the pots. During the summer shed period, when you know, a lot of lobsters are normally harvested.

15:54
Lobsters dying in the tanks, once they got to the dealers, and initially this information kind of trickled in. And we realized after after some exploration that a lot of the fishermen and dealers were reluctant to talk about it, kind of hoping that this would pass and that it wouldn't affect how people viewed the product. And they it was just a negative thing. And they you know, so it was the information and didn't flow abundantly from the beginning. But it became unstoppable, before too much longer. And we started getting out on some of the boats with fishermen to observe what was going on. And it was pretty awful.

16:47
It was at the time, lobsters were our either first or second most valuable commercial fishery in the state. I think the same could be said for Connecticut. And we saw a very sharp decline in landings. And we saw this large mortality event that caused us to be very nervous about the future of the Long Island Sound lobster population, and with good reason it turned out. So the initial two questions that come up are, what the heck is causing this? And can we do anything about it?

17:35
And those questions that turned out were not easy to answer. And then we didn't get answers really quickly. And then the other kind of the next level of issues that we confronted as managers are what are the impacts? Short and long term on the resource? What are the

impacts on the industry? And what can we do about that? And so these were all of the questions and issues we began to go to work on.

18:12
JS: All right, so what were some of the solutions that you guys initially pursued?

GC: Well, one of the first things was we needed to try to get answers to the question, what was happening to the lobsters. And this is where I start to have some fairly dim recollection of the of the actual timing and sequence of the details. But it became important to us not just because of what was going on here but some other issues we were having with bivalve shellfish in particular, to to have expertise to acquire access to expertise in marine animal health, essentially, for all intents and purposes, veterinary services for marine animals.

19:09

We didn't have it routinely up until that point, and we were able to work with our partners in SUNY to to get some help. And once we did, and we got some experts looking at things. They identified a parasitic protozoan as the proximate cause of the the large mortality event. And, of course, there were other theories that that folks had, and theories in particular about whether there was direct toxicity from the pesticides used to spread west to control West Nile mosquitos was there. Was it related also to the
hypoxia of the bottom waters in western Long Island Sound, which occurred annually at that time. But that was a particularly bad year, did it have to do with some accelerated introduction of pollutants from heavy rainfall from tropical systems that struck the region that summer.

And, and, you know, and other things, but so we knew what was we know what disease the lobsters had. But there were other questions about whether there were other things going on. And that triggered, essentially the need for a longer term investment in research to follow up on these things, which we needed to undertake and find funding for. So mean, that was the initial response on that side of things. And then the other was to work try to work with the industry to get a much clearer picture of the actual effect of the die off on their on their landings and their revenue.

21:14
And eventually, we put all that information together jointly with Connecticut and saw a federal fishery disaster declaration successfully and funding from Congress based on that declaration successfully, that allowed us to launch a research program. Excuse me, and also a an economic assistance program. In response to the to the to the lobster die off. So it's is to some degree, that's almost the whole story other than what the researchers learned, and and I guess, to this day, there remain some
Skepticism and, and what have you, but it seems that a key finding was that the water temperatures in Long Island Sound, have become much warmer than the normal temperature

tolerance range for lobsters. And that has introduced physiological responses that make the lobsters more vulnerable to stressors, one of which is or was the apparent amoeba, and there are others. And I guess there have been some other incidents since then.

22:42
But the unfortunate truth is that Long Island Sound is probably become warmer than our American lobster can withstand biologically on any kind of a sustained basis in large numbers, like they were.
And how that the stress from that temperature manifests itself is probably in many different ways. One of the things that we talked about at the time, kind of, you know, amongst the the biologists and the managers are, you know, just stepping back from and ask yourself this question. We know that all aquatic animals have temperature tolerances, they have they have a range that they prefer, they have a range that they can tolerate.

23:34
Then imagine what happens to a population of animals as temperature, water temperature, aquatic animals of water temperature gradually, gradually slowly creeps up, up, up up into and beyond their tolerance, or for that matter goes the other way. How would that how does that manifest itself? And

we had a lot of discussions about the fact that it probably wouldn't be manifest itself in any single way. And it probably would manifest itself in different ways at different times.

24:14
But, but the key thing is that the the animals would either move, or they would experience some stressors that affected them in some ways that would make them less robust, and possibly die if they couldn't move, and that seems to be kind of the fate of the lobsters right now. And we noticed over those years that there were other species who could move who did, which did I guess I should say.
When I started as Marine Fisheries director in 1982, the the number one in two commercial fin fish species landed in New York were whiting and yellowtail flounder. You can look it up, whiting and yellowtail flounder are no longer particularly prominent in New York's commercial landings.

25:19
There were extensive early spring recreational fisheries for Atlantic mackerel, winter flounder was extremely abundant. And those fisheries are nonexistent anymore, for all intensive purposes are nearly nonexistent. And it's hard to rule out. Water temperature increases as the primary driver of these things. And those aren't all the examples, there are many others but so we see that but you know, the fish don't all die, they just leave. The lobsters in Long Island Sound weren't really equipped to leave.

26:04
So they, they were exposed to the stressors and and in this in 1999, this param para amoeba caught up to em. That's what, you know, that's that's that's what was evident to us. The, were

other theories that that pesticides and some other things, hypoxia may have been the primary causes. And it's possible, I suppose that they could have been contributors. There certainly. Certainly, hypoxia is a very clear problem in western Long Island Sound. And it tends to drive the animals out of the most hypoxic areas into more confined areas where they're closer together. And that creates issues, particularly for transmission of disease.

27:01
And I'm not aware that the research has yet shown a direct connection to the pesticides, but I'm also aware the many of the fishermen still believe there is one that just hasn't been found yet. And I suppose that research will continue. But that's, you know, that's kind of where we were now. So what can we do about it, as managers, you know, we're certainly not in a position to cool down on Long Island Sound. It was, it was a, it was tough. We didn't we weren't, we felt a little helpless, to be honest with you.

27:41
JS: I'm sorry about that. But I mean, it must have, you know, been sudden for everybody.

GC: Well, it was I mean, there, there have been disease issues from time to time that had arisen with lobsters and crabs before, but never anything like this. And nothing that that decimated the population the way this did. And it was, you know, it was I know, it was very tough on people in the industry that we spoke to very tough. I mean, not only were they losing their livelihood, they were losing a way of life.

28:12
JS: From what I hear, it's like a culture. Yeah. I mean, do you think these industries, especially in Long Island will ever short, like, you know, come back to the strength they once were.

28:23
GC: Inshore, commercial fishing is is is a tough one. And a lot of it is because of what I said that the climate change is affecting a lot of these fisheries in ways that may make it difficult for them to persist or be or recover. The fisheries, the fin fisheries and the shell fisheries, I think have a chance. You know, oysters in Connecticut and New York and hard clam fisheries are still productive in some areas. One of the things that people have told me, in fact Antoinette told me this is that we have unfortunately, however, at the same time seen that there's fewer and fewer young people interested in entering this field.

29:28
So she put it and I've heard this before the commercial fisheries. Population is to a certain degree aging out. I think there's there's a lot more hope for the larger scale, offshore fisheries, big boat fisheries and so forth. They're more lucrative and there don't seem to be more young people engaged in them but a lot of these kind of artisanal fisheries.

30:06

Fisheries, you put your back into it, because you're pulling a clam rake or oyster tongs or hoisting pot gear and so forth. So these are a little tougher, we don't see a lot of recruitment of new people into them. And, and some of the more lucrative examples like lobster are no longer viable. You know, guys made pretty good money on lobster before this happened, those who are in it, and now that's gone, largely gone. And, you know, Will something else come along that replaces them?

30:46
So far? No, I guess. Will the will the fish fauna in the oceans change in ways that simply replace current species with others that can be maintained? I think with that, that yet remains to be seen. That will, it will be that will take time to reveal itself that, but we do see some interesting things there. We do see some of the Mid-Atlantic species of fish becoming more abundant in the Gulf of Maine. And maybe that will be helpful to people in Maine, maybe we will see more South Atlantic species in the mid Atlantic and that sort of thing in time, and it will enable the fisheries to continue just using different methods and focusing on different stocks. There’s a lot of uncertainty.

31:52
JS: Of course, I mean, it sounds like oh, my gosh, it sounds like you need a psychic for that job. But yeah, but um, has anything related to lobster research in particular changed other than the sudden die offs? Or is that the most significant change that has happened?

GC: I have to say that there's, I can't think of anything. With respect to the fisheries in New York, it's more significant than that. Just ahead, I mean, Long Island Sound was producing a lot of lobsters. And then almost overnight, very little. And what we now see too, is that even the areas as I understand it, areas to the east and north of us have seen substantially reduced production. From eastern Long Island Sound, out off to south of Rhode Island, the south of the Cape, the inshore fisheries in the southern New England fisheries not doing well either.

33:00
So, it does seem that this this, again, fundamentally, climate change driven, reduction in lobster production is is the primary driver of changes in lobster fishery, there’s no question about it. Further north, I don't know.I know. There's been a lot of market stuff going on, you know, the, the fishery in the Gulf of Maine has been going gangbusters. And there's been in real, you know, recently a lot of talk about market issues up there, but I'm not sure how much of an impact that has in southern New England, New York, Connecticut just because the landings had become so low.

33:56
JS: Oh my gosh, well, that's worrisome. i One of my life goals is to have a lobster roll from Maine or Massachusetts, but a

GC: burrito

JS: Great advice. Thank you, sir. As always, yeah.
GC: My wife and I took our honeymoon in Nova Scotia. And that's all we get up there was eat lobster. Hopefully they'll still be the lobster in Nova Scotia in the Canadian Maritimes. And I know they're worried in Maine, and I know they should be. But I think they're if we can, as a as a global community do something here to stabilize our climate, maybe they will be able to hang on. I mean,

JS: that actually leads me to my next question. I mean, do you have faith that the water temperature, you know, will become cooler in time? Or do you think, you know, it's unlikely at this point?

GC: It's, it's, it's hard to be optimistic, but let's give the folks that are that are reemphasizing you know, climate change and climate modification as a as a priority, a few years to work on it, and then we'll kind of withhold judgment and see how they do. I pray for them every day, I'll tell you. So it's got to be a daunting task. And we all depend on him at this point. I'm so glad to see that it's become a national priority again.

35:29
JS: No, it is good. It is optimistic. But I mean, like you said, it is tough to be optimistic, but I mean, it's better. But, um, so I mean, I know you've worked down in Florida now, what is your how often Do you work with lobster still as a resource?

GC: Not at all. Absolutely. Not at all. This ever since I retired, I've had no engagement with commercial fisheries of any kind, it's entirely been working on this recreational stuff.

36:00
JS: Now, is the current recreational stuff, is there a focus on climate change there? Or what is the primary focus of that work?

GC: Well, our primary focus in the program I work on is in is in continuing to improve the quality of our estimates of recreational catch and effort, there is a lot of interest in the effects of climate change on how fisheries are conducted and where, you know, kind of across the board, and so, the data that we produce, the catch data that we produce, is is helpful to the to the scientists who are who are analyzing population changes and read population distribution changes, because that is reflected to a degree in a catch.

36:53
And so for that purpose, it is useful. And, and in fact, you know, what we see, you know, kind of confirms what others see in through fishery independent study, and and just fisherman's reports, and I, you know, the example I gave earlier as one we, we see that there is a an increase a relative increase in the catch of scup, and black sea bass in central and northern New England.

37:29

And that is hypothesized to be related to changes in water temperature. We also see very clearly and heck, some of this we saw long before I retired, significant decline in recreational catch of some species that are more northern in nature, in the mid-Atlantic and southern New England and I mentioned winter flounder and I, I think Atlantic cod is another example.If I was to look at the fishy equivalent of the Long Island Sound lobster, it would be Atlantic cod.

38:12
JS: And all the stock of fish is going to be hungry. All right, Atlantic Cod? Hmm. So let's see, I'm just going to actually take it into the work itself, how is the pandemic affected any of this?

GC: Well, I can't say how it's affected the fisheries, I can tell you how it's affected the work of my partners and coworkers in that it is it has been we have had we have seen our state partners who do most of the field data collection have to suspend, modify and modify some of the data collection because of COVID protocols. There was a period mid-year, late spring to mid-year last year when none of the states would send people into the field to conduct interviews. And because of all the shutdowns that were going on. And so we had we have a challenge now to figure out how to estimate recreational cats which we have to do without information from some of the states and months on that they normally would get from the angler intercept interviews.

39:37
We do collect effort data by mail surveys, so that's not been disrupted. And one of the other things that people are very interested in is that there seems to be a pattern generally, that recreate outdoor recreational activity of all kinds specifically including fishing and hunting, but of all kinds, has increased substantially in this year in 2020 over the preceding years. That kind of outdoor recreation was one of the things that people could do safely as individuals or as families, and and so license sales, fishing and hunting license sales tended to be up.

40:28
And there's a I've talked to people who work in fishing, tackle sales, and their sales were up strongly last year. Boat sales are up. There was you may have, I don't know if you see if anybody sends you this stuff up there. But there was recently a big report issued by New York State Parks or by the governor about a substantial increase in the number of visitors at state parks in New York last year. Oh, and so there's a lot of interest that people have in the data that we produce that comes you know, it's not anecdotal, it's hard data that comes from surveys about the amount of fishing activity that we see.

And what does it mean? And what does it mean for the harvest levels and the health of the fish? So that's, that's been, I think, probably the primary thing we are. Our access to certain kinds of the data for part of the year last year was cut off and now we got to come up with essentially imputation based models to to come to estimate total cash for the year. And this high degree of interest in our our effort our trip estimates.

41:55

JS: Okay, so, I mean, I can tell a lot of people are out sailing more. I'm from California, and I went sailing on a rental boat for my my 20th birthday, actually. And I saw like a horde of people out there on the ocean. It was wonderful to see. Most people I've seen more people out on the ocean than act in college right now. Actually. Yeah, well, okay. So, um, so what is the goal for the future with what you're doing for NOAA right now? What is the current? You know, what, what is the short-term goal? And what is the long term?

42:09

GC: Well, given how long I've been at this, there really isn't a lot. Right now, the short term goal is to get through this pandemic. And,you know, maybe within a year or so, that helped to hand off the management work I do to some new folks that will hopefully be hired this year. And get them started on the right path. I don't see myself continuing to work. And I'll fill out longer, I think, put it to you this way. Last June 3 marked my 50th year of continuous work in this field. And that's getting to be close to long enough.

43:20
JS: Jeez, well,I can't tell from your voice Sure. You sound very young.

GC: I am not that.

43:29
JS: So what's your plan afterwards? If you don't mind me asking? Do you think

GC: Once we can, we'd like to travel a little bit and then relax and enjoy our boat. And, and do some fishing here in Florida. And spend time with family that we haven't been able to see very much of.

43:48
JS: Well, that sounds wonderful, sir. So let me see. You touched up on a lot in your answers. So I have to see if there's any questions that have not been answered yet. Gosh, you gave me some very detailed answer, sir. Thank you very much. What is one thing you like the most about your profession?

44:08
GC: Well, gosh,that's it. That's a that's actually nobody's ever asked me that before. Well, part of it is that I've always had this interest in fish and aquatic ecosystems and so forth. So it's just enjoyable to work. You get to work on what you're interested in, to be to have that opportunity to be engaged on something that actually really interests you. On a regular basis. I think that's there's a lot to be said for that and a lot of you're very fortunate if you can do that. A lot of people can't. And the other thing is that, conservation. Conservation is it, you know, kind of a self-rewarding field, if you can achieve things in conservation, that are useful, I'll tell you.

45:19

And an example. One of the well-established, you know, quote, unquote, success stories in modern fisheries management, marine fisheries management was the recovery of the striped bass, Atlantic striped bass, beginning in the late 1980s, and into the 90s, into the turn of the century that that took place. And, you know, without going into the gory details, it was ugly and tough. And it there were times when it wasn't very pleasant. But at the end of the day, our collective efforts at conservation and management led to a very substantial rebuilding of the population. So that a, there was a strong fishery there were there had been hardly any when I started, and I can remember

46:24
Gosh, this was after I retired, I think, while I was still working, still commuting back and forth. Over in Maryland. I was home for a brief period, and my son who still lives on Long Island. And I went out on a fishing boat, the Laura Lee out of Captree. State Park. I knew the captain pretty well, from from my my working days, Neil Delanoy. And they were fishing at that time, this was in the fall on migrating schools, the striped bass, off Fire Island off in the ocean, off Fire Island, New York. And it was a rough day, with the big rollers out there, I was feeling a little green, to be honest with you. I caught a couple of fish. And I said to Matt, I'm done. I'm just gonna go sit down. And so I went and I sat down, and I sat there and I started looking around. And what I was seeing was all these people that were having just the the time of their lives, catching these big stripers. And they weren't little I mean, they were, you know, 20-to-30-pound average, left and right, just absolutely beside themselves with joy and thinking. We did that. So in a way, it's hard not to like that.

47:55
JS: No, I mean, that's beautiful. I mean, you probably get some kids and childhood memories of catching fish with their pa or something like that, you know,

GC: Hopefully. And that's what it's all about.

JS: That's wonderful, sir. Seriously, I've never heard a better motivation for why someone likes to work. Oh, well, I'm glad. So let me flip the script a bit and see what is the thing that you liked the least about this profession?

48:27
GC: I will tell you what drove me to retire.

JS: Okay, I can't wait.

GC: When you're when you're in the position of being the director of a large agency program of that nature, every day, every day is a is a is a never-ending struggle for resources. And it wears you down. So, you know, you're to some degree competing for legitimacy with other governmental programs to some degree competing for visibility from, in my case, from a remote location in southeastern New York when the Capitol is up in Albany.

49:24
And it just literally wears you down. This is so that and the other thing is just dealing with personnel related issues. Everything from personnel problems, to the difficulties of dealing with the civil service system in hiring, to hiring freezes and the frustration that somebody leaves, you can't refill the vacancy, all of these things and then that melds over into of the resource issue. So you do that for 25 years, and it grinds you down. And that's, that's I, that's what I find. When I, when I went to work, these guys that went to work with with NOAA were not people who were unknown to me, I knew them very well. And I told them when I walked in the door, I said, don't even come near me with any budget or personnel related work. No, I didn't come here to do that just stay away.

50:28
We help you happy to help out in any other way. But that's why I'm here. So, I'd have to say that

JS: you put your foot down, that's good.

GC: Well, you know, and a lot of it is, you know, those, it's dealing with a bureaucracy that is not invested in what you're trying to accomplish. You're dealing with, and this isn't unique at all. To to the director of marine resources for the New York State DEC. This is this is a universal, I think within government, state and federal government, probably local to that those of us who work in the line offices and, and do the people's work are motivated to, to accomplish our objectives and tasks and to and to provide public service benefits from our programs. That's what we're motivated to do very strongly.

51:36
But in order to do that, we need resources and help from people in with in programs with names like the Department of Civil Service, or the division of Management and Budget. They don't care about our programs, they're not the slightest bit motivated to produce to recover the stripe bass population. That's not what their job is. And so I've often, you know, that that kind of the dark side of government is that it's difficult for managers over time to keep fighting those battles, and remain motivated.

52:25
JS: I'm sorry about that.

GC: And I've talked, I think it's not like I'm the only guy that feels this way. I've certainly talked to lots and lots of other peers. Yes, it does. It does. It wears you down.

JS: Quite sorry. But I mean, it still sounds like you did a lot of good. Despite all the difficulties you encountered with them. I mean,

GC: it's, it's just after a while. Enough is enough. Time for the next guy to try it.

52:54

JS: You got a young
GC: Yeah.

52:58
JS: That's good.

GC: He's done a good job. He's doing a really good job.

JS: Geez. Okay. So that's good. That's good, you know, carrying on the legacy. But um, What, has there been a particular management strategy that you've disagreed with?

53:18
GC: Well, yes. And this will probably this would probably start a lot of arguments between myself and some fishermen, I suppose. One of the one of the one of the issues is that what are the that we've always been front confronted was what is the mechanism by which fisheries regulations are adopted and put into effect. It's done different ways in New York. And it's done different ways between New York and some other states.

54:09
When I started in Marine as the director of marine resources, all fisheries conservation, all marine fisheries, sorry, conservation related regulations. were adopted only by acts of the legislature by amending New York state environmental conservation law. We argued for years that this was inefficient, you know, inappropriate, untimely prevented us from achieving conservation goals and that what should really happen is that the professional fish and wildlife biologists and resource managers should be able to set fisheries regulations through the process of administrative rulemaking as is done in the federal government.

55:11
Eventually, starting with striped bass, actually, the legislature did convey some qualified authority to the department to adopt regulations for fisheries. They kind of had to because the, the federal and interstate fishery management systems became more complex and required a lot more nimbleness or timeliness on the part of states to to implement state and stay ahead of them. But there were certain fisheries that that the legislature would not convey that authority for and the number one example was American lobster. We were never given administrative authority to adopt lobster management regulations.

56:13
And there was a lot of resistance on the part of the lobster industry to changing or adopting more conservative regulations. And, and yet, there were some in the industry who were advocates for it. So it was, it was kind of tough. And without getting into the details of it there. There was also, there came a time when there was an interstate management program that we needed to get in get engaged in. And I think we did a little bit better when we created. The interstate program established different geographic regions for lobster management, Long Island Sound was one of them. And that set up a process where we had a regional industry

team that included people from boat fishermen from both New York and Connecticut fishermen and dealers, working with the agencies to identify, identify ways to meet the goals of the interstate program. And I don't think it was a bad model. I think I don't know how well it has done in the years since I retired. But the problem was it kind of got rendered less relevant by the dial.

57:39
So it's a little unclear to me. But I think conceptually, it was the right way to go because it involved partner decision making, you know, kind of co- management between industry and government. And it's certainly involved co management with New York and Connecticut jointly participating. But at the end of the day, whatever that group came up with was still going to have to be implemented in New York by legislative action and the agency couldn't do it. And it's not unique there. One of the other examples I've seen of similar sort of thing involves deer management in New York.

58:18
In most of New York State and in most of the states, deer seasons and and, and annual deer harvest regulations are established by the wildlife managers in the state fish and wildlife agency. But in New York, the legislature conveyed that authority for the entire state except the Adirondack region. And that's all politics. State legislators from the Adirondacks going back to when I was a boy, got mad at the Conservation Department for some what they saw as mismanagement of deer. And as a result, only the New York State Legislature will set deer hunting regulations for the Adirondacks. The stupidest damn thing I ever heard of.

59:22
But unless they've changed it since I retired, it was it was that way right up until then. So to me, that's probably the one thing that I disagreed with was the the state legislature refusing to expand our regulatory authority to lobster and some of the shellfish that I thought they should have. And I don't think we did a bad job at all with the things that we did have regulatory authority over and in fact that they would have at sunset and they kept renewing it so we couldn't have been doing to bad. I did think however, Jeremy, there is one other issue that I don't agree with that that I think is a bad decision.

1:00:09
And that is the refusal of New York state to adopt a saltwater recreational fishing license. They did adopt one for a year, and then terminated it. Was that was after this is all after I retired. And I won't go into all the details of it. But I just think it's hideously stupid not to have a saltwater fishing license. It just doesn't make any sense at all to me.

1:00:44
JS: What do you think is the downside? If there is, you know, if since there isn't a saltwater, recreational fishing license, I do think it's overfishing or what what do you think it's going? What do you think?

GC: Well, why have it means so what's the, you know, why have a license? Yeah, I think there are several reasons. One is that it creates revenue for the program, that's the most important reason it creates dual revenue, it creates direct revenue as a result of the license fees themselves, which by law would go into a dedicated fund to only be used for marine fisheries purposes. And it also, in New York's case, would increase the amount of federal funds that that come to us from the US Fish and Wildlife Service's federal aid and Sport Fish Restoration Program. So the biggest reason is the revenue. The second reason is it the relationship it creates between the angler and the resource.

1:01:53
You know, it's a little like, you know, I said, I grew up upstate, when you were 13,14, you went and took hunter safety training, and you got your junior hunter license. When you were 16 you, you got a fishing license. When and right around then 16 or 17 If you could you got your learner's permit, you started to drive it was part of growing up. And it connected you to the resource in a in a very tangible way that carried through it may. It legitimized your engagement in conservation.

1:02:40
And there's there's too much of a disconnect among some marine anglers. And I think, over time, a culture like we had with hunting and fishing licenses, or I grew up would would help to reduce that disconnect to some degree. There's also the direct benefit of having a and this is what I was hired to do at NOAA, to have a complete list of saltwater anglers in a state in terms of having a list from which to conduct us to derive a statistical sample to get statistically valid information on a variety of subjects. And it creates the connection vehicle for communication between the agency and the angler. The agency has the anglers, name, address, and other and maybe email address and so forth, they can exchange information. And that's really important.

1:03:56
Now, New York has adopted a free no cost registration program, because they had to, because of my program, if they didn't, then the federal government would be requiring New York anglers to to pay to fish off Long Island and nobody wanted that. So they adopted this fishing license. They had it for a year, they lost the fee. So they lost the revenue, but they retained a mandatory registration. I still in So, in theory, at least we have a list of fishermen that we could or DEC could contact and in New York, that list is used by my agency. For that mail survey I spoke of.

1:04:43
To contact anglers about their fishing trips. And I know that because I have one of those registrations. I know that New York State does send information to people. They can subscribe to different options about it. Conservation subjects, environmental subjects. But here's the thing. One of the things that we see is that the states in which these registrations are not paid for, they're free. And that includes New York, New Jersey and Maine primarily. There tends to be lower compliance, even though you don't have to pay for it, then there is in the states where the anglers pay for their fishing licenses. And part of the so why is that? Well, it seems that the the absence of a fee sends the message that it's not important.

1:05:48
If it was important, you'd have to pay for it. And it sends that message to the angler. And it sends that message to the enforcement institutions. Both law enforcement itself and the courts. And so it's, it's, it's, we have pretty good evidence, it'll it'll show that the likelihood is that a that a mandatory license with a fee will generate a higher degree of compliance and a more complete registry of anglers, which is very useful.

1:06:29
JS: Yeah, and then it will help bridge the disconnect you're talking about? Well, that's actually a very interesting point.

GC: Yeah. I, when I came to Long Island, we I encountered this attitude that, you know, it's the ocean, it belongs to everybody. It's free. You know, government doesn't control it. You can't you No, no, I'm not, you know, licensing is, you know, and so on and so forth. I grew up with the notion that hunting and fishing were privileges. And that, that I was part of a community of hunters and fishermen who believed in conservation, and it's, you know, in that my license was part of my participation in that community.

1:07:19
And it's, it's just, it's culturally a different outlook. And I think it's much more constructive, to be to be part of that community of conservation supporters. It's a subtle thing, but I believe it.

JS: No, so sometimes the most subtle changes have the largest impact on our own worldview. So I believe that too. That's very interesting, sir. Earlier about about earlier in that response, you mentioned that there was an interstate management program, do you remember the name of it, that you know that connected with various agencies, I believe across with the lobster resource?

GC: Yeah, so that is backing out. Marine Fisheries Management operates kind of on three levels. Four really, but we won't worry about international. It operates on the federal level, and operates on the state level, and it operates on the interstate level.

1:08:32
A lot of our marine fisheries are either migratory or they are stopped trans boundary in their distribution and management by a single jurisdiction frequently, therefore can't be effective. So over time, institutions have developed to manage these so called inter jurisdictional stocks, cooperatively among the the responsible entities. On the federal side, the Magnuson Stevens Fishery Conservation and Management Act establishes the federal management system for those fisheries which are predominantly occurring in the federal exclusive economic zone, which is from three miles offshore to 200 miles offshore.

1:09:27
And in that system, there are regional fishery management councils of state officials and industry representatives who develop fishery management plans and objectives and guidelines

for the regulation, conservation and management of those fed primate predominantly federal fisheries. So in so in New York, New York is a member of the Mid Atlantic fishery management council and it manages the fisheries that predominantly occur from Cape Hatteras to the New York, Connecticut, Rhode Island boundary.

1:10:11
And then the fisheries in state waters are predominantly managed by the states. But then again, a lot of those fisheries are inter jurisdictional in nature. So it was decided a little over 75 years ago, that the Atlantic coastal states would form an interstate compact, the Atlantic States Marine Fisheries Commission, to work together cooperatively to achieve cooperative conservation and management of those shared fishery resources that occurred predominantly in state waters. That certainly includes the anatomist fisheries like striped bass and Atlantic salmon and shad river herring sturgeon. It also includes some of the near near shore coastal fisheries.

1:11:02
And over time, it was eventually decided that the Atlantic States Marine Fisheries Commission's kind of loosely organized cooperative efforts needed to become more structured and more formalized, because they would adopt fishery management plans that had recommendations, but there was no obligation or in some cases incentive for states to act on those recommendations. So the original, for example, the originals, interstate striped bass management plan, that was adopted, I think, in 1980, or 81. Around there before I was director, some of the states including New York said, this is a nice plan, and we support adopting it, but we have no intention of implementing.

1:12:06
And so its its objectives, its conservation objectives, were not likely to be achieved on the basis of simple volunteer voluntary action. Congress kind of then stepped in and passed legislation that said, if you're going to take our money, states, then we want you to implement these recommendations that you've come up with. Or if you don't, then we'll step in and manage this fishery.

1:12:42
So first, the Atlantic striped bass Conservation Act just for striped bass and then later, the Atlantic coastal cooperative management act act, Fatma were enacted. These were this was in the 90s, I think, by the time the Skinner late 80s, but probably the 90s When in fact, what came along, that formalized the program of the Atlantic States Marine Fisheries Commission, into what became the Commission's interstate fishery management program.

1:13:17
And under that program, though, the member states, those those that were involved in a given fishery came together, jointly and cooperatively developed fishery management plan and identified necessary regulations at the state level to to attain its objectives. And then went through a process of annually evaluating each of the member states compliance or their their program added consistency with the management plans, requirements. And if in the event that

the Commission determined that a state had not complied, and that that noncompliance jeopardized the conservation of species, they could ask the federal government through the secretaries of commerce and interior to step in and close the fisheries in that state, the fishery in question, which has happened a couple of times. It's pretty rare.

1:14:20
GC: so we have the federal system involving the regional fishery management councils under the Magnuson Stevens act. And then we have the interstate Fishery Management Program of the Atlantic States Marine Fisheries Commission. In both cases, they write fishery management plans that have objectives on on conservation and management of the fisheries. In both cases, they are active hands-on management programs that establish and maintain and update periodically, the fisheries regulations that need to be implemented to achieve those goals.

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However, some of the fisheries don't sit nicely in just state waters or just federal waters. Some of them cross that line three miles off the south shore of Long Island, New York, etc. And so it gets a little more complicated in those cases. And one of the species that falls into that category is lobsters. So in the years. The early years of the Atlantic Coastal Act, we the interstate program did not have a lobster management plan. However, the New England Fishery Management Council adopted a fishery management plan for offshore lobster for lobster in the federal exclusive economic zone.

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And their plan had implications for state-based lobster fisheries. And I don't remember the dates and I don't remember all the particulars. But there came a time when the New England Council decided that the only way to achieve their goals was essentially to adopt a limited entry program on participation in the offshore lobster fishery, and that that program itself also wouldn't be effective unless the states did it too, in their waters. And so they contacted they wrote letters to every coastal state from New Jersey to Maine, and said, we're going to do this offshore limited Entry Program, would your state be willing to do the same so that we have consistent management in state and federal waters.

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And most of us kind of looked at this letter and went gulp. We don't have the authority to do that. And so we remember we had a meeting of the the Atlantic States Marine Fisheries Commission's governing board for the interstate program, we call it the policy board. And had a discussion and decided that the most effective thing that we could do at that point would be to write an interstate fishery management plan for American lobster. The offshore fisheries are important, very important, but the inshore fishery really dominates the landings. So and and, and the number of participants in the inshore fishery far exceeded those in the offshore fisheries. So it didn't make sense. It seemed like the tail was wagging the dog, let me put it that way. The offshore fisheries tail was wagging the overall lobster fishery dog. So we did embark on at the state level, the interstate level, and adopted an interstate fishery management plan for lobster. And as I alluded to earlier, the key feature of that plan was to identify lobster

conservation and management areas geographic units to be managed to kind of co-managed with industry based regional teams to achieve the biological objectives that flowed from the stock assessments on the defined unit stocks of lobsters.

1:18:28
And I, you know, I thought it worked. I thought it was the only way it was going to work. And I, I couldn't tell you today, how effective it's been in the long run, because it's been 20 years since I looked in on it. But it really seemed like the right approach at the time. And what happened was that, in fact, the dog did end up wagging the tail because they dropped. The New England Council dropped their management plan. They withdrew it and instead said, Let's we're going to join the interstate process, we will create a lobster conservation and management area for these offshore waters, large offshore water areas and manage consistently with the interstate process. And they did.

1:19:18
So, I mean, that's kind of how it all worked out. That was a pretty good model. Now we have others. I mean, we if you look at some of the finfish the, for example, four of the largest and most productive recreational fisheries in the mid-Atlantic region are summer flounder, scup, black sea bass and bluefish. All four of those fall into this category of trans boundary both federal and state fishery areas and what's happened in that instance is a little different than lobsters. There is a federal fishery management plan. And there is an interstate fishery management plan for each of those four species.

1:20:06
They are basically the same. And so there's a shared management between the, the federal system and the Mid Atlantic Fishery Management Council, who, who sets it. And the states in the end the interstate fishery management program for the state waters. And there is a there is an effort to achieve consistent objectives for the management, the fishery for the condition of the stock for annual catch limits, and to the degree possible for regulations that are calculated to achieve those things. It's a little bit messy, because there's so many entities involved. But it has it has persisted for many years now. And it seems to work.

1:21:06
JS: Okay, that's good. Oh, my goodness. Gordon, you just described a wonderful mess of things, a lot of different details, a lot of different. Oh, my gosh, I mean, how'd you do it? Geez.

GC: Well, that, you know, it was a lot of this was inherited. But it's true that a lot of the particularly the interstate stuff evolved. Well, I was just state director and my pleasure privileged to be involved with my, my counterparts in putting this all together.

1:21:47
JS: Of course, not. Wow. Oh, my gosh.

GC: Now that you know, now that we're old and retired, we look, we look at the guys that are doing it now. And we say, You guys are messing this up now. Straighten yourselves out.

JS: And get on the path of righteousness.

GC: Yeah, that's right.

JS: Oh, my gosh. But um, hopefully their successors can be even better. Yeah. Oh, my goodness. But wow, Gordon, thank you for all that. I think that actually brings our interview to a close you could wonderful. Is there? Is there anything that you wanted to talk about specifically?

GC: Well, there isn't anything that I wanted to talk about. I do know that. Antoinette mentioned to me that she's been unable to get anybody directly involved in the economic assistance program, to to do an interview and asked me if I would answer questions, and I told her, I'd be happy to do it. But I just don't remember that much of it. Other than I remember that it was important to to have an economic assistance, component flow from the federal disaster declaration that we successfully pursued. And that I think, you No, I don't remember all of it anymore. I think a very wise decision was made on the part of the New York State to ask the New York State Department of Economic Development to administer that program, because they had the rather than have the DEC do it, because those folks know how loan programs and things of that nature and and economic retraining work much better than the conservation folks did. And I thought they did a nice job with it.

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As I recall, there was a direct payment to industry based on landings history component, there was a loan component, there was a job training and kind of a reemployment piece of it. And I don't remember, of course, I don't remember what else there was in the economic assistance. I just don't remember the details. I do remember this. And this, this surprised me at the time, in the period of years leading up to the die off, Connecticut, in their lobster fishery, through their regulatory process, maintained a trip based logbook program, their permit, their commercial fishermen had to have a license, and they had to maintain a logbook that was ultimately provided that reported their catch per trip. I don't remember how frequently they had to send it in but it was it was it was not once it was multiple submissions over the course of fishing year.

1:24:51
In New York, we didn't have that. We the only thing we had was that in order to renew your lobster license at the end of the year, you had to fill out answers to questions on the back of the form as to how many pounds of lobsters you had landed in the preceding year, basically. So it's based on an annual recall. And, you know, who knows. But but those became the basis or a large part of the basis for the individual awards in the assistance program. And at the end of the day, it appeared to me and I discovered this would probably need to be verified by somebody. But it appeared to me that on average, that Connecticut fishermen got more money than the New York fishermen.

1:25:54
And I know that they didn't fish more gear, and I know that they weren't better fishermen. Not a chance. So it had to be that that logbook program had the benefit of documenting a higher catch history than New York's annual remember, as best you can thing. And it always struck me that it would be would have been better. To do a logbook program. We had advanced commercial fisheries logbooks for commercial fin fisheries in New York. In the years before I retired, I don't know if they've done anything with lobster since then. I just don't know.

1:26:39
But but back then they had not, and it was part of this thing, we would love to do it as a as a as a rule. But we couldn't we didn't have regulatory authority going back to that question. So that was an interesting thing. And I was trying to think there was a result, something else just went through my head that kind of spun off from that. Oh, yeah, this, this this benefit, if you will, of having a essentially, a vessel history of catch. At a time when government is administering a commercial fisheries disaster based economic relief program is not unique to the Long Island Sound lobster fishery. One of the things that we observed, for example, and there are others here in the Gulf of Mexico following the Deepwater Horizon spill, was that in many instances, the boats, charter boats, in particular recreational charter posts, that didn't have good catch histories.

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And could have, but did didn't get as, as, as good an outcome from economic assistance programs as vessels get. And that the absence of detailed information on the amount of fishing effort and, and revenue produced in those fisheries after the disaster really hurt them. They'd been so much better off if they'd had it. In some instances, they resisted over the years, doing these sorts of things, and then along comes Mr. Oil Spill, and it hurt him.

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And as I said, I know that I've seen some other examples of this. So when people ask what good are logbook data, they tend to usually talk in terms of having good data for management purposes, or for doing stock assessment, fishery stock assessments, which is absolutely true, but they might overlook the fact that it's it having a vessel history can be very helpful in at a time when sadly, there is an economic disasters, a fishery disaster is declared. It history tells us you see the boats that had them were better off than the boats that didn’t.

1:29:29
JS: Wow. All right. So I mean, sounds like you have a very high opinion of them. That's good. But geez, I mean, that oil spill must have been devastated.

GC: It was. And to some degree, in some places, the effects are still being felt, at least at least ecologically. The economic impact has largely been bypassed now but there's still oil out there unaccounted for affecting the benthic system.

JS: Have you known a period of time, do you think right now, or in the past few decades have past, is this a low point for the ecosystem? Along the American oceans and waters?

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GC: Well, I don't know but, Deepwater Horizon was kind of a unique thing. Probably if you discount that, there probably have been fewer oil spills in the estuaries and whatnot, and we've certainly seen substantial improvements in estuarine water quality in many places, New York Harbor and the inshore areas, Delaware Bay. One of the contributors to the striped bass population decline was the pollution levels in the Philadelphia-Trenton area in the '70s and the early '80's preventing striped bass to their historic spawning area. And that was reversed through the construction of waste treatment plants.

1:31:08

Now there are and have been for some decades now upstream stripers spawning in the Delaware. I've seen, one of the other things I've seen that is very positive is that some of the efforts at habitat restoration, oyster reef restoration in particular, even a story as recent as this week, on how the benefits and successes associated with oyster reef restoration in the bay, is a great story, and really important.

Things are changing, and they're going to change as a result of climate change, but there are also areas in which we see improvement, and as a society have invested a great deal with that. So it's good to see it. We continue to , I'm not sure how they're doing with lobster in Long Island Sound, with cleaning up the sources of nitrogen related contamination that fuels hypoxic events, but I know they've made progress.

1:32:21

And a lot of these things won't turn themselves around overnight. It's a pretty big battleship they have to steer. But, so, other than climate change, and the changes it is inducing, probably more positive than negative, is my reaction. Now I'm in Florida now, and in Florida there are some very specific problems that are specific to Florida. Largely relating to the Everglades. And whereas, I don't know if things are getting better. I do see one very positive thing and that is a consistent, persistent commitment on the part of state and federal government to working towards Everglades restoration and elimination of some of this water circulation and problems associated with it.

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But they may not be achieving results yet. But Republican and Democrat alike, they seem to be committed to resolving the problems and issues. That's kind of positive. It's just going to take a long time, I'm afraid. We may not see those results in our lifetime even. But they seem to be headed in the right direction. Some things that may be less, I don't know, invasive species. That

one bothers me. Not just in aquatic ecosystems. Terrestrial systems and American, the American native tree fauna. I'm very concerned about. We need, we need research on ways to battle or combat invasive species, both vertebrates and invertebrates, microorganisms even, on a massive scale.

1:34:54

Cause they're here. And it's not easy to get rid of them once they get established. I did read, and I haven't been able to follow up on this, that there was some research underway and it might have been at the University of Georgia, but somewhere in the southeast, where some possible ways of introducing, it's almost like a sterile male, almost a modernization of the sterile male approach, to introducing factors that will render, and have the potential to render, very large population segments of certain species infertile. And they're looking at it for things like the imported Asian carp. It might be, there might be an ultimate solution there, that's the kind of thing we need. It's not enough to just say we want to prevent introduction of invasives; they're here. And they're making massive changes of things.

1:36:04

JS: and we have to be careful of whatever they introduce to render them infertile to protect the rest of the environment.

GC: Exactly and that's a lesson learned. Hopefully and relearn in several applications. It has to be, it has to be self-controlling.

JS: Yes of course. I remember reading a story like, they wanted to call it an invasive species and so they introduced another invasive species. It's a mess. I'm glad, aside from climate change, it appears to be optimistic for the future, it's good to know, to know that because honestly, I worry for the environment personally. So it's nice to hear. If it wasn't for climate change things might have a more positive outlook. I do appreciate your time.

GC: But here's the thing. Because we tend to look at things, in time chunks based on our own experience. When I was a young biologist and went to work briefly for our regional office in New York City, for the Department, one of the guys I got to know right away was the regional water quality engineer. Name's Charlie Miles. Charlie said one day, "you think the water's dirty now?" He said "you think the East River's dirty now? So what do you think it was like when there was 500,000 horses wandering the streets of Manhattan and Brooklyn?

JS: That's a fair point. Like the Macy Day's parade. That's actually a fair point. I'll keep that in mind. I might quote you in the future sir.

GC: Quote Charlie.

JS: I'll quote Charlie. Charlie Miles as reported by Gordon Colvin. I believe that brings our interview to a conclusion. I had a great time talking to you, you're a very funny man. I had to mute myself to keep my laughter from interrupting our dialogue. So this is the end of the interview. I do appreciate it. Nice talking to you sir. I hope you have a good day.

GC: you too. Take care now.
JS: Good luck with retirement. Bye bye.

End