

Molly Graham: [00:04] This begins an oral history interview with Dr. Usha Varanasi for the NOAA Heritage Oral History Project on Wednesday, April 26, 2023, and the interviewer is Molly Graham. This is a remote interview with Dr. Varanasi in Seattle, Washington. I'm in Scarborough, Maine. There were a few things I wanted to follow up on from last time before I asked you about your early career with NOAA. It's actually a good segue because before we hit record, we were talking about gardening. Something you said in one of the essays you shared was that this exposure to gardening during this period when you were unemployed really showed you the connections between nature and health. I'm wondering if you can explain that a little bit more.

Usha Varanasi: [00:51] Right. Definitely. There were two things that led me to get connected with this awe-inspiring feeling that you get when you are out in nature. It doesn't mean wilderness. It can obviously be wilderness, but there are so many ways nature can be experienced. During this period, two things happened. The first was during my unemployment. I couldn't find anything. Finally, I gave up looking for it and getting rejected. I decided we would just wait for a time when we went home and came back. I could afford it because my husband had a job. We had just enough money to survive. There was a library nearby, a public library. I decided I'd just go and see what the libraries have, and I fell in love with – I was a newly married woman. Even though I was married for three years, I didn't have any time for learning anything that was more household-related, so I didn't know that much [about] cooking. I didn't have that much time for cooking. We lived in a furnished apartment and all that. I thought I would learn about what goes into being a homemaker. That was the general idea. But I got attracted to these magazines, horticulture magazines, and the photos of the flowers, and then started to read about plants. I never thought that I could have a garden because I was living in a two-bedroom, 850-square-foot apartment. But I liked this idea of starting a plant and multiplying it because I thought that otherwise, it was an expensive hobby. I picked up a couple of plants when we went grocery shopping or something and started to work on multiplying them, cuttings in water, cuttings in blah, blah – anyway, what happened is that our apartment had a little patio – not patio, but just going out [the] door, there was a little landing. It was a very small apartment house, so there were only two apartments. I kind of took over the outside space, put a couple of tables, and started putting [out] miniature roses and small plants. It turned out – two things – that I so enjoyed doing. I also had a knack for multiplying plants. Soon, it began. I think I talked about – it just happened to be [that] my next-door neighbor was a photographer. Every morning, as he would go, I would have water on my plants, and he'd take a picture. What it did was start to give me a feeling that – I was a happy person generally. I am a happy person generally – but something beyond just being excited or happy or purposeful. This was a different kind of happy. It was some connection. I can't say what it was, and I did not articulate it until I started to write in my chapter that that was actually the beginning of [my] connection with living things. Until then, I grew up in an apartment in Mumbai. My father was [a] stickler for cleanliness. We never [talked] about bringing dirt inside with a plant. [That] was unheard of.

We come from a Jain community, so harming a plant is also bad. Pruning and all was not something that could be looked upon – anyway, I didn't have time or space or understanding, although my grandmother had a very – my maternal grandmother had beautiful gardens. I kind of knew that I liked it, but it did not strike me as a life-changing event or something during that period. I started to have plant lights inside my apartment, and I commandeered one of the two tiny bedrooms we had to grow plants. Everybody – all my friends – remember even now that I used to grow African violets. Anyway, then I got [a] full-time job, so the garden was there; I always came home and took care of it. But in 1970, after we came back – I mean after I got my job. I had come back from India, got my job, and got started, and just about six months into the job, I was discovered to have rheumatoid arthritis. I just had such a huge episode and flare-up that I had to be hospitalized. We did not know what it was, and it was very painful. I got hospitalized. In those days – this was in '70. In those days, there were no rheumatologists as a specialty. Most hospitals have oncologists because it is an autoimmune disease. I may have said all this to you, so let me not go into too much. Anyway, that gave me a purpose to come back, or even when I just sit there, to look at the outdoors, and I realized that just looking out of the window at the neighbor's trees – it was another apartment house where there were some trees – and looking out, there was Mount Rainier view, and suddenly, it was health-giving. It was mentally giving me peace or some special kind of peace, but it was also giving me actual rest from real – it was a very worrisome period of [time]. What if I become –? What if I can't do anything, I become invalid, and I end up in a wheelchair? Because I was told that this is a chronic disease. There were times I couldn't even bend my hand. I mean, it was horrific. But how lucky I was that because I had already started working there and had made friends and had shown that I brought something different than just a research postdoctoral fellow – I was interested – that they gave me an opportunity to work from home. They gave me an opportunity to go when I could go to work because somebody had to give me a ride, and I couldn't hold things, so people had to help me. But I was accepted. The illness was taken as – and there were a couple of executive secretaries – they used to be called secretaries, but now, executive assistants. They [treated me] like I was their little girl. They took care of me, and all of this together made me realize – and then there was this one secretary Isabel Diamond. She used to give me this song called "Hyacinths [to Feed the] Soul." I don't know one of those famous persian poet – when she would go shopping and buy something she did not need, she would come – she loved shoes, so she'd bring very expensive shoes, and then she said, "Usha, these are hyacinths for my soul." It has no other value except [to] give me pleasure. I always remember that, and I thought that is what flowers bring in my life – yeah, that's how nature – so, after all these years of working in NOAA – I mean, I learned to garden, and gardening became my passion. I found I could relieve the tension of any difficult situation at work; I could come home and work out in the garden, and I would be better. All of that ended when I retired, and I ended up being invited to meet the dean of the School of Public Health, who was very interested in the nature and human health connection. He invited me to join that group. I found my footing because it was almost as if I was being prepared all these years by two things: one, working in

NOAA and seeing, to some extent, the futility of trying to recover endangered species. We brought them to a stage of recovery where bringing them is only pleasure to us; it's not doing that much for the species, and restoring really terrible habitats that are degraded – you try to restore it, and I found out that if you go back after you restore a habitat, a few years later, the sort of domineering or opportunistic species takeover. The biodiversity of a restored habitat was never the same as biodiversity when it was in its full health. So that all was getting in my head, little by little, I must say, not consciously. I worked very hard to restore degraded habitats. I was working very hard to recover endangered species. But I started giving talks to say that it costs one-tenth or less to actually conserve something good than try to fix something that is totally almost at the brink of extinction – restore a habitat that's beyond restoration. But every time I talked about it, people paid no attention. I would show them a pyramid in giving talks because I was in the Environmental Conservation Division [ECD], and I showed them the top of the pyramid; these are all the areas in an estuary. The top of the pyramids is the most polluted, most degraded estuary, and the bottom of the pyramid is the one that is practically not touched but doing well. And in between, this huge area where things are beginning to go bad. Where does the money go? So this pyramid is there. The size of the middle is big, the size of the bottom is also big, [and] the size of the top is very small. All the money is going to the top apex of the pyramid because it really makes us feel very noble. It is human nature to show that they took care of a crisis. Anyway, it was in my being – it was in my mind that if you spend more time saving what's already in good condition, just keeping one eye on it and just giving enough money to whatever the community is doing, or just enough to say these are the standards we should not allow it to go below, we could spend our money so well. But you go to Congress [and] you talk about that, they just laugh you out of there because they are interested in solving your crisis. This is why the ocean and human health program – I don't know who I talked to – did not work because it was all too good. It was a good news story. The good news does not incite in you anger, fear, or worry; it doesn't propel you into action, which is a very sad thing.

MG: [15:11] It sounds like this was a theme throughout your career.

UV: [15:14] Theme throughout my career. I go back then later to look at when I was writing this ICES paper (Casting a wide net and making the most of the catch) – I had saved my notes. Now, I have gotten rid of most of it. I started looking at which talk I had given. I had the whole list of all the talks I had given. I had slides. And every time I have shown this pyramid in a different form, trying to tell – whether it's a community conversation, it's at NOAA headquarters, Habitat office, in schools, or anywhere, my theme was there is reason to hope. Don't focus your attention on that one percent or whatever percent – even ten percent – but say five percent or one percent of the problem, which you must take care of. Obviously, it's going to spread, but you can just take a small amount of the money – ten percent of the money that goes into endangered species or goes into degraded habitats – superfund sites is what I was trying to remember – a huge amount of money. Just ten percent of it can go to take care of all the adjacent areas. I just

did not succeed in convincing anybody— I don't remember anybody coming and talking – even students. I don't remember anybody coming and saying, "My God, that makes sense. Let us do something about it" until I retired and started this nature and health work. I was invited. I said, "Now this group is doing what NOAA tried to do in ocean and human health," but it all ended up only looking at biotoxins and only looking at chemical and microbial pollution. Not that it is not important but we needed to do more to conserve species and habitats that were healthy. It was doing the same thing focusing on crisis under different name but my ideas really didn't catch [on] to understand that what you are supposed to do is to show how beautiful nature is and why it is important to preserve it or at least conserve it. Preserve is a very difficult term. But conserve it. But now, especially after the pandemic and climate crisis everybody is trying to write about the value of conserving nature. Every other day, you see *National Geographic* or the *New York Times*. Everybody talks about it. But even now there is no funding in that program. It's still not well funded. It is funded in dribs and drabs, and for the community that really likes it, you are preaching to the choir. There are outdoor schools. But they all have no money. Anyway, that's how my transition happened without me even knowing that it started in 1970.

MG: [18:13] The other through-line I wanted to draw was the flexibility you were given to recover and because of your health, and that was something you carried on when you were a manager in terms of giving flexibility to your employees.

UV: [18:26] Right. I could not have worked in any other place— because I was an experimental scientist. I wasn't a modeler. I wasn't a hundred percent analytical person. In those days, there was no computer, so I could not type anyway. But I was an experimental scientist. I actually needed to separate chemicals. I needed to do all the work that you do in the lab. But because I could excite students, because I was involved in Seattle University, which was quite an interesting private university – it's a Jesuit University. The teachers are all big thinkers, right? Quite a lot of teachers were Jesuit priests. We had wonderful conversations. I was able to attract students, not many because we didn't have space and all that, just one or two, but I could continue doing my research by talking on the phone, my husband would give me a ride, [and] I would slowly go up and sit somewhere, but I could then show how it needs to be done. And it got done because I had amazing – I don't know where I got it, but I had a great deal of willpower. My pain threshold, I found, was very high. Then, later on, I realized it was a gift from my mother. She had so many conditions, like diabetes and this and that. Nobody in our family had rheumatoid arthritis. They were all thinking it was because I went to a cold country or something like that. Luckily, I had a very high pain threshold. I have great resistance to taking mind-numbing medicine. I did not take things that put me to sleep. That is my contribution, but I could not have done it if that particular lab where the head of that lab, Mr. Stansby, who just was an absolutely wonderful scientist, and a very quiet man – Morris (Stainsby), as I said, got a Presidential Medal of Freedom or whatever, or a big award. He was very laid back. He loved detective stories. His whole library was full of it. He supported me. My boss, who was kind of

a strange man in terms of – he didn't get along with most NOAA people. Before and after NOAA, he just always fought with his bosses. Eventually, he left, but he was really bright, and he was unconventional. He could see that interesting science was being done. He was very interested in getting all the credit himself. He was very much – whatever I did, if he could publish it – after the first paper, I told him, "I got to write." So, he let me be the first author. But the first author is understood to be a young person, and the last author – he got all the publicity. In the beginning, it was due to him because I was just starting, and he gave me that chance. This person was a mixture of good and not-so-good and helped me in strange ways and not. I learned that giving people a helping hand during the time they can't do anything gives you back tenfold. Because once I got reasonably well – I mean, my illness lasted for a long time, but I started to get serious medication – I was publishing. I became totally committed to this place, which gave me such a break. I don't think I could have – see, if I was teaching, I would have to leave it. Now, maybe people can do it remotely but not in 1970's.. By the time I became EC division manager, I did not have that much flexibility to let people do – because the center director established those policies much more than a division director. I couldn't really do – and there is always ten percent of people [who] take advantage of any system. If one of them takes advantage, it becomes a big problem. I was still a young manager who was learning. I should say I did not do as well on giving people flexi-time, or flexi-place during the first seven years of my being a manager because I myself was on a very uncertain footing, what I call – first two years of Environmental Conservation Division, or a year and a half, it was part of Northwest and Alaska Fisheries Science Center. The rules were all established by the center director, who was actually in Sand Point. So, management was – I'm still learning, and perhaps was not as great a boss as I think I became later. Do you know what I'm saying? Because now people tell me, "I wish you'd come back," and all that. First seven years, I don't think – but then, after the third year, in 1988, the center split. You have to look up the history of when the Northwest – Northwest Fisheries Science Center was established in 1988, and the new center director came, Richard Berry. He was from Southeast Center. He was the deputy [of the] Southeast Center. I will not name the director, but that director did not like him very much because Dick Berry was a very quiet man, somewhat apolitical, and honest. Those are not all the things – they are difficult things. You can't be quiet, apolitical, and honest because – you got to have one of the tricks in your hand. You either have to be very communicative or political or not so honest. Do you see what I'm saying? Something that will – those are political positions. They wanted him out, so they put him on becoming the center director of the Northwest Fisheries Science Center because there was a feeling that the centers – not feeling – there was a reason that the centers were split only because of political reasons. Something happened at the NOAA level or [with the] Alaska senators. I don't know where it was. But the man who was – I think Bill Evans, perhaps, was the NMFS [National Marine Fisheries Service] director at that time or administer – whatever you call it. He was the NMFS administrator or NMFS assistant administrator, and he wanted to be the head of NOAA. In order for him to be the head of NOAA, he needed several senators – this is my version of it. You better check. But this is what the rank-and-file talked about. So Bill

Evans did not like something the Northwest and Alaska center director was doing or something they didn't like in Alaska. Alaska wanted its own center, and it wanted them to pay all the attention to – actually, they were paying more attention to Alaska. Actually, the Northwest people should really have – at that time, Rollie Schmitt was the regional administrator. I think he also wanted Northwest. He was a Northwest regional administrator, but it was Northwest and Alaska Center that was giving him science. He felt whatever he needed, he got it last. There was no money for him. How lucky was I? When I became the division director, I was a small potato, a really tiny little potato in the seven divisions. The divisions were all Alaska divisions. Big amount of money. And there were these three tiny divisions. One is the Environmental Conservation Division. The other one is called Coastal Zone and Estuary Division, [which] was all salmon, but mostly salmon, like in hydropower, nothing coming down to the estuaries. That was the program largely funded by the Bonneville Power Administration. The third division was seafood safety, more like seafood value. I'm trying to remember its name. It was more like productivity, seafood products, and developing artificial seafood from all the parts of fish, and all that kind of – fish utilization. It was called fish utilization. All three of those divisions were of no interest to the Alaska center director. So, we just survived based on our community. See, this is why you need to be very communicative about how important your science is to the people who need to use it. In my case, it was People For Puget Sound, the WA governor's office, and things like that. Anyway, because this strange thing was happening at the NMFS/NOAA level, they split the centers, and suddenly, two of my colleagues, and I went to the Northwest Fisheries Science Center. We are now big potatoes because we are only three; this center director has only three divisions because what they did was – because they did not really want to split it, most people in Northwest and Alaska – very few people wanted it split. Most people didn't. Because having us in that big center was useful to Dr. Aaron. He could always cut us – whatever little budget we had, we were always fine because he would never take any – he told me, "I am never going to take money out of my divisions that are doing surveys or stock assessment or marine mammal things. You guys are doing something that's really not – you may be very smart, and you may be the smartest people on Earth, but we don't need you. I can't get rid of you, so I'll just take your money." He said, "Usha, you got to be real about it. Nothing personal. This is how it is." So, suddenly, we had this new director in 1988, a new center director, Dick Berry, who came to Seattle totally against his wish. He really didn't want to leave Miami. I mean, that was his place. His wife has so many allergies in the Seattle area. It's an unhappy situation. But he's a very nice guy. I tell you, for me, as a young division director, I needed somebody like him just as I had needed Mr. Stansby, who was quiet, who was honest, but he was an amazing scientist, so nobody could touch him. Dick Berry was a manager. That's a very different story. But he stood up – like Mr. Stansby, in his strange way, without much saying, he protected me, the same way Dick Berry said to all three division directors – this is now '88 – "You go and get your money any way that you think you can. I will not stand in your way. I am not the one who will go and plead your case. I will try my best." I mean, he was very honest. He said, "I'll try my best whenever there is a meeting of all center directors, and you have to present why your

center's work is good." But his heart is not in it. He's not a great orator. He would say, "You just build your program." That gave me a very good chance because I could do everything, like talking, for sure, and also passionately making the case and making connections. I was very good at making connections. I was very good at showing people why our work was important. I created – and similarly, my other two colleagues did in their field. It was very clear that Dr. Berry was going to be there only for three years because he was now promoted. He was promoted because he was not liked. He was promoted because he wasn't going to leave that position of deputy director, and that director did not want him, and the community perhaps didn't want him. He was going to stay for three years to get the top salary or whatever. The word was out that in three years, either the center would go back with the Alaska Center, which ninety percent of people hoped [would] happen, including fishermen and all. Very few Northwest Fisheries people wanted Northwest Fisheries Science Center because they had the regional office. They really didn't care where the science was coming from. We didn't have many stakeholders. In those three years, credit to Dr. Barry that he gave us full autonomy, which allowed us to get bigger and stronger and everything we needed. Do you [have] any more questions there in those three years?

MG: [35:03] Who were your two other colleagues you were talking about, the two other heads of divisions?

UV: [35:07] Right. The other one was for the Coastal Zone and Estuary System, CZES. At that time, the director of that was – I'm trying to remember. I have to find his name. I forget. . . When I was the EC division director, it was John Spinelli. John Spinelli was the director of the Utilization Research Division. He was another one who loved gardening [and] absolutely did not like to talk to people. He was very brusque, but he was a good guy. I will have to go back in my thing to remember who the CZES [director] was. The CZES person totally had – eighty percent of his budget came from Bonneville Power Administration, and all his tasks were funded by – so, he was practically not funded. His division was practically not funded by NMFS, and therefore, it has plus and minus. When NMFS's budget went down, they were doing just fine, but if their budget went down, NMFS didn't help them. So, there were these three divisions. I was lucky when I became the division director. Soon after, I met Nancy Foster because Nancy Foster – I think I told you about – was the head of Habitat and Protected Species. She took a liking to me. She was a people person. She took me in her wings to tell me how to manage National Marine Fisheries Services-level people.

MG: [37:13] Can you say more about Nancy's role at the time? What opportunities did you have to work together?

UV: [37:19] She was the office director of what they call protected species. At that time, it was called Protected Species or something. The habitat office was not created, but all the habitat

work was under protected species because those are the ones that really are having problems with habitat; their habitat was getting destroyed or damaged. That's why they became a protected species because their numbers were going down. At that time, Mike Tillman was the NMFS deputy director. I don't know who the director was. I think in a year or so, Rollie went there, but before that, I forget who the NMFS director was. I remember Mike very well. Mike Tillman and Nancy Foster got along very well because Nancy Foster was a marine mammal biologist. Of course, Mike Tillman is a very well-known marine mammal everything. They got along well. Nancy, at that time, had the habitat program, and the habitat program people were very, what I call, passionate, and even at the risk of losing their job, they would support the habitat program. I am trying to remember the people who were in charge. This guy worked for Nancy. His name was Jim Chambers. He was so passionately devoted to the habitat program, which was not considered important by NMFS hierarchy. He was so helpful to me and the Environmental Conservation Division. He fought a valiant war to not allow the Environmental Conservation Division to be sold off during the A-76 process. He had a young colleague, Maggie. Those two were in the habitat portion of the protected species. They invited all the people from all the centers who worked on the habitat part of it. So, pollution came into the habitat quality part, so I was invited. This meeting was in Portland. When I went there, that was my first meeting as division director. I go there. At the last minute, I was invited. I go to Portland, the hotel in which they all were staying, where the meeting was, [and] all the rooms are gone. It looked like I may have to stay far away. I was at the reception desk trying to figure out what to do. Because with my health – and generally, I didn't drive in any strange places. Nancy Foster was just coming out of a meeting or from her room and saw me. She smiled at me. Then she said, "Can I help?" Because the whole motel or hotel was taken by a lot of us. She perhaps had seen my picture. Is that correct? I am now getting mixed up. I'm getting mixed up. I met Nancy Foster before I became EC division director because it is she who asked me to be division [director]. So this is maybe 1986 or something like that, just one year before the director thing. I was a scientist actually in pollution, and I was there. I think Gloria Thompson was with her at that time. She had come with her to arrange the meeting. She told Gloria Thompson that if I didn't find any room, I could stay in her room, which was like, wow, right? Because Nancy said, "I don't want her to be alone." She could see I was not – somehow looked [like I was] needing help. But then they found me a [room]. But we got to meet each other, and we became the best of friends. She was very good at connecting with people higher up, lower down, or whatever. She knew Bill Evans very well. She actually invited Bill Evans to hear about what was – and introduced me to Bill Evans. Okay, so this is where I am, right? I am still a scientist in the ECD division. Then this man, my boss, was making trouble for NOAA, and especially for Northwest and Alaska Fisheries Center and Bill Aaron. They are fighting like you wouldn't believe it. In the long run, who's gonna lose, right? He just left, and a university hired him, and he did okay. That's how a position came open. That is when Nancy Foster knew Rollie had just arrived in Silver Spring or DC – I think it was DC still. I got a message through Jim, who was the habitat person, that Nancy wants to talk to me – whether I can go there or on the phone, but I should call



on the phone from home. It's a very private conversation. I called her, and then she said I needed to apply for this position. It had never occurred to me to apply for that position. I was doing very well as a scientist. I also had the smallest group in the EC division. It was called environmental biochemistry or something like that. I forget. I was just recently made the team lead. I was not allowed to even be a team lead, but I was giving talks for this, and then one of my other colleagues – his name was Hal Hodgins – who was a physiology team lead, said to this man, Don Malins, who was the boss, "Hey, you are making her give all the talks and do all things, but you are not giving her a position as a team lead," because Don wanted to be in charge of that particular arm of the EC division. "You can't do that," he said. I had, again, somebody supporting me because I didn't even know that I should ask for it. At that time, I did not know. Later, I learned that one has to ask for it. Then, I became a team leader. Then I got a call. I'm a scientist. I'm in biochemistry. National Marine Fisheries doesn't do biochemistry, that kind of thing. But she said no, I have to apply because if you don't apply, how would you know? Once I decided I was going to apply, I applied full blast. At that time, Bill Aaron did not have a good situation with headquarters, so I think he was looking to get somebody who was not a traditional person to show that he was very – I mean, a set of circumstances got me in that position. Lots of breaks. But I'm always there. [laughter]

MG: [45:38] I also want to ask you a little bit more about Don Malins. Remind me when you first started working under him. Why do I think it was when you were working on your Ph.D.?

UV: [45:47] No, not when I was working on my Ph.D. It was for the post doctoral position he interviewed me for the porpoise work. It was in March 1969 that I first met him. Since I was not a US citizen, and since the Bureau of Commercial Fisheries couldn't hire me anyway, he made a deal with Seattle University because he got his bachelor's degree from Seattle University. I think he always supported it or had connections with the chemistry department. So he told the chemistry department that he'd get money – [Kenneth] Norris will send money for the program to Seattle University, and I will be employed. So, in the first couple of years, I was employed directly by Norris in Hawaii. And then, when Norris went out of business, the money was still going to come. But it seems they didn't want to give money to the Bureau of Commercial Fisheries because one agency to agency or something – I don't know. The Office of Naval Research gave money to a Seattle University professor – that was me – to do the research, and Don was my boss because he was also a faculty member. I met him in March 1969.

MG: [47:18] How well did you get to know Don? He has a pretty unique background.

UV: [47:25] He was a very interesting character and very bright. I mean, nobody can take that away from him. He was born in Peru. He's British. His parents are from Britain. Then, they went back to Britain. Then, his father had a job in Kenya. That's where he actually grew up in Kenya, I think. Then he came back. I think his parents moved to the US sometime. I don't

remember how old he was. He got this job with the Bureau of Commercial Fisheries. At that time, he only had a master's or bachelors. I'm not sure. The Bureau of Commercial Fisheries, especially Mr. Stansby very much wanted all his scientists to have a Ph.D. Three of his scientists that I remember – Ed Gruger, who had a master's from my professor; Ted Rubal), who was a chemist there; and Don Malins. All of them were given an opportunity by the Bureau of Commercial Fisheries to go do a Ph.D. Ed Gruger did something. I forget whether he didn't go for a Ph.D. I don't know. But Don went back to Scotland, Aberdeen, Scotland, to the University of Aberdeen. He got a DSc [Doctor of Science]. He kept a job and worked half-time and all those things. Ted got from, I think, somewhere, his Ph.D. Anyway, by the time I go there, I think he already had a Ph.D. He met his wife, who was working – actually, was a secretary of [Lee] Alverson. Until Alverson was there – Lee Alverson was the center director of Alaska and Northwest Fisheries – Don was in a very good situation because he was married to Mary, and he got along with Lee Alverson, who was also somewhat not traditional. He broke all the rules all the time when it suited him. So, Don broke all the rules all the time. What happened was he was very charming. He was very smart. He was very political. He knew how to keep people at each other's throats. He would create all kinds of tension between different scientists, so nobody trusted anybody but Don. Don't write all this, but what I'm saying [is] he was a very smart man, but somebody that I would not follow in my leadership style. Some leadership qualities were there, which made him a big leader but didn't make him a good leader. He took people's work. There are two things he did. He had an intuition, and quite often, it was correct. But, you see, scientists can't only work on intuition. What he used to do is, if the data came this close and if he had the intuition, he'll connect that. That was very difficult for several of us who were working under him. But he felt the time was right, and you can't worry about connecting it all the way. If the dots are there and most of them fit, he would draw a curve and ignore the outliers. Quite often, it turned out to be right. But that is still not the right way of doing science. But he was loved by environmentalists because they won't take data now – they want a conclusion now, and they don't want scientists to mess around for another three years when the crisis will be too big. You see, it's very difficult to know what's right. I knew what was right for me, but he thought he was right. Quite often, he was right because he became the darling of the environmentalists. He became the darling of the newspapers. I mean, there were stories. He was a very good storyteller. He could tell stories, and he loved being in the limelight. This upset the higher-ups in Fisheries and Bill Aaron because, first of all, it's taking all the other priorities away from – the newspapers are not publishing what's happening to fish in Alaska. They're publishing what's happening to Puget Sound, etcetera. He gave talks. We had NOVA, the big program. NOVA made a program called "Swimming in Sewer," and we were all featured in it. He brought those things. There were several things to learn from him: what to do and what not to do.

MG: [53:03] Was it under Don that you were looking at the toxins in fish?

UV: [53:09] Yeah. It was very interesting. I worked very closely with Don on the porpoise and echolocation things. But when it came – in 1975, when it came to work on toxins and all, I told him, "I need to do this work by myself." He is now becoming – he became a division director. Alverson made him the division director of the new group called EnvironmentConservation Division.. Pioneer Research Lab was dissolved. The division was made, which was called the Environmental Conservation Division. In 1975, when we became – I mean, we had become part of NOAA in 1970, but 1975 or 1973, Lee Alverson reorganized Northwest and Alaska Center, creating this Environmental Conservation Division because of the Alaska pipeline coming and giving lots of money. At that time, they gave me a half-time job, and I told Don that it was just not fair. I need to have a full-time job now. I was thirty-five, I think, then or whatever. I had worked for seven years as a part-timer. I needed a full-time position, and he convinced Lee Alverson, who also knew about me [and] my work. That time, I also got permission or an agreement with Don that I would publish my paper on all of the pollution work by myself. He was not a co-author on any of my papers after the porpoise work was done. He published quite a lot of papers on the two other – there were three team leaders. The team leader, Hal Hodgins, who was a physiologist, could not put his name on that, and he could not put his name on my papers. But he put his name on all the analytical chemistry papers because he established a marine sediment lab analysis, which was the first of its kind. He was the PI [principal investigator] for NOAA's National Status and Trends program for ten years, which started in 1984. I had publications with him when it was a big division-level thing. But all my scientific papers were mine, or my book was my own, and things like that. I struck two bargains with him in 1975. One that I get a full-time position. I wasn't going to take a half-time position. Second, this is now my work. That's why there were good things and bad things about him. I wouldn't call him that he was out and out a terrible person; if you let him, he would take everything that you had. I got a very good break working with him because my work got publicized, especially the porpoise work. I should give you one thing. One time, I was a senior author [on] a paper in 1975. It was my last big paper on the porpoise thing. Don gave [an] interview to the press and never gave my name. This big headline comes, [talking] all about our work, but I'm the senior author. [It] talks all about Don Malins, and I'm identified as a coworker. I said, "I am going to take him ... this one is not acceptable." This was my first rebellion – public rebellion. I told him, "I am going to go to the newspapers. But I'm also going to go to Alverson and tell him that this was a breach of professional conduct." He didn't want that out. He was, at the time, having lots of fights with Bill Aaron anyway. This was 19-whatever, just before he was leaving, a couple of years before he was [inaudible]. It became a big deal. But he is very clever. What he did – instead of my going to the woman who – he was very charming, so the women reporters were just totally – I mean, they would ignore me. Even if he had given my name, they would have ignored me because he was really a very interesting-looking person and also very charming. She said, "I will take care of it." He goes back to the reporter and perhaps tells [them] that this is going to blow up. So, there is a small – third page – this one was the front page in *Seattle Times* – third page [was] my picture and a little write-up saying, "equal partners." I'm really more than

equal partners, and then wrote about how I was the – he wrote a note to the paper saying, “I want to correct.” The thing is, it became like, “Wow, what an egalitarian man this is who corrected the reporter by telling her that I was the senior author.” You see? Very clever. But see, he was very strange. He comes to me and says, “Well, I solved the problem, and I come out smelling like roses,” instead of saying, “I’m so sorry I did that.” He never once said, “I was sorry.” He just said, “What is bothering you? Oh, that bothers you? I’ll fix it.” But there is something to learn from this, right? He also told me once or twice, when somebody was doing quite a lot and coming – “Oh, don’t worry,” he said, “I’m going to give him enough rope to hang himself.” He said those things without ever feeling that that was really bad to say. When he finally had to leave – we never exactly fought, except for this one. After that, he knew not to touch me. That’s because I’m a woman, I’m a scientist of real good credentials, I have big – I have not as big a community as he had, but if I stand up and cry foul, that’s going to be not good for him. He left me alone. Of course, he also left me without a lot of money that he was giving to other programs. But if you stand up, you have to earn your keep. When he was leaving, he decided, finally, it was getting really bad for him. When he’s leaving, he draws this graph for me. He thought I would apply. He said to me, “You know what’s going to happen when I leave,” and then he showed the graph, how he built up, “It will all crumble down,” which gave me the idea that there are different kinds of leaders. When I left, I wanted to have this division so strong. So many people wanted to be division directors. When he left, he wanted the division to crumble totally and disappear. So, when he left, I became the division director. Then what happens [is] Bill Evans is the head of NOAA, Bill Aaron is the head of Northwest and Alaska Fisheries Science Center, and we are troublemakers because we are talking about pollution, habitat degradation, and things that neither Northwest and Alaska Fisheries Science Center nor NOAA Fisheries [or] anybody wants to pay any attention to this. One idea is – at that time, there was something called A-76, which is a – I don’t know who was – you will have to look [this] up. This is a very important period in fisheries. A-76 is a cutting of all non-essential jobs or work from the federal government and giving it all to private companies. There is that big contracting company that contracts for the government, and I’m trying to remember its name. Maybe Diners Club. He had a Diners Club – he was the CEO [Chief Executive Officer] of Diners Club, and there is this – I have to think about it – big government contracting company. This contracting company – several of them for the Weather Service, for National Marine Fisheries Service – wanted a big chunk of federal work. I think this could have been around the time [of the] Clinton Administration when the flattening of the government was a big deal; that was one of Al Gore’s dubious gifts to all the agencies. In that A-76, I think it was before them or after. Just use the word “A-76” and “NMFS” history. They decided they wanted to take the entire division, our division, and privatize it. Privatization was a big word. They wanted to end – the thing is they were actually – NOS [National Ocean Service] – [Charles] “Bud” Ehler was in charge of all these programs [and] was given this particular responsibility to help streamline things. I think [Anthony] Calio was NOAA – or just before Calio, somewhere around then. They actually were going to give our entire division to Don Malins. It never came to – because Don Malins, at that

time, was with the University of Washington and had some kind of small company. I was shocked because the lucky part was I had friends. They could not do something totally like this without me getting wind of it. I don't know whether Nancy knew it and thought it was something politically good for her. I can't tell. Anyway, I had my entire community become aware of it, and it never went anywhere. But it did happen. You see, I learned from Don, and I played that card against him when it came. Can you imagine this whole division that was already battered, and everything was taken from them, all the good science to do his own thing to be sold away to them? I think I met at that time, through some backdoor, with Patty Murray,. I don't know who the senators were or something, but I had friends, and they did not want this to happen to me or my center. We survived. Then, the oil spill came. We survived. I don't know if that's where you wanted to go today, but you got all kinds of interesting things.

MG: [1:07:03] Let me ask a couple of follow-up questions. And then maybe we can pick up with the oil spill next time.

UV: [1:07:08] Yeah, sure.

MG: [1:07:10] What changed when the Bureau of Commercial Fisheries became NOAA, structurally or in terms of mission?

UV: [1:07:18] I would say I'm not the most knowledgeable about that because I was so far down. I was just starting in '75, so I can't tell you. I think Jim Balsiger, perhaps, knows more. Even Jim Balsiger may not have been there. The only thing I remember – only I don't remember any headquarters-ish stuff because I was very far removed at that time in '75 when I did not know – I don't even know if Nancy Foster was even part of the organization. But in '75, the thing I remember Lee Alverson telling us in one of the all-hands meetings [was] we are just changing letterheads. We are the Bureau of Commercial Fisheries, and what we were doing in commercial fisheries, we will now be doing under NOAA. The whole National Marine Fisheries Service is actually the Bureau of Commercial Fisheries under new letterhead. It is only after it went into NOAA and after a certain period [that the] science became much more powerful. The reason why NOAA created – which everybody thinks because fisheries and other things were not doing good science, or it was – I think it was only created because Richard Nixon did not like whoever person [was] head of the Bureau of Commercial Fisheries, and he just did not like and created that. That's what I'm told. I did not know anything. So, Alverson did not actually create different divisions or anything in 1970. It all happened in 1975 when the Alaska pipeline funding was starting to come. That is when he decided the time had come to reorganize, and he kind of did not like Mr. Stansby too much because Mr. Stansby was not evocative or communicative, and he believed in science. He would not give an inch to any administrators just because if they want to bend science [inaudible], there's no way. He was a quiet man of amazing strength, which nobody realized because he was quiet. He wanted him out, and he wanted Don

in that position because he knew Don would do his bidding. But more than that, Don was like him. Don Malins was very much like Lee Alverson. He would do and expand, and he did. He expanded the thing. I don't remember the philosophy, politics, or science or something of NOAA until I became part of management, which was still – [in] 1987, I was happily doing science. I think, the last couple of years before I became division director, I perhaps knew more about – I knew more about National Marine Fisheries Service, but not as much about NOAA.

MG: [1:11:13] You were also working with students during this time in the '70s. Can you tell me a little bit about your reflections on teaching and the students you had? I was curious if any of your former students joined you in the field.

UV: [1:11:26] I did not teach regular classroom teaching. I mostly gave seminars in somebody's – like a guest person. I tried to teach – once, I was told in 1980 by my friend Alvin Kwiram, who was now the chair of the chemistry department, to teach a chemical carcinogenesis class because they needed some credit [inaudible] classes, and he thought that would be good for me. And I also thought that it would be good. But I found out something about myself. I found I don't like routine teaching. I find – as you have by now known – I go off track very fast. My mind runs in several tracks at the same time. Suddenly, I find something interesting, and I'm on the other track. It's not good for students who are – and then, the second thing I found [was] that the students were not that interested, actually, in a new topic; they were only interested because it was a credit/no credit class. They could just sit there. I am also a person with an accent. At that time, even much more. I'm trying to teach chemical carcinogenesis. And they've not heard the word carcinogenesis. I mean, there are a lot of mismatches. Suddenly, after one week or so, the chemistry department came and told me, "We have to make this a graded class because we don't have enough graded classes." The minute I said that I lost fifty percent of the students because they were just coming there to sleep and get credit. Graduate students are the least curious about anything but their own field. Just no interest. In the end, I only ended up with the fifth-year undergraduate students – brilliant kids – and I somehow finished teaching. But I found [out] about me [that] I don't like it. Therefore, I am not a good teacher. I'm not a good classroom teacher. I am a good teacher when the students are motivated. I'm not a good teacher if I have a classroom full of students who say, "What are you talking about?" Then I just decided I am giving talks; I have spoken in community colleges, at the University of Washington, many in fisheries, and in the chemistry department, and at the School of Public Health. Then, for five years, I taught in law school, but that was only after I retired. But it was again not giving – it was a seminar or class because I had Professor William Rodgers as my partner, and we taught it. I did teach, but that was after I retired. I taught a seminar class where the law students were truly motivated to learn about all different law cases because they were seniors; they were about to graduate. Bill Rogers, Professor William Rogers, who just passed away just a few days ago, was my friend, colleague, and mentor in some way. He would say I was his mentor in science. He was my mentor in law and Indian law, especially. I taught for four years then – regular

classroom – and then, [after] four years, we both felt like we were not having fun, so we canceled it.

MG: [1:15:48] Well, do you want to take a pause for today?

UV: [1:15:51] Your call. I don't think I have anything. If you want to talk some more, I am yours. We can take a five-minute pause. I can go get myself a cup of coffee. You can also.

MG: [1:16:03] That's a great idea.

UV: [1:16:05] So that you can make some more progress because I'm always derailing you. [laughter]

MG: [1:16:10] This has been a real pleasure for me. I don't want to tie you up too much. But if you'd like to take a five-minute break, we can continue.

UV: [1:16:17] Yeah, we can continue. [Recording paused.]

MG: [1:16:22] I have a few follow-up questions about when you transitioned into the director position of the EC division. There was someone you mentioned in your essay, Carolyn Riley-Payne. Can you tell me about her?

UV: [1:16:36] When I became – I don't remember [if] it was just before or just after. I think maybe before. Before I applied for the EC division, I ran into her because, I think, either she was detailed to Nancy Foster or something. Nancy had a knack [for] finding people – not just women – that were unusual in – she knew their potential somehow. She knew they were different. She had asked Carolyn – she was a personnel officer or something in the human resource division, whatever they used to call it, at Sand Point. I met her at one of those meetings where we were learning new terminology and rights – one of the classes or something. We were the only two women of color in that group because all the other women were white. There was a lot of belligerence. When [people] see they're being sidelined, people get upset. During that meeting, the women were very upset, many of them, because they were sidelined, passed over, or whatever. They were not seeing us at all, like Carolyn and me; we had the added burden of being even more different. We started to talk. She started to tell me how people look at the application and things like that. When I was going to apply for the EC division, I talked to her, and she said, "Yeah, you do it. I will tell you what you can do as a manager." Because I said, "I have no idea, and I'll get into trouble being a scientist and doing things just like a scientist because now, as a manager and a boss, you can't use certain words, you can't do..." She was the person who really helped me. She stayed with me until the end. I think she retired soon after I

did or maybe a few years after I did. We still keep in touch. But during this COVID period, we haven't seen each other.

MG: [1:19:26] What kind of advice did she give you?

UV: [1:19:30] She told me I couldn't just pick people that I – when I was hiring, promoting, or putting in positions, redoing my division, she said I cannot just – I thought, “Oh, I just tell this guy will be this, this guy will be that,” and things like that. These are just the rudiments of being a manager. Because she knew different people in different parts of things, she herself also had difficulty a couple of times when she had bosses that just did not like her style. They kept moving her. We'd give each other a boost by going out to lunch and saying, "We just can't quit. Because if a few of us quit, there will be no color in NOAA." It was not just women; also, we needed to have different types of people. Generally, I would ask her, especially if I had difficult staff, how to deal because that was the hardest part of being a manager, I found, being in the federal system. Rewarding or appreciating good people is such a wonderful, easy task. But trying to discipline or trying to get better out of it or trying to not have that person take more of people's time is the hardest thing because once they have tenure, they have tenure, and you just cannot do anything. I had a couple of times such issues where she helped me a lot by establishing a human resource team so that I am not directly dealing with an employee or how to do things. She helped me with that. Over the years, now and then, I just put her in charge of something we are doing. As a center director, I wanted to reorganize lots of things, and there was an amazing amount of angst, partly because I wanted to do things faster than I perhaps needed to. I shouldn't say "needed to." I needed to, but I couldn't. I shouldn't have. I had a lot of pushback from staff because they just assumed I came from inside the center. They knew me. How could I do anything that's not good for them? But I tried to explain [that] I got to do good for the center. It was very difficult. I will tell you that when we come to it. But it was a very difficult period in my career because these are the people I like. These are my staff, and they didn't like what I was trying to do, which actually eventually turned out to be very good. But the way I did it was a little too fast. Carolyn was one person who helped me a lot because there was a lot of talk that goes – she would tell me, "Usha, something is not right in your center. You better pay attention." Because nobody comes and tells you; they just talk. In all of that, she was my confidante, advisor, and friend, all rolled into one.

MG: [1:23:14] It's great to have that kind of feedback, especially as you're starting in these new positions.

UV: [1:23:18] Totally. She would say, "You can't do this," or "you know there are three of your staff looking for jobs elsewhere because they are unhappy." She would not give me names or divulge any private information, but she would tell me, "Something isn't right. You better look what ...". I brought in one strategic planner, who was highly recommended by some consultants



that I really admire. But they did not realize there was another side to that person. That person just really practically destroyed the center because her style was different. It was more like a corporate merger kind of style. I didn't realize because I thought she was doing – because what she presented to me looked very reasonable. It became a big, big issue.

MG: [1:24:13] When you first came in as the ECD director, what were your initial priorities, or what other challenges did you encounter?

UV: [1:24:20] Well, the biggest challenge was budget because we had hardly any – almost fifty percent of people that were temporary; now they're called contractors, but then they were just temporary appointments. We had only money from the EPA [Environmental Protection Agency]. When we started, we perhaps had a thirty percent/forty percent or less NMFS-based budget. The rest of it was just struggling to get a budget. That was one big challenge when I first started. Second, people just didn't believe I could do it. Even people who liked me didn't believe I could do it. They just felt like I had so many things running against me. I was a scientist. My head, perhaps, must be in the clouds, they just assumed. I was demanding – because I was – on myself and everybody else. And I was inexperienced, which is also true. I had a very difficult time convincing people that I could hack it. There were three other people who had applied. They clearly made very sure – one was really very, I would say. He just said, "Okay, well, if this is what it is, let's see what we can do to help you." He perhaps gossiped a little bit behind my back, but not much. But I found out something, and I have found that to be so true; men gossip so much more, and it's so much more vicious than they do. I mean, they cast doubt in your character, there are innuendos, and they don't even think there's anything wrong. If people don't look like them, they must be two-faced, or there must be – I mean, people [to] my face will tell me about a colleague who is from other parts of Asia; she tells me, "This man is telling me ... I can never understand this guy. You know where he comes from, right? In that country, they are all two faced." And I'm just like WHAT ... "And he just continued talking to me about other things." What I'm saying is this stereotyping, destroying people by just one word or one sentence, was sort of – nobody noticed. Until enough different people are there, we don't know what we are saying, and I'm very sure people in India do the same thing because they are in the majority there. Do you know what I'm saying? I don't think people of color have any higher moral grounds for anything; it's just that because they're in the minority, they are able to see the injustice, but when they are in the majority, they perhaps do exactly the same. Anyway, those were all those issues – how to talk to men, how to also learn to be on my guard, which I had never learned, really. I just talk. I realized that, as a manager, you couldn't do that because you are affecting people's salaries, you are affecting their promotions, and even if you are not affecting them, they think you are affecting them. It's different.

MG: [1:28:14] Were you finding ways to communicate the needs to leadership and your mission for the conservation division?

UV: [1:28:22] Yes. The first year, the first year and a half, when I was in the larger center, it was more difficult to talk to people at the Fisheries level or talk about our mission. We had to go through the chain of command. There are some directors or supervisors who are much more concerned about the chain of command. And there are also times when, even as a manager, I was concerned about the chain of command because if two different views are going to a senator, you are in trouble. It is a balancing act of what you can say and what you can't, what you should tell your boss so that he – most of the time it was "he" for me – was in the know, and what you should not because they would unnecessarily stifle you and then your divisions suffer. Learning all those things was very challenging, and trying to find funding, especially when there is a budget reduction going on. So when I had a center director who was more Alaska-oriented, I had a harder time because Rollie, as a regional administrator, was not able to put money in the EC division until there was an oil spill. And even then, he kept telling me that money is only temporary. One of the biggest difficulties in becoming director of the EC division [was] that suddenly a lot of money comes in if there is a crisis because everybody wants answers all the way to the head of commerce. They put a lot of money and say, "Just do it." But the thing is, there is no understanding of how long it takes to get qualified people to work on something, and you can't keep pulling them off their research and shoving them into others without – and you don't want them to not learn everything before so that they make mistakes. Then, the money suddenly goes away. This money comes from emergency funds, which is very hard to – [Telephone rings. Recording paused.] This uncertainty of budget, having to expand and contract practically without planning, people being treated like machines because – oh, there is a crisis; everybody [is] going to go for four months on a ship, sampling and all. They may end up getting one – I was very strong about giving awards to people, monetary and recognition. Some people say, "Oh, it's their job." No, it's not their job. But the thing is, they feel, "Oh, people are all the way to NOAA – we are presenting, right?" John Knauss, for example. But when the thing is over, nobody helps us to survive. And you see their position. When I became center director, I could see that you can't keep expanding because if there is no money to sustain people, what are you going to do? It's a problem on both sides, but it is better to develop a plan at the NOAA level or at the Fisheries level, and they have developed very good plans for stock assessment [and] advancement of stock assessment. But Fisheries has never taken the environmental issues at heart. To see that that is really a critical part of their mission. It should be because if you are really doing ecosystem research and ecosystem management, this is a huge part of the ecosystem that you are just ignoring and looking somewhere else, and no other agencies can do it. Anyway, that was my big problem as a manager from day one until I retired.

MG: [1:33:30] I think that tension still exists today.

UV: [1:33:33] Continuously. There is no big-scale planning. Because every four years, the administration can change, and therefore, we have political appointees. For a long time,

Northwest Fisheries' regional administrator position was political and was very difficult to work with. If you are in the right position, like you are doing things that the political person wants, then you get a lot of money. If you're not, you cannot argue with that person. It's difficult to have a head of agency politically appointed because then – you have all gone through it. I don't know how long you have been a NOAA contractor, but it's [been] a terrible last many years. I'm so glad that I retired long before that. NOAA is a wonderful agency in terms of paying heed to science. Actually, science sometimes runs the agency. Scientists have been in charge as NOAA administrators. It's understood that this is almost like NASA, not as unpolitical as NASA, but NASA has become political lately, too. I don't think I would have survived in some other federal agency because science is not as strongly viewed as it is viewed in NOAA. Even then, it was not sufficiently highly viewed. You see?

MG: [1:35:36] You wrote about how you continued your scholarship and continued to publish. Did that give you opportunities to collaborate with your colleagues? What were you publishing about?

UV: [1:35:46] Right. We are still talking about being the EC division director. Being EC division director, there was a lot of science being done, in which I was one of the partners. I guided students. I still had some students working. My team, the biochemistry team, now had a new lead, John Stein, who became then later on – who came as a center director after I retired. He became a deputy and all that. He and I published some things together. I obviously didn't go in the lab or didn't go on the field sampling, but I looked at data, I worked on the design of the experiment, I looked at the data, and then quite often, I did a lot of writing of the paper. Again, this may not be the right thing to say in the recording, but there are two kinds of scientists, especially in the field [of] experimental scientists. Some love to do experiments and good experiments. But when it comes to writing a scholarly paper – very difficult. Some people just freeze. Some people draw conclusions where none should be or don't know how to write. I mean, all the way from English, the language itself, to actual scholarship – very difficult. I never realized that because I never had that problem until I started having colleagues who were doing really good research and not able to finish a paper. They just do a portion of it. When it comes to discussion, it just doesn't go anywhere. So, I found out that that is a skill people should develop early on. If you want to be a scientist, you can't just do experiments; you have to be able to write the whole – you have to do everything from soup to nuts to dessert. I mean, you got to do the whole works.

MG: [1:38:18] And the other thing you talked about was the importance of making data available to the public and transparency. In what ways was that being done?

UV: [1:38:25] Before I became center director, being in the EC division, the data on pollution, whether it is estuarine pollution or whether it is after an environmental disaster – generally oil spill – affects people. It affects people's livelihood, like commercial fisheries or recreational fisheries. It affects people who are eating the food. It affects people. Vessels can't go to certain places. And Indigenous people who are subsistence fishers. You are affecting people's lives. You can't just look at data and speak like an automaton or not tell them. See, if you speak like a scientist, they don't get it because scientists always know uncertainty, this is this, or this could be that. You have to get to conclusions with as much certainty as you can. You should be able to show all your data to people. One of the things I learned most was during the Exxon Valdez oil spill, where there was a degree of mistrust. See, there is always a degree of mistrust between different stakeholders and between the agency and different stakeholders because if the agency is looked at favoring one set of stakeholders versus other – I would say NOAA Protected Species or Habitat offices are seen as more in sync with environmentalists, whereas Fisheries office – what is it called? – Sustainable Fisheries are each seen more as they are in sync with the fishing industry. We are seen as maybe if we are talking about pollution data, we may just automatically gravitate towards the plight of fish and the plight of people, which is normal. To be human is normal. But then you have to dissociate yourself from your human self and your humanistic values to look at data totally without having any filter and then analyze it and again get back your compassionate hat when you present it to different people. Because hard numbers don't mean anything to people, you have to explain. You have to explain how [dangerous] it is, how much it is not. Transparency is not a very straightforward concept. People think transparency means just giving them all the data, giving them all a conclusion, and leaving. No. Transparency is when you make sure whatever you are doing is well-founded; it is not given to one party ahead of the other party, even your own agency so that there is no feeling that maybe the agency made some changes. The whole reason why I like NOAA, especially the National Marine Fisheries Service, I must say, is because the science centers and regional offices are separate. There was a dark period when we were under the regional offices, and it was not an easy thing because they started telling you what science to do. I like to listen to what priorities we should [have], but not do it just the way they say. If you start giving your scientific conclusions, especially when this is such a difficult situation, to your regional administrator first, even if that person doesn't do anything to it, the feeling would be that you changed something that person asked you to change. I learned early on, especially during this period when it was so hot. I saw the lawyers on one side, the NOAA side, and I was told by the then general counsel, Tom-somebody – he said, "Usha, can you be an expert witness?" I said, "What do I need to do?" He said, "Expert witness can just cast a doubt. When there is uncertainty, learn to speak like ...". I said, "See, this is something not for me because I don't want to cast doubt because it helps you. I will cast doubt on data if I have a doubt. But if you ask me only to cast doubt in one direction," I said, "Tom, I am not your person. I don't think I should be an expert witness." Now I gave up a lot of visibility. I could have been in the news all the time. I would have perhaps made a bundle of money if I had left NOAA. You see what I'm saying? But I just couldn't do it. I told

him I have some scientists on my staff who might be very good at doing that and may not at all be uncomfortable doing it and do a good job. You go to them. Give me the portion of NOAA's work on Exxon Valdez, where I am able to do the science, my staff and I, and I remember to present it to everybody at the same time." And that is what Bud Ehler and whoever was the head of Exxon Valdez – I think he was the head of NOAA's [inaudible]. He's the one who gave us a million-dollar contract, which was like, "Wow, a million dollars" in those days, for five years. You wouldn't believe how happy we felt for a little while. But then, there were fourteen agencies that had an interest in that data from FDA [Food and Drug Administration], who were only dressing – because they were, at that time, not at all interested in the food side of it, all the way Alaska Fish and Wildlife Department, Alaska seafood sector – everybody. And then, of course, fourteen villages. Very difficult to establish, and I don't know how I came up [with] it, but I just said, "We are going to give everybody the data at the same time." I feel like one of the best compliments I got [was] from one of my colleagues – an outside colleague. He said, "The best sign of a good scientist is that nobody likes them. Because you are unpredictable. You are not in their pocket. You can't be in their pocket. Since you are not in their pocket, you are not liked." Because they don't know what my data would look like. I am only going to stand behind the data. Sometimes I say, "Oh, the invertebrates have so many hydrocarbons," and then everybody – environmentalists, the tribes – [who] was suing the government and Exxon [were] thrilled. On the other side, I say, "Fish don't show any because they are metabolizing and getting rid of it," and Exxon gets really happy. But nobody gets happy all the time with me. Whenever I stand up to speak, I am the most unpopular person by fifty percent of the audience. He used to say, "Usha, that is your" – what is it called? – "moniker. That is your moniker. You are not popular. You do not go for popularity. You have to learn that. But you I trust." You see? That's learning the very hard way.

MG: [1:47:15] I think that's such an important point, though, to let the science and the data guide your research instead of who you're trying to please.

UV: [1:47:24] Exactly. That helped me. That carried me through when it was salmon issues, whether it was dams or whether it was hatcheries. When I was writing this retrospective ICES paper, I asked Bob Lohn, who was the regional administrator – I think when I retired, he still was the regional administrator, or he had gone – whatever. But he was a big part of what was happening. He's become a very good friend. I also don't have anything – I'm apolitical when it comes to – there are very good regional administrators who were Republican, and they were very bad people who were Democrats, and vice versa. So, political thing [inaudible]. He was a good person, but he was a Republican, and he needed to – sometimes, he would come and say, "Usha, save me because they are pushing me to do this. But I am telling them that if Usha says it's not ready or it's not true, I will support her." Once my name goes up, then Vice Admiral [Conrad] Lautenbacher would say, "We are not going to do that because our center director/scientist – we have trust in her." He told me to write when I was writing this [inaudible]. I did not write about

how strongly I felt science should rule our standing – whatever we said. He said, "Usha, you got to write that. That is one of your strengths, and it's unique that you have never buckled down. You got to write saying that was one of the basic principles, the science." This is my job. I am not an administrator. The administrator's job is different, but mine is to support the science and then the scientists. I cannot support the scientists because some of them are so green, and some of them are pretty much brown. Anyway, early on, I learned, and it resonated with me. I did not know when I was doing science before it became a public science that that was something I should do. The first time it became public was when I actually watched Don Malins doing science for one party – because he felt that would save fish. So, does the end justify the means? For me, no. For me, the means have to be until whatever end it gets to. For him, for a bigger picture – and many of my scientists don't like me for that either because they feel I'm too strict. For him, he did perhaps more good – I don't know – to get some policies changed. He may have made more impact in terms of changes in policies or the protection of species. But, you see, I couldn't sleep if I did that. So that is how it is.

MG: [1:50:57] Well, especially in a world where science is coming under such scrutiny, and you really have to make sure you have a foundation for what you're saying.

UV: [1:51:06] Exactly. It takes only one error of judgment, and the trust is gone. Then, no matter how good you do, there is always going to be doubt. Even for the environmentalists – actually, when they really want good science, they will go to good scientists. When they want to make a case, they will go to an activist scientist. For me, activists and scientists should not be in the same sentence. That's my idea of scientists, but I had many activist scientists working in my center. As long as they didn't cross too much of the boundary, I just told them, "As a citizen, go march wherever. But as a scientist, if you do that, I won't have trust in your data." And people respected that.

MG: [1:52:09] The next thing I want to ask you about involves the *Exxon Valdez*. Maybe we should save that for our next conversation so we have a little more time.

UV: [1:52:17] Okay, sounds good.

MG: [1:52:18] This continues to be such a delight for me.

UV: [1:52:23] My husband was saying, "How many hours are you guys going to spend?" I said it would be up to Molly because it's my life's work. I don't put a time limit on it. You have to make sure I'm not taking up too much of your time.

MG: [1:52:43] No, you're doing this in a really beautiful, clear way. It's really painting the picture of a time period that I wanted to understand better. I'm so appreciative of that,

UV: [1:52:52] Very good. All right.

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Reviewed by Molly Graham 5/27/2023

Reviewed by Usha Varanasi 10/19/2023

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