Matthew Forrest: Good morning. This is an interview for the NOAA Ship *Mount Mitchell* 1992 Persian Gulf cruise oral history project. The date is April 9, 2021. The time is 10:54 AM. This is Lieutenant Matthew Forrest interviewing Lisa Symons. I am located in Woodbridge, Virginia. Lisa, where are you located?

Lisa Symons: I'm located in Key Largo, Florida.

MF: We are meeting remotely via Google Hangouts due to the COVID-19 pandemic. Lisa, thank you for meeting again. I really appreciate you taking some time out to share your story with us. We spoke previously a few months back and had to cut it short, unfortunately. But we agreed to pick it up again, and here we are. So just to recap where we left off, you had done some advance groundwork throughout the Persian Gulf area in ports where the *Mitchell* was going to be tying up, and then you had the opportunity to head out on the ship as chief scientist and you were sharing some of the stories from that. Were there any other stories or any other parts of ship life that you wanted to share before we moved on from that?

LS: I think one of the things that was really striking to me – I remember distinctly coming into port in Muscat, Oman, which was two of the port calls that we made in Oman. I had been to Oman previously and knew that for about half of the year, it's incredibly humid, and half of the year, it's a very dry country – seasonal variation. But it was interesting. As we were coming into the port, it was like we went into a wall of humidity. I often was on the bridge, but I was up above the bridge and just watching us come into port, and I could see a little bit of shimmer in the air, but wasn't really paying attention, and then suddenly was just enveloped in this wave of humidity that was really quite striking. We think of being out at sea as being in a very humid environment as a general rule, but this was a whole order of magnitude different than what we had been experiencing. It was just really kind of a very stark experience with the equivalent of an air thermocline, I guess, for lack of a better way of characterizing it. It's still one of my very vivid memories of coming into port in Oman. We had a couple of port calls, brought scientists on board as we had in other ports, offloaded them, did various diplomatic activities depending on the port call, where we would do a science briefing in some instances for government officials. Or if they were interested, we'd do a more formal welcome event and sort of a ceremony. I don't recall doing one of those in Oman. I think we did more of a formal presentation at the university and talked a little bit more about the expedition at the university. Once we were finished with all of the efforts in the Gulf, my work shifted back to being based out of the American embassy in Kuwait and continuing to tie together NOAA's scientific support for State Department and for other federal agencies represented there in Kuwait and tying up any residual issues associated with the *Mount Mitchell* trip and some of the other support that NOAA had been providing. Eventually, I left Kuwait in – I believe it was in June of 1991 and came back to the Gulf Program Office in Washington, DC, and started working on putting together the science meeting that we had committed to – NOAA had committed to along with UNEP, the Regional

Organization for Protection of Marine Environment [ROPME], the UN organization there in the Gulf, and all of the partners. One of the things that scientists had to make a commitment to when they agreed to be one of the participants on a leg was to come back and give a presentation on their work a year later. I believe I mentioned previously that we put in place a data-sharing agreement for the *Mitchell* expedition that was very different from current paradigms at the time in the Gulf in that basically everybody's data was shared with everyone. Part of that, then, was also everyone's data gets shared with everyone, and everyone has the opportunity to present at this scientific meeting. So we put together a scientific meeting that was held at the Kuwait – I can't remember if it was the Kuwait Advancement for Science or the Kuwait Institute for Scientific Research at the time, but it was one of the conference rooms that had been reconstituted. There were a series of papers and presentations that reflected the work done on the various legs and where the various principal investigators [inaudible] research. And then put together a special edition of the *Marine Pollution Bulletin* with papers from that conference and other papers that were submitted to [inaudible] and the Gulf Program Office for us to include in that special edition of the journal. Those were some of the things that occupied my time when I got back to DC. We put together the scientific meeting in the winter of 1992. I don't remember the exact dates. And the journal was sometime after that. Then I worked to transition the records from the Gulf Program Office, both for the early work that was done on the atmospheric modeling and the rebuilding of the met department and the environmental protection department and providing them access to that modeling capacity, as well as the *Mount Mitchell* materials over to the National Archives and trying to work through how to do a records package to the archives. I'm still not entirely sure I understand that process, but we felt it was important to pull those records together and submit them at that point in time to the archives. And then eventually, I transitioned to working for Commander Cava as her special assistant in what was then called the Marine Sanctuaries and Reserves Division in National Ocean Service and worked with her on a variety of different policy issues and eventually transitioned over to that division full-time and have been with what is now known as the Office of National Marine Sanctuaries since that time, although I've had a variety of details around the agency since that period.

MF: So, jumping back to the work that came out of the cruise – conferences, papers, and so on – you mentioned that the data-sharing agreement was sort of a special one and a bit different than we're used to and what we have become used to. My understanding is that NOAA has a very open data policy, that we share everything that we collect. Was that not the norm with other states, typically?

LS: My understanding was that that was not the norm, and to some extent, may not be the norm at this point in time for many of the participant countries in the Gulf and even some of the European participants. Many individuals are very possessive of their data, particularly if they've had to go through grant funding to get it. Government entities – NOAA, EPA [Environmental Protection Agency], Department of Interior, etc. – all of our data and results are considered to be

part of the public record when it's appropriate – not necessarily always the case for natural resource damage assessment that might be part of litigation. But generally, NOAA data, NOAA images, NOAA video – all of that's open. So we brought that culture, for lack of a better way of characterizing it, to the Gulf and said this will be an open-sharing process. You're all getting similar access. You will all be getting the same datasets. If you're on an early leg, we will make sure that you get everything from that leg, and if you're interested in stuff from the subsequent legs, we will make sure you get that, too. This was in the time of 3.5-inch floppy disks, so that meant everybody got a lot of floppy disks. I think I still have a set somewhere in my office. I don't have the ability to read them anymore. I don't have any tools that will read them. We got most of that stuff transferred. But it had all of the physical oceanography data. It had all of the hard data that had been collected by the ship and by many of the scientists, without necessarily any analytics. The intent of that was not only to uphold what NOAA normally does with our science and with our science platforms but to try and instill more of an open environment and a cooperative environment with participants in the Gulf. I think some of that has held, but I'm not sure that we made a long-lasting cultural change. I haven't been that involved with scientific research in that region since that point in time. Jackie Michel – Dr. Michel from Research Planning, Inc., is still doing work on wetland restoration and coastal restoration issues associated with Gulf War I in Saudi Arabia. She and her company are working much more in the Gulf and can give you a better sense of some of those issues. My sense is that it's more open than it was, but it's still not fully open, and there may not necessarily be broad data sharing. There's certainly a lot of interest. When I was back in Kuwait for a Gulf Cooperation Council science meeting along with other representatives from NOAA, including Craig McLean as the administrator of OAR [Oceanic and Atmospheric Research] and others, we spent time talking with representatives from all of the different countries in the region, and they were working on a number of projects. But some of the challenges in that region are very different. Water quality is a much bigger issue now in the Gulf because there's less and less freshwater input into the head of the Gulf, into Kuwait. Development in Kuwait and UAE, to some extent in Saudi Arabia and Bahrain, and even in Qatar, has increased exponentially, so demands for freshwater have increased. Inputs of fresh water into the Gulf have decreased, impacting the resources that are there. So they're seeing a whole series of different issues now than they saw then, and I think there's a growing recognition that they've got to have some level of cooperation and coordination on what's happening to be able to address some of those issues. But there's always going to be some stepping back to national interest or interest of an individual scientist, I think to some extent. You see that in private and academic enterprises here in the United States. It's government science that tends to always be a little bit different.

MF: Definitely. If you could refresh my memory, was ROPME created in response to the oil spills or the oil well fires, or did that exist prior?

LS: ROPME existed prior. The United Nations Environment Programme, UNEP, has a series of regional organizations around the world. ROPME is the one that addresses the countries and the body of water that's both known as the Arabian Gulf, the Persian Gulf, or the more partisan-neutral ROPME Sea Area designation. I'm not sure exactly what year they were created, but that directorate was up and running and had been in place for a number of years prior to our engagement with them. When I was back in – I guess it was actually 2016, not 2015. I can't remember. It was either 2015 or 2016. We met with the new director of ROPME, and it's been an organization that sort of has waxed and waned depending on what the need for it was. They've gotten into more environmental surveillance activities as far as trying to provide more overarching information to the countries within the region. I think they've struggled for relevance a little bit over time and tried to figure out how to be relevant to their member states. When you're an entity that doesn't necessarily have a lot of money to help address problems, that can be challenging when you're trying to get regional organizations to focus on an issue. So ROPME was a natural partner during the assessment of the first Gulf War because they provided us that conduit, and they were that international entity chartered by the UN. I think we would have found another way to work those kinds of dynamics if we hadn't necessarily had access to ROPME. But I'm not sure how active and engaged they are now. Like I said, it seems to sort of wax and wane. But they're still based in Kuwait and still around.

MF: Interesting.

LS: Although it was a really good thing we had a driver to get there, because I never would have found it, and it's a place I used to go to on a routine basis. But there had been so much development in Kuwait, I couldn't recognize any of the reference marks I had had previously because there had been so much in-building, and I never would have found their office.

MF: Definitely. Thinking about the project as a whole, would you say it's made in the intervening almost thirty years – would you say it's made a long-lasting, meaningful impact on the region, the work that was done, and so on?

LS: Yeah, I think it has. I think it was the first really comprehensive look at the environmental health of that region. It provides them a good baseline for understanding where things are for contemporary issues now – for their water quality issues, fisheries dynamics, that kind of thing. It was an important assessment internationally in understanding what impact spills were having in a relatively closed regional sea, a relatively closed regional ocean, and understanding that was doing both to water quality and fisheries, but also to shoreline environments. It certainly advanced our understanding of various aspects of spill science, not only in that region but throughout the world, and certainly helped bolster some techniques, build some expertise within that region, and, I think, foster continued science growth for many of the agencies in the region. Without a forcing function like an environmental catastrophe after a war or a major catastrophe

after a storm – Hurricane Katrina, Hurricane Irma, other things – many times, it takes something like that and the assessment work that you do after that to get a new baseline and/or to put new energy into science organizations. It gave them, again, that baseline level of understanding of sort of what had happened with that spill, but a baseline for their overall understanding of where that body of water was and the resources in it. So I think all of the countries within the region have continued to build on that expertise. Certainly, looking at things in that multidisciplinary way is very reflective of how we deal with spill response assessments now. When we look at something like *Deepwater Horizon* or *Cosco Busan,* or Refugio, you do a natural resource damage assessment looking at all of the impacts. You look at water quality. You look at impact to fisheries, commercial and recreational. You look at shoreline impacts and understanding not only what impact has occurred but how to mitigate that and what the socioeconomic impacts are as well as the ecological. The *Mitchell* work was focused mostly on ecological impacts, but some of the countries certainly took that information and used that to understand how it was impacting a subsistence fishery or impacting their development of their beaches or redevelopment in, say, the case of Kuwait. Certainly, they took that information on board at the time.

MF: Interesting. So, you mentioned earlier following the project, you went and worked for a variety of NOAA offices before coming over to National Marine Sanctuaries. What sort of experiences did you have in the various offices? You mentioned working for Commander Cava. Do you want to talk about those experiences at all?

LS: Sure. So after I left the Gulf Program Office, I went to work for Commander Cava as her special assistant in the Marine Sanctuaries and Reserves Division and worked with her on a variety of activities, some of which at the core were very similar to some of the things that I had been doing in the Gulf Program Office – a lot of facilitation of meetings, facilitating logistics of meetings, dealing with policy issues that were coming up. Over time, that work shifted into being a specialist working on designations of state water sites. I worked on office-level reorganizations, budget formulation, and execution issues. It's been a whole variety of things over time. Through various details, I've spent time downtown in what was then called the Office of Program Analysis and Evaluation, which was part of a budget formulation and execution review process. I've spent time at the Restoration Center and Office of Habitat in National Marine Fisheries Service. I've spent time as the deputy director of the National Oceanographic Data Center in NESDIS [National Environmental Satellite, Data, and Information Service]. I'm trying to think. There have been a number of things. And then there have been a variety of special assignments. But a lot of them have tied back to either policy experiences or a combination of policy and logistics kinds of experiences. In '98, I became the resource protection coordinator for the Marine Sanctuaries Division and started focusing on dealing with emergency response, contingency planning, damage assessment, and restoration activities in the national marine sanctuary system, as well as enforcement, and did that job most of the time with

some details in between until about 2016, when I went on detail to the Florida Keys National Marine Sanctuary as deputy superintendent. That detail went for about a year, during which time I was asked to apply for the position, and then I was permanent in the position for about 18 months, and then I shifted to the regional response coordinator position for Florida Keys National Marine Sanctuary and the eastern region of the national marine sanctuary system. So my current responsibilities cover from the Great Lakes to the Gulf of Mexico for emergency response, contingency planning, damage assessment, and restoration-related activities. I deal with all of the issues associated with storms, with oil spills, vessel groundings, all of those kinds of things – at this point now, just for the eastern region, rather than the entire country. But during the course of my work at NOAA, I've dealt with everything from docks that left Japan during the tsunami and ended up in a wilderness area and Olympic Coast National Park and trying to figure out how to remove a six-hundred-ton dock in a wilderness area with no access by road or real access by water, to various oil spills, dealing with plane crashes – a whole variety of things that we'd all rather not necessarily deal with. But the agency works to protect resources in a lot of different areas. We have a lot of different trust resources – not just the national marine sanctuaries, but we have marine mammals, we have commercial fisheries. So there are a whole cadre of staff around the agency that work to protect those federal resources and work with states and tribes and territories to protect resources that are in state and territorial and tribal areas as well. So it's been interesting and very diverse work.

MF: Absolutely. Were you involved with the *Deepwater Horizon* response at all?

LS: I was. I was the natural resource protection coordinator for the Office of National Marine Sanctuaries at the time and coordinated the Sanctuary's response and pulling a variety of staff from the Office of National Marine Sanctuaries in to support the *Deepwater Horizon* response as well. I myself did two tours as the environmental unit leader for what we call the area command, so for the overarching coordination of the response effort in Robert, Louisiana, and in New Orleans. And then, I also did a stint at what we called the NOAA War Room, which was downtown at NOAA headquarters, and then did a lot of support work remotely from my office in Silver Spring, and like I said, trying to pull in personnel. Ironically, for a resource management office within NOAA, we provided more GIS [geographic information systems] specialists than we did resource specialists. Part of that was the challenge of getting people to be willing to commit to two-week rotations. We had a lot of personnel, particularly on the West Coast, that had experience in oil spills, but couldn't make two-week commitments at the time. But we did have a lot of GIS specialists around the country that we were able to pull in and who supported the NOAA ERMA project, which is the Emergency – I'm sorry, Environmental Response [Management] Application, which was the GIS situational awareness platform that we were using at the time that really developed a lot under *Deepwater Horizon*. So we provided a lot of personnel for that. *Deepwater Horizon* was interesting in how deeply it reached into the agency and how deeply it pulled components of the agency that had never been involved in a spill

response before. We were able to engage components of our scientific side of the house that normally we don't have a spill that's long enough to effectively engage them or to engage some of our other state and federal partners that do science and figure out ways to integrate them into the response and to socialize them into being able to give us answers in a way that was going to be actionable for the response. So that was a really challenging effort to try and get across to scientists – that, unlike other things, you don't have the leisure of time to go study something and then give us an answer in a year. We need an answer 48 hours after you take that data or a week at most after you take that data. That, for many scientists who haven't been exposed to that, is a very different mindset and a very different culture. And some of the scientists that we brought into the incident command were able to figure that out and adapt to it and work with it and have embraced that since then and have embraced pulling their colleagues in, and others just couldn't really – they couldn't make that work. It was just too much of a challenge for them to make that work. But *Deepwater* was – we had every line office within NOAA deeply involved in *Deepwater*. It's part of the reason why NESDIS now does spill surveillance as a routine part of their analysis. That's been invaluable for us in understanding where ships may be spilling offshore, where legacy wrecks that have been lost in World War II might be leaking oil, where we've got oil coming up from abandoned wellheads or pipelines in the Gulf of Mexico or other places, even understanding our natural seeps off of California. That's a skill set that NESDIS developed and honed during *Deepwater Horizon*. For lack of a better way of characterizing it, there was an opportunity there that allowed us to develop a new skill set within the agency that had been thought about but hadn't really been well understood. And that work continues with field verifications of oil thickness based on what the satellite observations are and then what our field biologists are seeing and being able to help further calibrate what they're seeing so that those tools can become even more useful for surveillance and monitoring activities.

MF: Interesting. You mentioned doing some time down at the response center. Forgive me if I forget the name, but the on-scene incident command.

LS: Area command?

MF: Area command. Thank you. Based on stories that I've heard from other people who were down there, that was a fairly exhausting experience – long hours, seven days a week, constant immersion. Was that your experience as well?

LS: Yes. Yes. *Deepwater Horizon*, particularly in the early parts of the response, were 24/7 operations. I got there a couple weeks in, so it wasn't quite as frantic. But it was still very long hours, very crowded situation, but also at the same time very controlled because you're using what's called the incident command system or national incident management system. That gives command and control for information flow and communication between different functions and units, and people who come into a unified command and come into a command post from

whatever agency – it doesn't matter if they're from industry, state, federal, private entity, contractor – they can slot into a particular job. They understand how that job works and what information is needed to flow up, down, and sideways from that particular position. So that helps information flow effectively, and it helps the unified command in its decision-making process. The whole intent of that structure is to provide information flow for tactics and decision-making, and there's a series of operational periods. Because the area impacted by *Deepwater Horizon* was so large, there was an area command that provided overarching command and control in the field. Then there were a series of forward operating bases that were literally way forward, and then there were a series of smaller commands in Miami, Mobile, and Houma, Louisiana. That's where a lot of the field activities were taking place from because they were closer to what was happening. But NOAA deployed ships. NOAA deployed aircraft. We deployed [inaudible] instrumentation. NOAA had a lot of skin in the game that weren't normally engaged in spill response activities. That got coordinated to some extent within area command, but it also was being supported by the staff in the war room back in NOAA. So there were a lot of individuals who may or may not be right down at the point of the [inaudible] or out on a ship trying to mop up oil that would be intimately involved. But it was very much a very intense experience. Robert, Louisiana – the location we were in was a Shell training facility. It was a little Shell training facility. It had a small number of rooms on location. Everybody else had to stay in hotels that were about forty-five minutes away. So you had to drive in in the morning and be there for the – depending on what your position was, you might need to be there for the 6:00 or 7:00 brief, and then you wouldn't be leaving sometimes until quite late at night. They served three meals there, which was good. That was the lifeline for many of us. You could get your laundry done, which was also good because there was no time to do anything at the end of the day besides fall into bed and collapse. It was the same when we moved the area command to Louisiana – I mean, to New Orleans, rather. The hotels were a little closer. You could actually walk to the hotel in some instances, although some of the neighborhoods were a little sketchy, or take a shuttle. But it was a very intense experience. That was part of the reason why NOAA rotated their staff generally in two-week increments because you were working very long days – sixteen to eighteen-hour days as a routine – with not really much in the way of downtime at all. So [audio cuts out; inaudible] pretty quickly, their decision-making abilities degrade if you don't rotate them out and rotate fresh people in. Yeah, it was intense, and I served in a role that was for me different than I had been in before and was serving as one of two environmental unit leaders. The environmental unit is where a lot of the environmental information is coming in about resources at risk, where we're making recommendations as to what strategies and tactics we think will cause the least amount of additional harm to resources, or where we see resources that are at risk that need to be protected by booming or some other response strategy. It's also the unit that makes recommendations to the command later in a spill about whether or not the cleanup is complete. So there are policy discussions that take place about how clean is clean, and have we met that threshold? Do we know what the background is for this area, so we're not cleaning past what background levels are? It's the location where there are discussions about

impacts to historical, cultural resources or traditional cultural uses of environmental resources. So there's a lot of different types of conversations that take place in the environmental unit. Because of the subsurface dispersal applications, water quality and understanding what was happening to the oil in the water column and the science associated with that was very different than any other major spill we've had in the United States and really anywhere else in the world that I can think of right at the moment. Trying to figure out how best to assess that information and to measure it, measure what was happening, the impacts, and understanding what was going on with that on the response side so that we could understand how to better mobilize response resources or recommend mobilization of response resources was a very intense science activity for NOAA. In parallel to all of that, you have the natural resource damage assessment activities, where all the state and federal trustees are trying to understand what the environmental harm is from an oil spill. So they're doing, in some cases, some of the same sampling that the responders are doing and trying to understand the toxicity of the oil, how it's impacting the sediment, the water column, the fisheries, how it's impacting uses of those resources. So you've got these two massive efforts that are taking place at the same time, often in parallel, sometimes with the same staff or splitting samples and that kind of thing. And sometimes they can be a little bit at cross purposes. Responders, particularly from the industry side, don't necessarily always want to be involved with natural resource damage assessments because that's what costs them money. It's not only that they did something wrong, but the natural resource damage assessment quantifies what that wrong is and what it's going to cost to fix that. There were a lot of charismatic megafauna, as we characterize turtles and dolphins, that were impacted by *Deepwater Horizon*. Trying to figure out how to prevent additional harm to turtles and dolphins or brown pelicans was really challenging in trying to figure out how to deal with that. How to deal with the thousands of birds that were expected to come in in regular migration and trying to keep them out of the salt marshes that we knew were impacted – were there good ways to do that? Was hazing going to work? Was hazing going to work for dolphins? There are [audio cuts out; inaudible] questions that come in, and you never know what question's coming in at any one particular time, and you're just trying to work through things as quickly as you can within this planning cycle because command always wants more information than you have. But NOAA really expanded a lot of its skill sets. When we respond to spills now, we have a much deeper skill set across the agency that we can bring to bear, which is really pretty amazing for those of us that have been in response and damage assessment for a fair while. It's great to have those additional skills and know where some of those additional resources are.

MF: Absolutely. So that probably dovetails nicely with your current role as the regional response coordinator at Florida Keys. Do you want to talk about any experiences, in particular, you've had in this role?

LS: Sure.

MF: By all means, please.

LS: Sure. The role is somewhat similar in that, like I said, it's very similar to what my previous national portfolio was. I'm not doing as much enforcement work as I was before. And I'm much more focused on just Florida Keys. In the Florida Keys, we have a lot of vessel groundings. That's a chronic issue with recreational and commercial vessels. We don't typically have as many oil spills here. Within the national marine sanctuary system, we find we have more oil spills on the West Coast, or sites in California are usually the ones that suffer the most oil spills. That's not because we don't have a lot of traffic in Florida. We've just – knock wood – been incredibly lucky. We haven't had a number of major spills or major incidents. We do have a lot of hurricanes, and we end up doing what we call Emergency Support Function 10 responses after hurricanes. Under the Stafford Act, there are a series of emergency support functions that all federal agencies use to support the work of either assessment or recovery after a hurricane. Emergency Support Function 10 specifically deals with pollution response. So it's very similar to the work that NOAA does in supporting Coast Guard for regular pollution response. After a hurricane, we can end up with thousands of displaced vessels. So instead of having all your vessels in an anchorage or at the dock, they end up in the mangroves. They end up in the middle of the road. They can end up in somebody's front yard. They end up all stacked up together in a marina or in a canal. So part of what NOAA, Coast Guard, and the state agencies do after a hurricane is determine which of those vessels – determine where they all are if we can and determine which of those vessels are pollution threats, and then literally one by one work through dealing with the pollution threats associated with those vessels, then in some cases working with state agencies and/or the owners to salvage those vessels and try and get them out. And we've got to do it in such a way that we limit the amount of impact to the marine environment or the coastal environment – so not harming the mangroves, corals, or seagrasses any more than we need to. Those are some of the things that we deal with episodically down here. We often get shrimp boat groundings where individuals, instead of waiting for high tide, choose to try and power off. Because they try and power off, they basically blow large holes in the seagrass and create the equivalent of a swimming pool. Well, seagrass grows horizontally. So unless you bring that sediment back up to grade and then replant, seagrass can't regrow, and you could start to lose that entire bank and the structural integrity of that bank. There are a lot of different things that can occur with respect to vessel groundings, whether it's seagrass or corals. We deal with coral groundings and restoration of those grounding sites after the removal of a vessel. One of the big activities we have ongoing in the Florida Keys right now is a project we call Mission Iconic Reefs, which is an attempt to fully restore seven reefs along the length of the Florida Keys reef tract. The Florida Keys reef tract historically had coral densities of about 25-30%, depending on where you are, and we're currently at about 2.5-3% because of a series of back-to-back bleaching events, hurricanes, and what we call stony coral tissue loss disease, which is a coral disease that impacted about twenty species of coral and has had broad-scale impacts on the health and diversity of corals in the Keys. So the Sanctuary is working with a

group of state and federal partners and restoration practitioners to try and fully restore these seven sites. It's a twenty-year project that we estimate will cost about $100 million, we think. We don't know. We don't have $100 million for that project. But we've started pulling in funding for some of the first steps of that project, and it's created a whole new energy in the Keys and a whole new sense of ownership within the community about trying to protect the marine environment and trying to understand what use and overuse, in this instance, has done to the marine environment here in the Keys. That's one of the efforts that's ongoing that's been pretty interesting that's not necessarily related to oil spills or vessel groundings, and it's something that's a little bit on the more positive side. But the oil spills, vessel groundings, vessel fires – that kind of stuff happens all the time. Just last week, I was dealing with a buoy that blew in from an oil field in Louisiana. It was lost during one of the hurricanes last summer. And it was dragging a three-hundred-foot cable that weighs about a thousand pounds. The buoy itself is about seventeen feet long, and it weighs, I think, about 1,500 pounds, and it was right close to one of our reefs. Luckily, this buoy had some markings on it that allowed us to identify the company, and I was able to find a representative from the company and have them get a salver to come get that buoy, and they were able to pick that buoy up earlier this week before it ended up on the reef, because we've had buoys that have gotten entangled in reefs with either a chain or a cable, and they've done a lot of impact. Sometimes, they don't have any markings on them, and we can't figure out who did it. And they're very challenging to work with because many times they are so big and heavy, because they need to be out in the open ocean, that they're more than sometimes our local salvers can handle. So we were lucky with this one, but we're not always that lucky. And we're lucky in this one that it didn't necessarily – to our knowledge yet, hasn't caused a huge amount of resource injury. Not so the case with a recent motor vessel yet that had a catastrophic fire and sank in the middle of a seagrass bed. Luckily, everybody was able to get off safely. But the vessel was so far from fire resources that it burned to the waterline. That location was about twenty-three miles from Key West, and it took significant efforts on the part of a salver to refloat that vessel and then be able to bring that vessel back into Key West. We're still working with the responsible party on the debris at that site and trying to make sure that all that debris gets cleaned up before it ends up on turtle-nesting beaches in a month or so and impacting turtle-nesting season. So there's a whole variety of different things that I deal with down here. It really varies. But Mission Iconic Reefs has been a really interesting project, and there's a lot that's going to continue to develop with that over time, and there's a lot of interest in that project not only here in Florida, but elsewhere in the Caribbean and elsewhere in the world, because it's one of the first times anybody's tried to take a really comprehensive approach with a lot of different species, even looking at herbivores and reintroducing herbivores back to the reef. So there's a lot of interest in seeing if this can be successful because corals all over the world are in trouble, but they're really important for physically protecting coastal communities that are behind them. They're a big part of the reason why the Keys still exist and haven't been obliterated by storms, and the same for many of the other island countries in the Caribbean and

elsewhere. So that's some of what I'm working on now. There are always little bits and pieces of different things that pop up.

MF: Sounds like a very diverse portfolio.

LS: Yeah. This morning, I was having conversations about potentially polluting wrecks from World War II and historical, cultural resources. And this afternoon, I'll be talking about restoring corals and what we're going to do with a historic anchor that was recently found and seized by law enforcement. So it's a very diverse portfolio. I guess a little bit of professional ADD [attention deficit disorder] can sometimes be a good thing, and it can sometimes be really challenging.

MF: Absolutely. So you have worked in a lot of different roles. They've exposed you to many different aspects of the organization's work and other organizations' work, too. The *Mitchell* project came fairly early in your career. Do you think that the diversity of work that you engaged in on that project helped prepare you for these many, many different roles and many, many different jobs within those roles?

LS: Yes. Unequivocally, yes. I think I mentioned this in our earlier conversation – that I don't know that I would have had the guts to take the job if I had known what it was going to entail. It was my first professional position after graduate school. I had worked as a lab preparator for Shoals Marine Lab. I had done some other things. I had done TA [teacher assistant] work and that kind of thing. But this was my first "professional" job. Because it had such a diversity of tasks, some of which were relatively straightforward, and I could understand based on some of the work I had done in graduate school – I had maybe a book understanding of things. But this was working with people in the real world. There were other aspects of that activity that built on some of the skill sets I had developed working in the marine lab or working in a marine hardware store – basics of where to buy rebar. But it was such a broad set of skills, from putting together diplomatic receptions and press conferences to trying to make sure that we could find the peanut butter cups or other things to keep the ship happy – trying to make sure that the ship had potable water, had fuel. That diverse skill set and working through that and all of the problem-solving associated with that, as well as all of the policy skills that I developed in the course of that project and putting together the scientific conference after that, have certainly been an underpinning in giving me confidence to take on a broad variety of problem-solving tasks across the agency. That problem-solving skill set is one that I still use every day. I think without that kind of an activity, in my case, right after graduate school, I'm not sure I would have had the fortitude, the guts, whatever the term would be, to take on some of the challenges that I have later in my career or to understand that while something is super-challenging, like *Deepwater Horizon* or some of the other things I've dealt with over time, you can work through almost anything for a finite period of time. I didn't look at the *Mitchell* work as something that was

finite. We had a very specific target as to when we wanted the ship to be there, what we needed to do with each leg, but it also gave me an inherent understanding of the vagaries of dealing with weather and ships and launches and personnel and trying to understand how all of that works together. That operational logistics piece is something that I use a fair amount now in trying to balance getting field assessments done versus supporting partners, trying to figure out how to do that in COVID. All of those skill sets that I developed on *Mitchell* or with the *Mitchell* work are things, I think, that have sustained me through a greater part of my career – understanding the value of working with multiple parts of the agency, understanding the value of working with multiple international partners, and being able to take the time – most of the time, being willing to take the time that you need to work through that group process and figure out how to make the whole greater than the sum of the parts. You can do that with leveraging. So many of those skill sets have become almost a default for me, and I will look to leverage things. I will speak about things from, as Admiral Lautenbacher used to say, a one-NOAA perspective because that was my entrée into the agency, so that was normal for me. I'm pretty good about swapping back and forth, and I certainly can be very parochial about the Office of National Marine Sanctuaries or about Florida Keys when I need to be, but I also can telescope out pretty quickly and look at what might be most supportive for the agency, or even in some instances, the US government as a whole. But yeah, when I did some of my interviews for LCDP [Leadership Competencies Development Program] or when people have asked me about seminal leadership experiences, and I have to reflect on something like that for an essay, the first one I typically think about – or challenging experiences – the very first one I typically think about is my work with the *Mitchell*. Even though it was 30 years ago, it's in many ways still very vibrant and still very much a core of who I am and why I am who I am.

MF: Now, you've been with NOAA for thirty years. You've seen lots of changes – different administrations, different policies, different offices. You saw National Marine Sanctuaries come into existence, basically. For the folks who are kind of starting off now, who are where you were 30 years ago, what advice would you give them if they wanted to pursue a career like you have – someone that's very diverse and hitting many different areas?

LS: A couple of things. I would say don't be afraid of being uncomfortable in a position, of taking on something that is a stretch, because a stretch position is by its very nature going to be something – and this might be a detail. It might be a special project. It's going to be something that's going to push you to grow, but it might be very uncomfortable and even scary in the process. That's okay. The other thing I would suggest is not being afraid to reach out to members of leadership and ask them about their experiences. Regardless of administration and political persuasion, members of our leadership, political appointees, AAs [Assistant Administrator], deputy AAs, office directors, are all very interested and willing to share their leadership journeys with people. You've got to figure out a way to have that conversation with them that is not going to be a huge time sink and is manageable. Sometimes, it might just be

saying, hey, could we meet for coffee someday, and you tell me a little bit about your leadership experience? Or could I shadow you for a couple of days and understand a little bit about what kinds of things you deal with on a daily basis? As a general rule, I have found most of the leadership folks within NOAA more than willing to do that kind of stuff. There has to be a little bit of flex because some things aren't going to be appropriate to have somebody shadow, or sometimes there need to be some scheduling issues to try and figure out how best to do that. The other thing I would say is to take advantage of brown bags to learn about other offices. Take advantage of leadership training opportunities, whether it's the mid-level career seminars, the ELDP [Executive Leadership Development Program' and the LDP programs that the department offers, or the LCDP program that NOAA offers. The LCDP stuff for 2021 just opened up. Take advantage of what used to be called NRAP [NOAA Rotational Assignment Program] assignments that are now called LANTERN [Leveraging Abilities, Needs, Talents, Energies & Resources Network] assignments. And be willing to take a detail outside your office into something that's very different. When I took a detail during LCDP to NESDIS, it was a whole different world. They spoke an entirely different language. I eventually figured out that NESDIS actually speaks two languages. They speak satellite, and they speak data center. Nobody else in the agency speaks satellite except some folks in the weather service. Very few people speak data center. So it was a good thing to do, and it gave me a real appreciation of a part of the agency I didn't understand very well. I'd like to believe it gave some of my colleagues there a little bit of a better understanding of the National Ocean Service. But take advantage and look for those opportunities. There are some amazing Brown Bags. Look for Brown Bags that are being hosted by other agencies in your area of interest. Department of Interior has a lot of stuff. Especially during COVID, there are a lot of things available now that might not necessarily have been available to staff at all different levels of the organization than there were before. So take those opportunities. And have conversations with people you might not have normally had those conversations with. In my work in the Gulf Program Office, because of where I was in Kuwait, within two weeks of being on board, I was putting together a visit for the administrator of the agency and his special assistant. I had met his special assistant a few times. That was Commander Cava. I had not met the administrator of the agency but met him pretty quickly. That was a little intimidating. But then there were just some basic things he needed or that she needed, and just working through some of that and realizing that everyone's human. As somebody said to me early on – it was actually about leading – it was either a very senior NOAA Corps officer, one of the admirals, or it was the naval oceanographer. It might have been the naval oceanographer. Everybody puts their pants on one leg at a time. We're all human. And even when somebody's in a really elevated position, they got there through a series of steps. So have those conversations or ask them if they're willing to have those kinds of conversations, and you can learn some amazing things. You can get some amazing resources. You may end up with a professional mentor out of those conversations. And seek out recommendations from your peers as well because there's a lot of strength in the peer community within NOAA.

MF: So just to bring things back to the present, in the interest of creating a record of the present, as it were, we are, of course, in the COVID pandemic. You mentioned it earlier and some of the opportunities that it presents. How have you dealt with the pandemic? What has been your experience during it, both from a professional perspective and, if you're willing to share, a personal perspective as well?

LS: The pandemic's been an interesting challenge, I think, across the board for the agency. It's been both a challenge and an opportunity. Many parts of the agency within NOAA, within other parts of the federal system, were not that willing to consider telework. Because of the response work I had done, I had been an individual within my office who had had some authorization to telework much earlier than many of my colleagues, but it was always situation-dependent. That is obviously now the norm across the board. We – the collective we – have a better understanding of what kinds of positions are really telework-amenable and which ones are really challenging to make them telework-amenable. Figuring out how to help our marine mechanics or our buoy maintenance technicians be able to advance their skill sets in a way that's safe and then figure out how to eventually get them back into some level of an operational mode where they're not at personal risk but where they can still do what we hired them to do – because their work is not amenable to telework – has been an interesting challenge. And we've gotten better at dealing with it. I think it's an ongoing work in progress. For many people, I think it's really exacerbated some of the dichotomies in where people have good internet access and where they don't. Many of us have gotten very used to working in office buildings with pretty good internet access because of what NOAA provides us, and that's not always the case for us in our personal situations. I think that's been a real challenge to deal with across the agency, much less trying to figure out how to support families who have children at home that need to do or needed to do distance learning. For myself, I ended up leaving Florida in March of last year and going up to the home I still owned in Virginia because the community that I was in in the Florida Keys was not particularly willing to take on COVID safety protocols in a very serious manner, and I have some personal health issues that made me feel more vulnerable. So we chose to retreat to an area where I knew that there were more than 14 ICU beds for 73,000 people, so we went up to Virginia. And because of telework, I was able to effectively do my job from Virginia and support the activities that needed to be undertaken. Florida Keys National Marine Sanctuary, even though we're in phase zero, has been able to undertake some field activities, whether it's buoy maintenance, it's injury assessments for vessel groundings, some of our science work, we've still been able to do. Other agencies are back to a much fuller operational mode, and we'll get there at some point when the agency determines that the risk is appropriate. But there have been struggles. Our folks can't dive, and a lot of what we need to do is focused on diving. So certain parts of our field activities we can't do. We've got to figure out partners that can do it, or in some cases, we're looking at contracting. I'm back in the Keys. I've been back for a while. I actually get my second dose of vaccine next week, which will make me feel much better about

dealing with things in the world and better able to address the changes that come on. But I think all of us collectively in my office, in the Florida Keys National Marine Sanctuary, in NOAA as a whole, across the federal entities, have learned a lot more about risk management. What we do with that over time remains to be seen. There's a joke in the spill response community and within parts of Coast Guard that Coast Guard always responds to the last disaster. For a while, that meant it was always hurricane response, and then it was *Deepwater Horizon*. Now, it's kind of a mix of hurricanes and spills because of the last couple of years of hurricanes with a lot of small vessel issues. I hope that NOAA doesn't end up in that situation, that NOAA becomes more nimble and does allow itself to continue to be a science-driven agency. I think the guidance that we've received from the public health officers that are assigned to NOAA have been critical in supporting the choices that NOAA has made to protect its personnel and its people while still advancing its science missions where possible. That's been critical. And that's been a level of fundamental support I haven't necessarily seen in other federal agencies. From talking with Captain Rathke and others in the Public Health Service, and certainly looking at the changes in this administration, I expect that to continue and that science focus to continue to be really strong. We're not out of the woods yet, and I don't think we're going to be out of the woods for quite a while. As more of the agency staff get vaccinated, that will help in some instances. But until the vaccination rates are greater not only in the United States but in all of the other areas that interact with the United States, we're still going to be dealing with COVID-19 for an extended period of time. I think it's going to be impacting our operations more significantly than many of us would like to believe or would have believed a year ago for a much longer period of time than many of us would like to believe. And it'll be really interesting to see what the long-term cultural impacts are to the agency. It's challenging. We're getting better at it, but it's challenging. And dealing with COVID during hurricane season just makes a lot of people really anxious because it complicates hurricane response and recovery activities so much more.

MF: Definitely. So we're just about at the end of our time. Did you have anything else you wanted to share? Anything else you wanted to say?

LS: I can't think of anything at the moment.

MF: Okay. Well, with that, I wanted to thank you for your thirty-plus years of service to NOAA. You've had a tremendous impact on the organization. You continue to. I'm personally appreciative, and I know that everyone else that you've worked with in the organization is equally appreciative. So thank you for your service, and also thank you for your willingness to share your story.

LS: Well, thank you for being willing and seeking out the funding to tell the story about the *Mount Mitchell* and what kind of work the *Mitchell* was able to do 30 years ago. I think it was a

pretty amazing thing, and it's good to see the effort in trying to bring some of those stories forward. So thank you for doing that, and thank you for allowing me to be part of it.

MF: Of course. Thank you for sharing.
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Reviewed by Molly Graham 4/16/2023