

An Interview with
Elizabeth Losos

at the Historical Society of Missouri St. Louis Research
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Interviewed by Dr. Blanche M. Touhill

Transcribed by Valerie Leri and edited by Josephine
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Oral History Program

The State Historical Society of Missouri

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PREFACE

The interview was taped on a placed on a tripod. There are periodic background sounds but the recording is of generally high quality.

The following transcript represents a rendering of the oral history interview. Stylistic alterations have been made as part of a general transcription policy. The interviewee offered clarifications and suggestions, which the following transcript reflects. Any use of brackets [] indicates editorial insertions not found on the original audio recordings. Physical gestures, certain vocal inflections such as imitation, and/or pauses are designated by a combination of italics and brackets []. Any use of parentheses () indicates a spoken aside evident from the speaker's intonation, or laughter. Quotation marks [""] identify speech depicting dialogue, speech patterns, or the initial use of nicknames. Em dashes [—] are used as a stylistic method to show a meaningful pause or an attempt to capture nuances of dialogue or speech patterns. Words are *italicized* when emphasized in speech or when indicating a court case title. Particularly animated speech is identified with **bold** lettering. Underlining [] indicates a proper title of a publication. The use of underlining and double question marks in parentheses [(??)] denotes unintelligible phrases. Although substantial care has been taken to render this transcript as accurately as possible, any remaining errors are the responsibility of the editor, Josephine Sporleder.

STATE HISTORICAL SOCIETY OF MISSOURI-ST. LOUIS

INTERNATIONAL WOMEN'S FORUM ORAL HISTORY PROJECT

DECEMBER 29, 2014

ELIZABETH LOSOS INTERVIEWED BY DR. BLANCHE M. TOUHILL

Blanche Touhill: Would you introduce yourself?

Elizabeth Losos: My name is Elizabeth Losos.

Blanche Touhill: Would you talk about your youth: talk about your family, your playmates, your elementary, your secondary schools. Who was it that said, inside your family or your community as a child, you really have ability or you have a great strength in a certain aspect of your personality, and then, was there a teacher that said something sort of similar or somebody in the community outside your family, because I think that it's interesting, where your confirmation comes from. So just talk and ramble.

Elizabeth Losos: Okay, thank you. Well, I came from a very loving family, very close family. I have three siblings: an older brother and two younger sisters, Carol, Louise and Jonathan and two wonderful parents and we live in St. Louis, grew up in Ladue. There were 10 cousins, including the four of us and we were all very close. We were 10 years, oldest to youngest, 10 grandchildren and so we sort of moved somewhat in a pack and remain very close to this day; in fact, all of our offspring, including all their cousins and second cousins, are all very close. Of course, it's a bigger pack, but still wonderfully nurturing environment. I, personally, felt that I had the best position in the family. I was, one could call it a middle child but I never thought of myself as a middle child. In our family, we were grouped as the older children and the little girls. That was the two categories and I was one of the two older children and so I always felt that my brother got all the responsibilities; he was always required to do things. Of course, he was the prince, but I got all the benefits of being in the older children and my two sisters were the ones who didn't get anything because they were the little girls. So I always liked this position of...

Blanche Touhill: Reaping the rewards.

Elizabeth Losos: Exactly, and so I always felt almost like an oldest child but without any of the responsibilities. And I went to Price School Elementary School which was a very small public school in Ladue. There was one class in our grade, it was a big class, about 28 children. There were only three of us that made it all the way from kindergarten through 6th grade. The rest came and went over time. There were two kindergartens so maybe it was only three from my...there was half day kindergarten at that point, morning and afternoon. So I would say perhaps one of the most defining aspects of my childhood...I can't say where this came from; it probably came from my family but very early on, I developed a deep interest in the environment and I remember in 3rd grade, passing around "Save the Whale" petitions and in 5th grade, I was passing around petitions for "Save the Harp Seals." I guess "Save the Whales" was through boycotting tuna fish, and from fairly early, I developed an interest particularly in animals and in conservation, conserving animals in particular, but all things environmental. I always tried to turn the thermostat down in the winter and keep my parents from turning the air conditioning on in the summer and I think that my love of animals probably came from our family trips. We took lots of trips. My mother loved to travel. My father loved animals and so my mother would convince my father to take trips by picking places where there were lots of great animals to see. So that was her way of...my father would stay home and read his books for 365 days a year if he could but my mother's wanderlust got them to all sorts of places around the globe. As children, they would leave without us sometimes. I remember when I was in kindergarten, they went away for three weeks to Australia but, as we got a little older, they started bringing us so we went locally, we'd go to the Ozarks, I remember going with our extended family and close family friends to Wilderness Lodge and other places. But we also would go to national parks around the country and then we started going to wonderful, exotic locations, many of which, when I was in 8th grade, was lucky enough to go with my brother and my parents on a trip with the St. Louis Zoo to South Africa, Rhodesia, which is, of course, now Zimbabwe, and Botswana on a safari and that was just extraordinary. Even later, we went to Sri Lanka and saw elephants. So I think that had a fair amount to do with my love of nature and animals, just being exposed to so many and it's probably not coincidental that my brother is also a biologist, a herpetologist and my two younger sisters didn't quite get the bug. I don't know that I had a particular teacher who

nurtured that. I had an excellent biology teacher in 9th grade, Mrs. Silverstein who really...boy, she made me work hard and I learned a lot of biology that year. I worked very hard for her. I remember that. That was the grade that I most cared about in entering high school. But I can't remember...and I had lots of wonderful teachers that I remember...I think I remember all my elementary school teachers but I don't remember any of them pushing me in a particular direction, I think maybe because I was fairly self-directed from a young age and, in fact, up to this day, I am a biologist and I work on biological conservation, so pretty much stuck to the same script from early days onward.

Blanche Touhill: Would your family encourage you to be a biologist?

Elizabeth Losos: Well, it wasn't just a biologist; it was, I knew from early on, if we're just focusing on that, sort of skipping through time at different levels, I had a deep passion in animal conservation, environmentalism from early on, and it took different forms. It wasn't just through a scientific route. I would, when I would have a paper, a big project due, often focus on that. When I was in the debate club in high school, I picked topics often that focused on this.

Blanche Touhill: What was your central focus from childhood?

Elizabeth Losos: It was my central, yes, and remains to this day, and as I said, from early on, I would go clicking off lights to save electricity.

Blanche Touhill: And it was the conservation part as well as just the knowledge of the animals.

Elizabeth Losos: Yes, I would say that was fundamentally the interest. I always liked the science. I always liked the biology, and other aspects. When I got to college, I remember freshman week, thumbing through the course catalogue, thinking about...I actually went back at one point and looked at my college application, years later, and I was amused to see, it says, "What do you think your major might be in college?" and I wrote, "Biology or government," because that was the other...

Blanche Touhill: The conservation too.

Elizabeth Losos: The conservation, public policy and so I'll move this theme through to the end: So in college, freshman year, I went thumbing through and I knew I

didn't want to be a biology major because what I was not interested in was medicine and the biology majors were full of people taking organic chemistry and physics and very focused on getting to medical school and I had no interest in competing with them, taking courses that weren't of particular...I was interested in the ecology, the evolution, the more organismic aspects and I happened upon this major which looked like it was made for me. It was called History and Science and it was, you had to pick an area of science which I picked organismic biology and you had to pick an area of history and I picked ancient history because I also loved history and then you had to take a certain amount of history of science. I went to Harvard and they had some of the leading historians of science and so it was an absolutely perfect major for me because I could really pick the courses I loved taking and ignore a lot of these courses that, if I had gone in a more traditional route would have taken which were not of interest. Then, at some point...but I didn't still know but environmentalism was always...I was head of the Environmental Action Committee in college as I was in high school. Then, in my senior year of college, I took a course called "Tropical Ecology" and we had a month field trip to Venezuela and it was fantastic and I said, this is it, tropical biology. This is where all the action...this was in the mid '80s, when there was not much focus on tropical rain forests...

Blanche Touhill: Except for Peter Ravin.

Elizabeth Losos: Except for Peter Ravin, actually had written an important paper in 1981, a report with the National Academy of Sciences on priorities in tropical biology. He had started to focus on that, and others, of course, but Peter was absolutely in the forefront.

Blanche Touhill: He was one of the early people because I can remember, he was up talking about it.

Elizabeth Losos: Yeah, but the general public had not yet locked in. That happened in the late '80s.

Blanche Touhill: That's right.

Elizabeth Losos: So, I came back from this trip and I said, okay, this is what I want to do. I want to go to graduate school in tropical biology and then I'm going to figure out what to do. I don't necessarily want to go into academia but this is the basis I need to do whatever I want to do and this is of interest.

Blanche Touhill: And you were after a Master's?

Elizabeth Losos: Well, I took a year off and then I traveled and then I worked on a Kibbutz and then I got a fellowship to work in Costa Rica for the National Park Foundation of Costa Rica for six months. Then I went to work on my Ph.D. in biology.

Blanche Touhill: Where did you go?

Elizabeth Losos: At Princeton and I found my major professor. I was attracted to Princeton because there was faculty who worked on this fantastic site in the Peruvian Amazon called Mono National Park and John Tourbourg's my advisor, thesis advisor, Ph.D. advisor. Then, about three-and-a-half years into that, I got a tropical disease called Leishmaniosis which forced me to remain sedentary for a while. I couldn't travel and it was okay because a lot of my plants I had experiments going. I had to give them some time anyway.

Blanche Touhill: Take care of them?

Elizabeth Losos: Well, not take care of them. They were in the Amazon but I had to give them time to grow. So I started auditing when I started graduate school. I was at Princeton and Princeton also has the School of Public Policy. So I wandered over there early when I started and I said, "Hey, do you have any joint programs for Ph.D.s in your Public Policy because I really love public policy and I'm getting a Ph.D. in biology," and they said, "Ah, no." So I audited a couple of courses early on and then as I got into my Ph.D., I really didn't have time for that but fast forward a couple years: I'm in the middle of my research. I've finished taking classes but I've gotten this disease and I'm stuck at Princeton for some time, so I started auditing classes again at the Woodrow Wilson School, Public Policy School and I bumped into a college classmate who I hadn't seen who was getting a Master's at the Woodrow Wilson School and we chatted. I said, "Oh, well, I really wanted to take a Master's but they wouldn't let me," just the kind of banter one says. So the next time I bumped into her, she said, "Well, I spoke to the dean and he really wants to meet you." So they were calling my bluff. So I went and I met with the dean and he said, "We think that's a great idea. We really think you should..."

Blanche Touhill: Was it a new dean?

Elizabeth Losos: He was not the same dean. I don't think he was new at that point but he wasn't the same dean, right, and they said, they'd be thinking that this is an important area, environment and they got me into the program. I kind of came through the back door. I got a fellowship to participate in it through the Pew Foundation. So, lo and behold, I'm finishing up my dissertation; I'm also doing a Master's in public policy, which I loved. It was great fun. It was particularly fun because, unlike so many of the students, I knew exactly why I wanted to be there and the courses that I was interested in, I just ate them up and then the things that I didn't, I just did whatever needed to be done. If you come in with that...a lot of the students were in a mindset of...almost like an extension of college where every grade, every test whereas I was there really to get everything I could out of it but I wasn't worried about the grades and that turned out, that just worked beautifully. So I ended up continuing on this path that was mixing my interest in science with my interest in public policy, conservation, et cetera.

Blanche Touhill: So when you got out of that, what did you do?

Elizabeth Losos: So, I had a post-doc at the Wilderness Society which is an environmental organization in Washington, D.C. and it was a special post-doc for merging economics and ecology, people who are interested in both. I did some research on the Endangered Species Act, looking at what were the causes of species that were listed, turned into a really interest study and I enjoyed that very much and I liked the Wilderness Society but they purely focused on domestic environmental issues and by this point, I had really decided that my interests were tropical and global. So I decided, as much as I enjoyed that, I wanted to go back to the tropics, and, lo and behold, a position came up and I knew the right people in the right places. It turns out that the Smithsonian had a network of these long-term, large-scale forest research plots that, they had started one in Panama. The Smithsonian has one of its units, the only international unit of the Smithsonian in Panama in the middle of the Panama Canal and they had done something that had never been done before, this massive forest plot where every tree down to this size was map measured and monitored through time. This started to be replicated around the world and they had money from the MacArthur Foundation and they had an interim director but they were looking for the first director and one of the members of my thesis committee and one of my college professors

from Harvard were both on the Search Committee as well as someone else that I had met in graduate school who had been a post-doc when I was and so I happened to know a lot of the people in the Search Committee and they called me up and they said, "Oh, we'd love someone who has a biology background and background in public administration, public policy," and so I got the job. I was based in Washington but did a lot of work in Panama but we also had sites in Asia and Africa and elsewhere, in Latin America; traveled a lot to Panama but all over the world.

Blanche Touhill: What did you do when you traveled? Did you research how they had...or did you get reports on how these plots were developing?

Elizabeth Losos: Well, each plot is different and so every trip had a different purpose. This was in the early days of the network. It had just...

Blanche Touhill: Oh, the Smithsonian network?

Elizabeth Losos: Right. It was called the Center for Tropical Forest Science, and when I started, I think there were about six plots and when I finished, there were eighteen. So a lot of it was dealing with these institutions and agreeing on...it's a lot of the early negotiations because each of these projects, just to set them up, it's about a two-year effort and then you have to, every five years, come back. It's about a three-year effort to set it up and every five years, another year effort of the measurement.

Blanche Touhill: Yes, you have to make sure that it's progressing.

Elizabeth Losos: Exactly, and you don't want to just jump in. You have to make sure you have the money and some of it is grant funded and some of it is funded by (agencies?). You have to make sure you have enough money. You don't want to start a project and then have it drop. You have to make sure you have the right partners, people who are going to carry through, and then there's issues...something that's changed enormously since I started this was sharing. These are massive data sets that include massive collaborations. In the olden days, ecologists who would go out and study would go out in small teams or with their graduate students, maybe a few collaborators but their data was their data and they didn't share it. Things have turned around 180% now and a lot of it is actually pushed from NIH on the medical side, which has forced open all this genetic information and that's moved to the National Science Foundation. It's

really being pushed by the funding community, forcing, but there's been a change in mindset and it's also because most projects aren't done with single scientists and their graduate students. Now, the questions that scientists deal with, at least in environmental sciences, ecology, they tend to be bigger, often multi-disciplinary and there is an understanding and acceptance, particularly with the younger scientists that you're going to have to make your data broadly available. Unless you funded it out of your own bank account, there's an expectation that you have a short amount of time that it's yours and only yours but then it's going to need to be made accessible. Well, in this network that I was dealing with, this was in the early days of this pressure for people to start thinking more broadly and there's always this worry that any of the scientists in these different countries, Democratic Republic of Congo, Columbia, Malaysia, Philippines, they were very worried that they were putting in all the field work and the hard...and these were people who might know their trees better than anyone else in the world and they couldn't be done without them and yet you get some of these quantitative ecologists, armchair ecologists who could take their data and whip out a publication and...

Blanche Touhill: Yes. Well, researchers in the academic world are always worried about that. They do the work and somebody else comes in and publishes it.

Elizabeth Losos: Right, and so it's a fine line. Of course, if these folks didn't get funding, they wouldn't be able to do it so they have to understand the requirements of funding agencies and for the Smithsonian to get involved, the whole point of this network was sharing at least with each other because everyone was using the same standardized methodology. The whole point was trying to understand what was going on at a global level. Up to that point, no one had been able to do that because no one had these type data sets but if nobody ever released their data, it doesn't matter if it's all standardized, if you're not able to actually...

Blanche Touhill: So, do they do that now?

Elizabeth Losos: They do. It's not just, well, that was then, this is now; it's still an issue. Now I'm not there anymore so it's somebody else's worry but times have changed but there's always the worry of other people running away with your data. So that's just to say that's one of the things, when you asked, what did I do, part of it is coming up with these agreements which were fair on all sides and treated everyone with the appropriate amount of

giving them credit and advancing their careers and providing appropriate training and so a lot and so there were multi-dimensions with, these were big projects. So sometimes I would do fundraising in the countries or sometimes I would be out in the field helping select a site or seeing how it was going, different levels. That's always the fun part. So, it was fascinating for me to see these tropical rain forests in different parts of the world: the Amazon versus the Southeast Asian big dipterocarps forest of Borneo versus in the middle of the Congo basin. But equally interesting were the research teams because culturally...I mean, they're all doing the same thing but culturally it's all handled in a very different way and so the team from Sri Lanka...the team from Sri Lanka was one of my favorite groups of people. It was a husband and wife team and the wife was a real dynamo. The husband was a little more politically...he did a lot of the university politics but she was just a really brilliant scientist and a real leader. They didn't have any kids for various reasons but they treated their students like their extended family and, boy, people would do anything for them. This woman, her name was Savi Gunatilaka and she had, you know, her Sri Lankan dress and I would go out...I remember the first time I went out to the field with her, it was in Sri Lanka and it was one of our wettest forests. It would get five meters or 15 feet of rain a year and the topography was like this, so you can imagine with that much rain and that steep of slopes, it was an incredible place to try and walk around and they had leeches. So I come with my leech socks and my boots and everything in preparation for the leeches and as soon as I walked into the forest, the leeches just would...kkklp...they just...and you try and ignore them and then you can't and you start to pick them off and then pretty soon you're going crazy and she could see that I was really...

Blanche Touhill: ...suffering.

Elizabeth Losos: Meanwhile, so Savi Gunatilaka, the head female researcher, she went out, she was wearing a loose dress that looked like a potato sack, flip-flops and bare legs and she put carbolic soap on her legs, soaped up her legs in carbolic soap. It turns out that the leeches can't really take hold and she just waltzes out there in her flip-flops but she was just an incredible scientist, incredible force on that side. And then another interesting group was, we had a very small...our Asian headquarters was in Singapore and we decided to put it in Singapore because they have almost no rain forest so there wouldn't be fighting as to which country got...but they do

have this little national park in Singapore called Bukit Timah which as a proportion of the country, is very large but, of course, the country is just an island and so we had a small two hectares as compared to our typical 50 hectare. And the research teams that we always get in Singapore are always all female and it's really interesting and, actually, in Malaysia, they tend to be mostly female as well. And those female teams are almost always more accurate than the male teams which the male teams come more from forestry schools and they're a little more into the sort of brute force but we get these female teams and we find that the accuracy has always been extremely high. So we had this nice little female-only team in Singapore which was a real delight. I can go on and on. We had a group in Ecuador. There we worked with the Catholic university; in Sri Lanka we worked with a university; other places like Malaysia, we worked with the Forest Research Institute.

Blanche Touhill: What have you gained out of all that? What information have you gained?

Elizabeth Losos: Scientifically?

Blanche Touhill: Yeah.

Elizabeth Losos: Well, the big question is why are tropical rain forests so much more diverse than temperate rain forests?

Blanche Touhill: And what's the answer?

Elizabeth Losos: Well, there's two parts to the question: Why are they so much more and how do they maintain it, so if you go into a forest in Missouri or in the northeast where I live, the southeast, you'll have two or three species that just dominate and in the tropics, why don't a couple of species dominate? And the answer is, nature isn't simple. Everyone's looking for the silver bullet but it seems to be a series of issues. One of them is that pests keep populations down. There are more pathogens, insects, molds in the tropics because, in part, they don't...there are a variety of reasons but the biggest is probably there's no winter. They don't have to deal with winter so you get a proliferation of different pathogens and a lot of them become specific to individual trees and so what happens is, if any one tree starts to become more common, these pathogens will knock it back. So you get many more because anyone who tries to become more common gets pulled back and so it turns out, if you have a seed or

seedling, often you're going to do better here than you are right underneath, very close to the mother tree because there are all these seeds or seedlings around the mother tree which is also attracted all the pathogens but if you can escape it over here, you have a much better chance of escaping the pathogen. So that seems to be...if there's one issue that probably is the biggest one...but there are other confounding issues but winter and pathogens are probably...

Blanche Touhill: And when you have winter, then the pathogens die...

Elizabeth Losos: Well, you just don't get as many of them.

Blanche Touhill: And that means that certain trees then can dominate?

Elizabeth Losos: Yes, if they have fewer pathogens, yup, and also, when you think about a tree, a tree in the temperate zone also has to figure out how to deal with winter, which is not easy. Well, all animals and escaping the need to having to deal with winter is a big release, and, in fact, in the tropics, as you go up altitudinal gradients, you'll also see species' diversity go down and that's also going to colder and colder climates as you go up into the mountains.

Blanche Touhill: So then what did you do?

Elizabeth Losos: So, I was in that job for 12 years, a little less than 12 years and then I moved to the organization where I am now, the Organization for Tropical Studies. I'm the president and CEO and it's a consortium of about 55 universities and research institutes, including Wash U, UMSL, Missouri Botanical Garden, but also all over the U.S. and also we have institutes in Costa Rica, South Africa, Peru, Mexico, Australia.

Blanche Touhill: And what do they do?

Elizabeth Losos: Our mission is to promote research, education and the responsible use of natural resources in the tropics. We operate three biological research stations in Costa Rica.

Blanche Touhill: And these universities come down and use those facilities?

Elizabeth Losos: Right. They are members, they're paying member institutions and they will send their researchers, send their students to use that. We also run graduate and undergraduate courses, semester abroads.

- Blanche Touhill: Do you put them online?
- Elizabeth Losos: We have started to. It's an intensive field-based program and so it's all about getting people into the field and, in fact, we developed essentially experiential learning 51 years ago and we think we pioneered it. Of course, now everyone talks about hands-on learning but we were doing this 51 years ago and we have our...it's called the OTS Education Model and it's still considered for field-based ecology, sort of the gold standard and, while everyone associates it with the tropics, people do OTS style courses anywhere in the world. It's really about teaching students how to do science by having them do science.
- Blanche Touhill: Go into the field?
- Elizabeth Losos: Exactly, they will go...our fundamentals course, the flagship course...
- Blanche Touhill: Do you have undergraduates as well as graduates?
- Elizabeth Losos: Right, so we started for 51 years we've been training graduate students. For the last 20, we've added on undergraduates.
- Blanche Touhill: I can see how an undergraduate student who might not go into science but who really has an interest in science and would really enjoy that.
- Elizabeth Losos: Yup, and we now have our undergraduate courses, we have three full semester programs, one in Tropical Biology in a Changing World, which is tropical biology and conservation. We have one in Global Health, which really looks at human environmental health, and then we have a third one in South Africa, in Kruger National Park and throughout South Africa in African Ecology and Conservation and those second two programs have particularly strong components on all sorts of aspects of science and society and they're all science-based programs but a lot of these students go on to do all sorts of amazing things and many of them come back to South Africa or Costa Rica, a lot of these students and, I don't think it's just us, but a lot of students say that that semester, undergraduates, was the most important.
- Blanche Touhill: Yes, I can imagine.
- Elizabeth Losos: When I first took this job, one of the things that really struck me was...we just celebrated our 50th anniversary last year so it's a very old organization and when I first took it, I had people coming up to me and

thanking me for changing their lives. Some of these people were 20 years older than me so they clearly were not meaning me, but these are some of the leaders in our field and what is amazing is there are these folks who can remember 35...40 years ago, an eight-week period where they say, "That was it; that was the eight weeks that put me on the course which has essentially defined the rest of my life," and they will come up and thank me for it. Of course, I say, "You're welcome." But our organization really depends a lot on volunteers. Our graduate courses, we're always bringing in, we're doing specialty courses where people will teach the courses or come as resource faculty on the courses. They're not paid. We cover their expenses but they don't come for the money; they come, in part, because they just have such an attachment to OTS and want OTS for them, in their career.

Blanche Touhill: How did you get that job?

Elizabeth Losos: Well, if you're involved in tropical ecology, tropical conservation, you've had some experience with OTS. Everybody has and so I, of course, knew it and I had taught some courses for OTS while at the Smithsonian for policy makers. OTS also does courses for staffers on the Hill, bringing them down for a week, and people in agencies, U.S. agencies, they're called U.S. Policy Maker Course and I had taught some of those in the '90s and knew a lot of the folks. So they were looking for a new president and I knew the head of the search committee who was at the Smithsonian at the time.

Blanche Touhill: Is that the one you talked about before you knew people on the search...

Elizabeth Losos: No, that was a different...

Blanche Touhill: That was a different one.

Elizabeth Losos: That's right. It always helps to know people on search committees.

Blanche Touhill: So this time, you knew...

Elizabeth Losos: So this time I knew the...

Blanche Touhill: ...head of the search committee?

Elizabeth Losos: Right. So new search committee but I knew them too. So, he invited me to lunch and he said, "I'd really like you to apply for this job" but it was

based at Duke University and I lived in Washington, D.C. My husband was working on Capitol Hill. So I said, "Well, I really want to find someone great for OTS" because I had really appreciated the organization but really wasn't interested in moving. I said, "Well, can you move the organization to Washington? Why don't we move it here. Wouldn't that make more sense than North Carolina?" and he said, "Well, if you take the job, you can convince the board in a couple years to move it to Washington but we can't move the organization." It's headquartered there but their staff, in Costa Rica and South Africa, the staff is about 230, of which about 15 are in North Carolina. So, I gave him a bunch of names of people I thought that they should consider. But we kept having lunch and before you know it, he convinced me to just go down to Duke University and just take a look and I went down and Duke University is modeled on Princeton. When they built it, they literally took the Gothic architecture from Princeton and they built a chapel with the exact same, except they made sure it was a foot higher so it would be a little higher, and they put limestone steps so it would quickly (rub down?) and I looked around, I said, wow, I really liked graduate school. This seems more familiar than I thought. So, slowly they started...and then they took me down to Costa Rica to see stuff and interview down there but my husband...this was during the elections...my husband was working for a blue dog Democrat from Texas. This was the 2004 elections and, without going into too much detail, essentially his member of Congress had been re-districted out of a job. This was the Tom DeLay.

Blanche Touhill: I remember. Oh, my, that was the Tom DeLay, oh.

Elizabeth Losos: Yeah, he had managed and later he actually lost a court case but they never went back. And so my husband was going to be out of a job after the election because he had this wonderful member, he was on the Homeland Security Committee. So he said, "Well, all right, we'll take a look." So he came down to Duke but he also was pretty well positioned for the President Carey Administration to get a nice job. So he said, "You know, if Carey wins..."...this was his big opportunity and so I told the search committee, I said, "Well, look, it really depends on my husband's...if John Carey wins, I think we're probably not interested but if not, then we'll take a further look." So the head of the search committee said that his wife said, "I don't care about OTS. I do not want George Bush for four more years." But anyway, it turns out we didn't get a Carey

administration. So a few weeks later, we both went down and within three weeks of my husband...that's when we went down to Duke...within three weeks he had an amazing offer at Duke to set up a new Center on Homeland Security and Terrorism between Duke and UNC and they had a research institute called RTI, the Research Triangle Institute. So, at that point, it seemed like it was fate.

Blanche Touhill: Yes.

Elizabeth Losos: So we never knew we were headed south but, lo and behold, and so we've been there, it'll be 10 years next spring.

Blanche Touhill: Isn't that interesting?

Elizabeth Losos: Yeah, and so, you never know where these things...so each of these jobs really combined my interest in science and ecology but also, they're all very focused and increasingly on impact of climate change in particular but also the bio-diversity crisis and trying to provide information to policy makers to really merging the science policy nexus, which is where much of my personal interests...there's a lot of administration which is sometimes more fun than other times so that's what I've been doing for the last 10 years.

Blanche Touhill: And you've been expanding?

Elizabeth Losos: Yup, we're always looking. We're just right now going through another strategic plan and we have some new directions and two days are never the same in my job.

Blanche Touhill: And there's great interest in the academic world in this tropical ecology.

Elizabeth Losos: Yup, and right now, the interesting issue really is this question of are tropical rain forests going to be a source or sink for carbon in the coming decades.

Blanche Touhill: Oh! Say that again.

Elizabeth Losos: Are tropical rain forests going to be a source or a sink for carbon in the coming decades, because we always hear about the Amazon being the lungs and we've grown to expect the oceans and tropical rain forests of absorbing a lot of carbon but we don't really know the extent to which that is true. Moreover, there's research that is happening in one of our

biological field stations – it was the first research - it's been out now for over 10 years but they continue to expand it and replicate it in other sites that have shown that as the temperature goes up, which is going up because of global warming, the rain forests are actually absorbing less and less carbon and what they're finding is it's really two reasons: you find two close coordinates, those years that are particularly high because, just like here in St. Louis, some summers are incredibly hot and others are much milder but it's not just the average temperature; it's the temperature in the nighttime. Those years where it doesn't cool down as much, and when you think about it, all rain forests photosynthesize but they also respire and when they're respiring, they're letting off CO². When they're photosynthesizing, they're absorbing. When it cools down in the nighttime, they stop respiring as much. But if it stays hot, they can't...of course they don't photosynthesize in the nighttime, there's no light but if it remains warm, they'll continue. It's like, if you think of a dog in the middle of the summer outside on hot pavement, "Huh huh huh," he pants because it's hot and the forests do the same thing, so if it doesn't cool down in the nighttime, they don't turn off the respiration and therefore they continue to produce carbon dioxide. They're not absorbing as much through the photosynthesis and it seems that the photosynthesis at higher and higher temperatures plateaus and even will even start to go down if it gets too hot, like if you put a house plant next to a window, the leaf that's too close that kind of gets burnt will just brown and die. The same thing, if it gets too hot photosynthesis but respiration seems to just continue to go up the hotter and hotter. So that's one thing, is the heat, and the other is rainfall. Those years that are dry, the forests also don't absorb as much carbon and it doesn't appear to be just average wet; it's those years that have a very severe drought. So it's not just average rainfall; it's a really severe drought has a big impact on tree growth which means less absorption of carbon. And these big global climate models that policy makers are basing...the inter-governmental panel on climate change just put out another set of reports and what they're finding is these models have not...they're too big terrestrial eco systems, that they're like black boxes in these models and they could really swing the models in various directions. One of them is in the Arctic where change is happening the fastest, and the other is in the tropics where there's the most productivity, where the change...they have the most available carbon and that's where you have the highest

productivity. So those are the two big areas that there's an enormous amount of interest and there are still just big question marks out there. And so these are some of the issues we're trying to address. We have these long data sets from our sites that go back 40 or more years and you just need them to understand what's happening with change. We have weather data but also tree growth data and...

Blanche Touhill: What are the long-range implications of that?

Elizabeth Losos: Well, they're a little scary. One of the questions is, at some point, could forests become a source of carbon if it is so hot that forests are respiring more than...these curves cross and that's all theoretical at this point but they could become a source and that's going to...it's what's called a "negative feedback" where the hotter it is, the harder it is for the forest to absorb more which means that's going to end up putting more carbon dioxide in the atmosphere which means it's going to get hotter and it's circular and so it's...

Blanche Touhill: Well, then there would develop more deserts, no?

Elizabeth Losos: Well, not necessarily deserts...well, in some areas, it might, in some areas, as it gets hotter but you're going to have more extreme events you would lose a lot of species; it would have a lot of negative impact on agriculture in some parts of the world but not all.

Blanche Touhill: So you wouldn't have enough water?

Elizabeth Losos: Yeah, in a lot of areas, but of course, in some areas, you'd get more flooding. So a lot of it is...

Blanche Touhill: ...the distribution.

Elizabeth Losos: The extreme events.

Blanche Touhill: The extreme events?

Elizabeth Losos: That's right.

Blanche Touhill: So you'd have more tsunamis or you'd have...

Elizabeth Losos: Quite possibly, yup.

Blanche Touhill: ...more tornados...

Elizabeth Losos: Yup.

Blanche Touhill: ...or you'd have more drought?

Elizabeth Losos: Definitely more drought. That's pretty clear. We're already seeing that, more drought and more extreme drought, more severe drought effects.

Blanche Touhill: Yes, or more extreme rain is what you're saying?

Elizabeth Losos: That's right.

Blanche Touhill: And that would affect agriculture.

Elizabeth Losos: Absolutely, yup.

Blanche Touhill: And it's global.

Elizabeth Losos: And it's global.

Blanche Touhill: So it means migration of people.

Elizabeth Losos: And it means...

Blanche Touhill: It could?

Elizabeth Losos: ...one of the worries is also that it's going to create more territorial disputes and lead to more wars.

Blanche Touhill: Well, when you have people on the move...

Elizabeth Losos: When you have people on the move and people fighting over resources...

Blanche Touhill: Or animals on the move or whatever you have.

Elizabeth Losos: Right, and fights over resources. When resources are in scarce supply...so the trick is to convince policy makers there are many things that are happening, and it's not all negative, but there are a lot more that could be done which are win/win which are going to have positive impacts.

Blanche Touhill: And how does OTS try to affect that?

Elizabeth Losos: Well, we're a science-based organization. We don't do advocacy.

Blanche Touhill: You just release your data?

Elizabeth Losos: We release our data but we try not to...we have a lot of credibility because we're a university consortium; we're science-based and we have, for example, I mentioned these policy maker courses. We regularly do it for U.S. policy makers, Latin Americans, et cetera and a lot of people have pointed out that if Conservation International did the same course, even if it was identical, people would be more suspicious of the information they're getting.

Blanche Touhill: Yes, you try to go in the middle?

Elizabeth Losos: Exactly, and we try to guard our objective credentials, our scientific credentials but we try and also really disseminate the information to get it to the places.

Blanche Touhill: Are you one of the few women that is in one of these leadership positions?

Elizabeth Losos: My field has more than many others. One of the interesting issues is if you look at undergraduates going into environmental science or doing study abroad, even more so environmental science, it's actually quite skewed towards females. And then as you go to graduate school, it's skill skewed towards females but not as much and then, of course, as you go into the higher ranks...now some of this is a timing issue. It takes time to move up but part of it is the fact that women are not always moving into the highest positions. I have colleagues, I would say my colleagues are probably three-quarters male, one-quarter female, at the very highest level positions, but there are definitely other women in environmental organizations, the head of science organizations who are very strong, impressive women.

Blanche Touhill: Are there more women in the pipeline than when you came on?

Elizabeth Losos: Yes, definitely. So I did an interesting study. My organization has been doing these graduate courses for over 50 years now and so there were some researchers who did a study in the early '80s of graduates of this program and they did a comparison of men and women and so, about three or four years ago, we decided to go back and do another study to look at young women and older women to see if there was a difference and also looked longitudinally, if there was a difference from that study in the '80s versus now in this broad area of, say, environmental sciences/ecology and the interesting thing that I found...and I did a bit of

research in the time we did a few grants on trying to get more women to sciences, I think a lot of barriers have disappeared. I think there's a lot more opportunities, say, for women to extend the tenure clock than there used to be; there's a lot fewer formal discrimination; there are a lot more opportunities to help women move on in my field, and yet, there still seems to be some barriers that women are not crossing and from our studies, what the data showed and what made the biggest impact to me (as a whole?), we looked a lot of different variables, is if you looked at women who have done well, invariably they have a husband who is taking at least up to 50% of the household or childcare chores whereas if you looked at the women who continued on, they seemed to get between 0% help and 50% from their spouse whereas if you looked at the men who continued on in science, they tended to get between 50% and 100% and so the women who are sort of getting the best are those who are absolutely splitting it, such as with my spouse. I have a wonderful spouse who allows me to travel the world. I have three daughters and one in middle school, two in high school right now and they've all been wonderful. We all moved to Costa Rica for one semester. So I'm sort of at the extreme of having a husband who's willing to take on half of the childcare, half of the household whereas you still...and I can give you many, many examples of men, including, say, my brother, sort of, who have spouses who will do up to 100% of taking that and there are lots of reasons why that is the case and I think that's going to take a while to change.

Blanche Touhill: If you had been born 50 years earlier, what would your life be like?

Elizabeth Losos: Well, I think there are some pioneers that, when I was young...I didn't bring this up earlier, but Jane Goodall is someone who has affected women's lives. I actually did my senior college thesis on the history of primatology and it really came out of Jane Goodall and a few other women at that time who were pioneering and Jane Goodall was born a good 25 years before I was and she did amazing things. I think there are other women who really were able to go out into nature, but there aren't many of them and so I think the ability as a single female, I lived in the Amazon for my dissertation for on and off over four years in a tent, having my male research assistants with me. Sometimes we were literally in the middle of nowhere. I think 50 years earlier, that would have been very hard, if not impossible, to have done, in part, as anyone because of

course...but the great adventurers who went...Teddy Roosevelt down into the Amazon in the early 1900's, you never saw women on any of those teams. So I think a lot of my personal career choice would not have been open to me at that point.

Blanche Touhill: Do you think you would have been a school teacher?

Elizabeth Losos: Perhaps. I had a love for the environment early on so maybe I would have done something in that but there are plenty of more clerical office jobs related to that.

Blanche Touhill: Do you volunteer?

Elizabeth Losos: I sit on a lot of boards of other organizations: big, small, with similar interests, yeah.

Blanche Touhill: Is there some award or awards that you've received that you're very proud of?

Elizabeth Losos: Well, not an award but probably one of the...I don't even know what you would call it, but I left the Smithsonian after being there almost 12 years, there was a big network, they gave me as a group but it was really one scientist who had discovered a new big hardwood tree in Cameroon and they named it after me.

Blanche Touhill: Oh, how wonderful!

Elizabeth Losos: Calcafillinlososi...losos siano and I just thought that was a wonderful recognition.

Blanche Touhill: Did he say why he did that?

Elizabeth Losos: Well, in honor of all the service I had given and so they actually went and they published it and you have to explain why you named the tree and so it's in the publication and it's a nice big hardwood tree and so I see that as the best sort of recognition I could get.

Blanche Touhill: Did you want to mention anything else?

Elizabeth Losos: Well, just one interesting aspect: throughout my life, I've always been encouraged to think that I could do whatever I wanted to do and have, in high school, college...the world was my oyster and I've been very successful and having felt a lot of barriers in many ways but I had five

roommates in college who I have kept very close with four of them and these were equally talented, ambitious women, and lots of female friends and I would say we all felt this sense of going out to conquer the world. What surprised me about 15 years later was how many of my female college roommates and close friends at Harvard, all talented women who decided to get off of the career track, either permanently or took time off. My four college roommates that I was close to, a couple years ago, I was the only one working amongst the four of them and if you had asked me while I was in college if I thought that my roommates would not be working 20 years from then...or I guess at that point it was about 15...20 years from then, I would have said you're crazy, and yet, there are a lot of women who were making life choices because I think it's still complicated for young women before they get married and have kids, there are a lot of complications that they're not aware that they're going to have in front of them and a lot of them make life choices and I realize now there's a whole scientific field studying these women and life choices and why society promotes certain choices. And so this is much harder than the barriers of the more...

Blanche Touhill: ...the culture in which you live.

Elizabeth Losos: The culture, but also, there are a lot of barriers that have been removed but if women are still making certain choices for many reasons, cultural and, I think, biological...

Blanche Touhill: Well, that's true, the barriers are there.

Elizabeth Losos: But it was a surprise to me but everyone is all doing well and most of them are back in the workforce.

Blanche Touhill: Did you stay home when you had your children?

Elizabeth Losos: I did not.

Blanche Touhill: Well, I want to thank you for the conversation.