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**INTERVIEWER:** David Todd

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**David Todd** [00:00:02] Okay. Well, good afternoon. I am David Todd, and I have the privilege of being on the line with Elizabeth McGreevy. And with her permission, we plan on recording this interview for research and educational work on behalf of the Conservation History Association of Texas, a nonprofit based here in the state, and also for a book and a web site for Texas A&M University Press, and for an archive at the Briscoe Center for American History, which is based at the University of Texas in Austin.

**David Todd** [00:00:39] And, I just want to emphasize that she has all rights to use the recording as she sees fit as well.

**David Todd** [00:00:47] And, I wanted to make sure that that's okay with you.

**Elizabeth McGreevy** [00:00:51] Yes, it is.

**David Todd** [00:00:53] Good. All right.

**David Todd** [00:00:55] Well, let's see. Let's get started.

**David Todd** [00:00:59] It is Wednesday, October 26, 2022. It's about 2:10 p.m. and we are working in Central Time. My name is David Todd, as I said, and I am representing the Conservation History Association of Texas and I'm in Austin.

**David Todd** [00:01:23] And, we are fortunate to be conducting this remote interview with Elizabeth McGreevy, who's also based in the Austin area. She is an ecological planner, with a degree in biology and a master's in landscape architecture. And she's worked on sustainably-oriented development, management, and restoration projects. She's very familiar and based in the Hill Country, where she has become really schooled in the issues of juniper and oak woodlands, culminating in a recent book that was well received called, "Wanted: Mountain Cedars, Dead and Alive". And I think it shows her close understanding of the habitat that's critical, in the Hill Country at large, but also to the survival of the golden-cheeked warbler that is endemic there.

**David Todd** [00:02:16] So, today we look forward to talking about her life and career so far, and especially have the opportunity to focus on her experiences and insights regarding the juniper and the golden-cheeked warblers that rely so heavily on those trees.

**David Todd** [00:02:35] So, with that little introduction, I thought we might jump into some questions. And the first one I had was about your early years, and I was hoping that you might be able to tell us about your childhood, and if there were any people or events or experiences that might have influenced your interest in the Hill Country and vegetation and junipers, and just the natural world in general.

**Elizabeth McGreevy** [00:03:01] Yeah. My, my dad was really the one who got me interested in the natural world. You know, he, he was a Republican, but he was a conservationist. And he taught me all about nature, about respecting it, being good land stewards.

**Elizabeth McGreevy** [00:03:20] And then, in the summers, we would go to Lakeway, where my uncle had a lake house.

**Elizabeth McGreevy** [00:03:26] Or, I would also go spend summers at Camp Waldemar, which is outside Kerrville, near Hunt. And while at Camp Walden was when I really became more aware, of course, about the juniper woodlands, the Hill Country, the limestone, the caves, cedar bonfires, you know, cedar fence posts. The entire camp Waldemar architecture consists of limestone and mountain cedars, you know.

**Elizabeth McGreevy** [00:03:58] And so, I was just every summer, I was just surrounded by, you know, these junipers, and limestone, in the Hill Country, along the Guadalupe River.

**Elizabeth McGreevy** [00:04:09] And, that really, you know, I grew up in Houston, but I always felt a greater love and devotion, I guess you could say, to the Hill Country.

**David Todd** [00:04:22] That's great.

**David Todd** [00:04:25] Well, so you mentioned your father. Was your mother interested in these, these kind of aspects to life, the natural world and stewardship?

**Elizabeth McGreevy** [00:04:38] No, not at all. It was not her thing. It was my dad's thing, you know, that. It was definitely all my dad.

**David Todd** [00:04:46] Mm hmm.

**Elizabeth McGreevy** [00:04:47] You know, I would spend, I would spend, you know, Sundays after church in the garden, you know, gardening with him. And my mom would be inside cooking, so she wouldn't be out there gardening with us.

**David Todd** [00:04:59] I see. And was this a vegetable garden, or a flower garden, or how would you describe it?

**Elizabeth McGreevy** [00:05:06] Well, it started off as flowers. And then I told my dad, "Hey, what would it be like if ..." I went to the nursery with him and saw all these little tomato plants. I was like, "Oh, my God. Can we, like, put these in the ground? And it will grow and make food?" I mean, you know, I grew up in the inner city of Houston, not, you know, in a rural setting. And he's like, "Yeah, let's do that."

**Elizabeth McGreevy** [00:05:29] And so, he helped me get it all together. He got the cages and everything, and we had a bumper crop. We had so many tomatoes that my poor sister, you know, it was her birthday on June 9th, and that's when all the tomatoes ripened. So my mom handed them out as party favors to all the, like, 11 year old girls. Bags of tomatoes!

**David Todd** [00:05:53] That is great. And you mentioned, just in passing, that you visited your uncle in Lakeway. And was that a chance to be on the lake or in the Hill Country woodlands or what was the experience there?

**Elizabeth McGreevy** [00:06:13] Yeah. So my uncle's a Catholic priest, and so he had bought this lake house and all of his relatives would take turns, you know, going there to the lake house. And it was on Sunkissed, which is definitely pulled back from the marina, the lake. So it was, we would, of course, then go boating down on the lake, but then we would come back, and my brother, my sister, whoever else, my cousins, we'd all go exploring the juniper / oak woodlands that, because the whole house kind of overlooked a ravine, we'd all go down into the woods and everything and hang out.

**Elizabeth McGreevy** [00:06:48] And, I loved that.

**Elizabeth McGreevy** [00:06:50] Now see, in Houston, being that so urban, I was fortunate in that our house was on the Buffalo Bayou, in Houston, and so I had that little bit of wildness and I loved it. You know, I always had an affinity towards the natural areas. It was just this natural affinity. You know, I just I felt more in tune to that than the urban life.

**David Todd** [00:07:18] Well, do you think that that early affinity was was one of appreciating the beauty or, you know, the adventure of seeing animals? Or was it just the sense of calm and peace and more of an emotional thing?

**Elizabeth McGreevy** [00:07:32] No, it was more alive to me. It was just alive, you know, near the water. You could dig your toes into the dirt, and swing from the rope swings and climb the trees. And it was, it was alive. It was active. It was ... it spoke to me, you know?

**David Todd** [00:07:54] Right. Right.

**David Todd** [00:07:56] Well, and I guess another experience that you had in the out-of-doors as a child was going to Camp Waldemar.

**Elizabeth McGreevy** [00:08:02] Yeah.

**David Todd** [00:08:03] Which I guess is, as you mentioned, on the Guadalupe River near Hunt. And tell me a little bit about that. Did you have any counselors or fellow cabin mates that shared this same sort of interest?

**Elizabeth McGreevy** [00:08:21] [Excuse me.] There was probably only one girl there. And her name at the time was Carrie Elder. She's now Carrie Kelly. And we had this love. We would, we just, we had this bond. There wasn't anyone who was really teaching me how to love nature. It's just something I did.

**Elizabeth McGreevy** [00:08:44] I was known as the lizard girl, you know? I'd go out collecting, finding lizards and, you know, exploring the rocks and the caves, while all the other girls were sitting around talking about clothes and fashion and candy and stuff like that.

**Elizabeth McGreevy** [00:08:57] And Carrie Kelly was this girl who was there who I always felt this bond with. And then, when I moved later to Austin there, I ran into her. She came to one of my lectures. She saw my name. So we reconnected. And during the pandemic, we even found out we're seventh cousins, one, you know, seventh cousins. So we're actually related.

**Elizabeth McGreevy** [00:09:19] And, it was just the setting was to make girls be proper girls. And I never fit into that role because all I could see is, "Oh, my God, we can ride horses, go

canoeing, swim in the river, shoot rifles", you know. I was just so overwhelmed by how much fun it was. And I wasn't like most of the other girls.

**David Todd** [00:09:51] Yeah. Well, distinct.

**David Todd** [00:10:01] Maybe we can go forward just a little bit in your life, and talk about your schooling. And I understand that you got a biology degree at Randolph and then went through a landscape architecture master's program at Texas A&M. And I was curious if at any point during that trajectory, if there might have been teachers or classmates who, again, might have been an influence in your interest in the outdoors and conservation, or more specifically, the Hill Country and to juniper woodlands?

**Elizabeth McGreevy** [00:10:40] Yeah, Nancy Charbonneau was one of my classmates and, you know, it was a graduate program. So our classes were small. We had like 12 of us in the class. And Nancy was from Austin, Texas A&M, at the time. I don't know. I think they are now. But at the time they were not teaching us about native plants. They didn't really teach about the hill country or anything like that. Definitely not about junipers. But Nancy Charbonneau taught me about the importance of embracing native plants.

**Elizabeth McGreevy** [00:11:16] And, she would just go on and on and on about how great Austin is, the Hill Country. And she invited all of us at one point to her house in Austin. So we all went there and she lives just nestled in juniper-oak woodlands. It was probably her passion that really got me excited and started, got, you know, piqued my interest in really focusing on native plants.

**Elizabeth McGreevy** [00:11:39] It was something I had had all along. Like when, when I was a little girl, since I think sixth grade, we were given a project, a botany project, where we had to collect the plants and things like that from around from around us. While everyone else was collecting the bougainvillea, the gardenias and all that, and I was out there in the ditch, collecting the native plants, you know, the ones that were just coming up naturally, that, that's what I collected.

**Elizabeth McGreevy** [00:12:08] And so, I never really had a name for it, you know. And Nancy really directed me, kind of pulled me in that direction. She was definitely a kindred spirit, I guess you could say.

**Elizabeth McGreevy** [00:12:21] And, and later when I did, after graduation, about four years later, she was the one who called me and said, "Elizabeth, there's an opening with J. Robert Anderson, landscape architect, here in Austin. I've just gotten a job at the LCA. So, I am leaving and you need to move to Austin, so you can go work with Bob."

**Elizabeth McGreevy** [00:12:44] So, she was kind of like my little early mentor, you know? So, she, she got me, she got me to Austin.

**David Todd** [00:12:51] It's nice to have those folks that are guides and ...

**Elizabeth McGreevy** [00:12:56] Yes.

**David Todd** [00:12:57] Supporters.

**David Todd** [00:12:59] So, you know, a lot of folks get a great deal out of their, their childhood and their family and their formal education. But, it seems like often just the general culture, you know, books and films and TV shows, are influential, too. And, I was wondering if there were any, you know, sources there, influences there, that that might have been important for you.

**Elizabeth McGreevy** [00:13:32] Hey, David.

**David Todd** [00:13:33] Yes.

**Elizabeth McGreevy** [00:13:36] Can I add another thing to the previous question?

**David Todd** [00:13:39] Absolutely. Please do.

**Elizabeth McGreevy** [00:13:40] I just suddenly realized something that, I don't know why it didn't hit me earlier, is that there was another student, and his name was Sean Michael. And he had just gone through a program called the Tom Brown Junior Wilderness Survival School. And he shows up in our graduate program. And he was just wild. And he just, he latched on to me, and he got me. You know, I grew up in Houston being, like I said, very urban. And as much as I loved the nature part, I was still afraid to totally embrace it. And he was a one.

**Elizabeth McGreevy** [00:14:19] And, you know, when at the turning point, when it happened, is when, here we are at Texas A&M, very conservative campus. Right? He made me get all my stomach in the middle of the campus and look underneath a row of shrubbery and to tell me what I saw. And I got down. I was so embarrassed. You know, all these people looking at me. I'm like, "I don't want to do this". And I finally got down, and I looked in.

**Elizabeth McGreevy** [00:14:48] I said, "Oh, my God, it looks like a, like an ancient jungle or something". Because all the, the lower trunks of the shrubs and all that were all twisted and gnarled and all that. And there's all this debris. It looked like an ancient forest.

**Elizabeth McGreevy** [00:15:05] And, him forcing me to go down and to look at things a different way was definitely opened up a huge door for me. And really also helped start me going in that direction.

**David Todd** [00:15:19] Isn't that interesting, that sometimes a lot of this is just having a different perspective?

**Elizabeth McGreevy** [00:15:24] Absolutely.

**David Todd** [00:15:26] From your belly, on the ground.

**Elizabeth McGreevy** [00:15:30] Everyone going by saying, "Did you lose your contacts?" No.

**David Todd** [00:15:42] Well, thank you for adding that.

**David Todd** [00:15:45] So, should we go ahead with that other question?

**Elizabeth McGreevy** [00:15:49] Yeah. Okay.

**David Todd** [00:15:50] Well, how would you address that question of the sort of cultural artifacts of books, TVs, shows?

**Elizabeth McGreevy** [00:15:59] Yeah. So, so, so besides Nancy Charbonneau and Sean Michaels, students, Dr. Jonathan Smith, I decide, "Okay, I have to take an elective. What am I going to take?" Well, someone said, "Well, why don't you take a class over in the geography department, which is on the other side there?" And, I decided to take cultural geography.

**Elizabeth McGreevy** [00:16:24] And I walked in, and Dr. Jonathan Smith was the professor, and one of the first books he had us read was "The Sacred and Profane", by Mercia Eliade, which is all about cosmos versus chaos, and people's perceptions, and how, and even gave an example in the book of how, when like, when a developer buys a new property, they'll view it as "chaos", and then they'll bulldoze everything to make it, "cosmos", to make it be what they want it to be.

**Elizabeth McGreevy** [00:16:55] And that really opened my eyes, because I started to realize, well, is the chaos actually valued? Does it have value?

**Elizabeth McGreevy** [00:17:02] And, and then he had us read another book called "Discovering the Vernacular Landscape" by J.B. Jackson. And there it teaches you vernacular, meaning the commonplace, the everyday things, you know, not the fancy things, but the everyday things, of how to view the value of these mundane, commonplace things.

**Elizabeth McGreevy** [00:17:26] And, it got me to kind of rethink how I view. You know, so, I had, with Sean making me look at the ancient jungle under the bushes and, you know, Dr. Smith getting us to read these amazing books, you know, really teaches you, kind of makes you push the reset button in how you view the world, to remove biases.

**Elizabeth McGreevy** [00:17:53] And then, I came across two fantastic books later. One is, "1491", by Charles Mann. The other is, "The Ecological Indian", by Shepherd Krech. And both of those were talking about, you know, we had this view that, oh, virgin wilderness, but nothing is virgin because the Native Americans were out there. You know, they were working, they were managing. And it talks about how they were managing and how they were making it be what we saw when we, when we came here, like 1400s, you know, 1500s, 1600s. You know, it was a result of a lot of what they had been doing. It wasn't just the animals alone.

**Elizabeth McGreevy** [00:18:39] And, that integration of the humans, of how humans help, you know, ecologies to evolve was incredibly fascinating to me.

**Elizabeth McGreevy** [00:18:52] And then, I, when I started expressing interest in the junipers, which is, came when I was working as a, a volunteer trail guide at the Wild Basin Wilderness. And this was like 25 years ago, shortly after I moved to Austin. And, Mike Casper, who was there, he heard about ... I started asking questions about the mountain cedars, you know, that's what they're called around here, you know, the juniper trees.

**Elizabeth McGreevy** [00:19:19] And, he started to, you know, point me in the right direction. And to say, you know, a lot of these are actually just myths and tall tales and things like that. And he said, you need to talk to Brother Daniel Lynch, biologist at St. Edward's University. And Brother Daniel Lynch got me to read the Explorers of Texas, volumes one and two by Del Wineger, which is mind blowing.

**Elizabeth McGreevy** [00:19:50] I don't know if you've read that book, those books, David, but you know, Del Weniger, he went through all these, like, reports since the 1600s - witness trees and everything - and piecemealed together what this, what Texas used to look like, you know, before we came in and, you know, the Industrial Revolution had its impact and things like that. That that was just mind-boggling. Just, you could start to put it together, you know, the image in your head of how much damage that we have caused and how it is so changed.

**Elizabeth McGreevy** [00:20:29] But, what I really liked was reading "The Adventures of a Frontier Naturalist", by Gideon Lincecum, I think that's how you say it. He - a lot of the reports and journals written by people - they were traveling on the well, on, like, the regular trails, like the roads and all that. And they would report what they saw from there.

**Elizabeth McGreevy** [00:20:51] Only a few people went and trail-blazed. He was a trailblazer. And when you get the trailblazers, you're getting the fresh, raw stuff, the wild stuff. And he was the one who was writing about black bears in the thickets, about the buffalo stampeding through the forest in the Hill Country. You know, that, that they were coming through. And, it was just amazing.

**Elizabeth McGreevy** [00:21:20] What impacted me the most was when he was talking about traveling through the the blackland prairie, I think it was, and he saw a huge flock of trumpeter swans. Now, what we don't understand, you've read reports probably about passenger pigeons that would, you know, darken the skies whenever they flew above because there were so many of them. Well, it wasn't just passenger pigeons. There were so many animals everywhere.

**Elizabeth McGreevy** [00:21:47] And, he gave this little analogy, because he said that he was hungry, and he saw two deer in the distance. So, he raised his gun and shot one of the deer. And, that caused all the trumpeter swans to fly up all together and swirl around him. He said it was like being in the middle of a tornado.

**Elizabeth McGreevy** [00:22:06] You know, we just don't have that many animals anymore. And that has also has had a, you know, devastating impact on maintenance of our landscapes. And so that got me really thinking about the whole ecological network, you know, about how everything comes together.

**Elizabeth McGreevy** [00:22:24] But the last two books I read, not last two, but two other books that were noteworthy, was "Voice of the Coyote" by Frank Dobie, and "Eager About Beavers" by Ben Goldfinch.

**David Todd** [00:22:39] Goldfarb?

**Elizabeth McGreevy** [00:22:42] Goldfarb, yes, sorry, by Ben Goldfarb.

**David Todd** [00:22:47] Yes.

**Elizabeth McGreevy** [00:22:47] And, they both took topics, coyotes and beavers, that most people, they try to shoot, kill, get rid of them. Right? And they tried to show how they actually have a purpose. They have a role in our ecosystem.

**Elizabeth McGreevy** [00:23:00] And, reading those books really gave me that, more focus and inspiration, to write this book about Mountain Cedars. It's kind of the same thing, that people

see it as the enemy, something to come back and fight. And that they do have a purpose, a role. And it's time for us to rethink the trees.

**David Todd** [00:23:22] That is fascinating, that there are all these views that it seems like you've gotten exposed to, whether it's the, you know, the ecological Indian that, you know, was manipulating the landscape, or it was the trumpeter swan that was reacting to, you know, somebody firing a gun in the early days or the coyotes and beaver that were maybe neglected or ignored or slighted in some way, but still had an important role to play.

**David Todd** [00:23:59] And, it sounds like it all may have led into, you know, the, I guess, the background that you have for your career. Can you get us started with that? I think that, you, you've worked as a planner and educator and a researcher, how did that start for you? Sounds like you, you've been doing this for, gosh, a quarter of a century now.

**Elizabeth McGreevy** [00:24:28] Yes, I have. As you mentioned before, my undergraduate was biology. Back then - so I graduated in 1987 - back then, there were no degrees in ecology. And so, I didn't really know about ecology as really a thing, but I kept taking courses that, when I look back on it, were definitely ecology-oriented. Whereas a lot of people who are doing their biology degree go towards medicine, I kept taking classes like animal behavior, you know, and I did take, actually, plant ecology, you know, and other forest ecology classes in my senior year, even taking astronomy, you know, that that is about, you know, ecology as well.

**Elizabeth McGreevy** [00:25:23] And, that continued through my graduate education at Texas A&M, where I took more, like, ranch ecology, landscape ecology and, you know, other courses. So that just built up.

**Elizabeth McGreevy** [00:25:36] So, basically, between my undergraduate and graduate, that's how I am an ecologist.

**Elizabeth McGreevy** [00:25:42] But, when I started doing, when I graduated with a master's in landscape architecture, you know, I wanted to approach landscape planning as an ecologist, not just as someone to just sit there and put pretty flowers around. You know, I wanted to be able to do things at different scales that could help reestablish ecological function.

**Elizabeth McGreevy** [00:26:10] But, again, there was no degree for sustainable development or ecological planning or anything like that. So I kind of piecemealed, created my own path.

**Elizabeth McGreevy** [00:26:19] When Nancy Charbonneau told me to move to Austin, that was to work for J. Robert Anderson, landscape architect. The first project I worked on with him was the Lady Bird Johnson Wildflower Center, and that was in 1995. And Anderson was very pro-ecology. He completely embraced native plants. And so I was fortunate.

**Elizabeth McGreevy** [00:26:39] Thank you, Nancy, for linking me up to Bob Anderson.

**Elizabeth McGreevy** [00:26:44] And so, I was able to do that. And, for a while it was really strong.

**Elizabeth McGreevy** [00:26:49] And then, I broke off and started doing my own ecological planning, mainly because I just wanted ... He was dealing with very large clients, you know, like Lady Bird Johnson Wildflower Center, you know, Baylor University, you know, things like that - larger clients.



**Elizabeth McGreevy** [00:27:05] And, I wanted to focus more on smaller landowners: really get out there in the Hill Country and start doing consulting and things like that.

**David Todd** [00:27:18] Well, I guess these ideas of restoring ecological function work at all scales, whether it's ...

**Elizabeth McGreevy** [00:27:25] They do.

**David Todd** [00:27:26] You know, something as big as the Wildflower Center or somebody's individual ranch or home.

**Elizabeth McGreevy** [00:27:32] Yeah, absolutely. You can do it.

**Elizabeth McGreevy** [00:27:33] I mean, in my own backyard here - I live on, you know, your typical quarter-acre lot - and my backyard I've rewilded. And, it's just amazing to see what's happening and how sustainable it is, how it can handle the Texas freeze. It can handle the heat, the droughts. It's very resilient.

**David Todd** [00:27:53] Well, there might be something to that the folks can relate to is how your home has been rewilded, as you said. You know, well, maybe you can give us some examples of the ways that you've thought about it, and the plants that you've used.

**Elizabeth McGreevy** [00:28:11] Yeah. So I moved into this house about 12 years ago, and for the most part, you stop mowing.

**Elizabeth McGreevy** [00:28:20] And, there was three little trees, a little row of Indian hawthorn. And Indian hawthorn died after the first year because it needs to be irrigated. It's not native, it's obviously native to India.

**Elizabeth McGreevy** [00:28:35] But, it's, it's about improving the soil and broadcasting seeds. I planted a few things, but the truth is most of it came up on its own.

**Elizabeth McGreevy** [00:28:47] Now, for one, I am fortunate, even as compacted as my yard was, I do back up to the Goat Cave Preserve. And so therefore, there is a lot, there are a lot of, there's a lot existing vegetation for birds and things like that to bring the seeds in. And so, a lot of it was just rewilding on its own, with me very carefully managing, because, you know, I wanted to have some trails and pathways, or where things were growing too close together.

**Elizabeth McGreevy** [00:29:16] So, it's about, just kind of like, it's about rethinking how you manage. No longer is it, "Oh mow every Sunday". Instead, you just, kind of, nibble here and there. You know, kind of, take out a little bit here. I have a little vegetable garden over here, a deck over here. You know, you just, it just, it's just, it's a little more, I guess you could say, "organic" approach. But just as enjoyable.

**Elizabeth McGreevy** [00:29:43] Sure. Sure.

**David Todd** [00:29:46] When you think about, you know, the big projects that you worked on with Bob Anderson and then the larger, I mean, rather, the smaller projects that you've worked on, say, individually. Is there some sort of a theme that runs through all these different projects, that could describe your attitude, or what your goals are maybe?

**Elizabeth McGreevy** [00:30:19] I don't know if you're aware of Ian McHarg, who, he was a landscape architect. He designed The Woodlands, which is north of Texas, of Houston, I'm sorry. And his whole approach to development was to embrace nature as much as possible. To be as, you know, to intrude as least as possible, you know.

**Elizabeth McGreevy** [00:30:47] But, also for me, it's not just about that kind of approach, but there's follow through. You have to follow through. You have to improve the soil. Some areas, people in Texas, you know, United States, wherever, people might have actually pretty good soil. But here in the Hill Country, most of our soil is really thin. It's extremely degraded. So an ongoing, non-Indian thing is that you also have to restore the soil. You have to regenerate it, to increase organic matter, carbon, seed. And so that is kind of a consistent thing with every client I've done.

**Elizabeth McGreevy** [00:31:25] And, but, the whole purpose of that is to move the water. You want to sink as much water into the ground. That really is the overriding goal for the regeneration part of it, is to maximize how much rain will soak into the ground, because the benefits, you know, that decreases erosion, decreases downslope flooding, reduces fire risk, increases groundwater storage capacity, increases biodiversity and resilience down the road, so there's lots of benefits to that.

**Elizabeth McGreevy** [00:32:01] And, for decades, we were taught, through junipers and brush, is to remove them to maximize overland flows. But that's only led to desertification. So what I work on doing is to reverse that, to get that water back in the ground.

**David Todd** [00:32:21] Well, this might be a good segue to talk some about juniper which is clearly a tree that's, you know, held your interest for, for decades and for, for those of us who live in central Texas, it's a big part of the landscape. And for those of us who are working on trying to understand more about wildlife, it's been just, of course, critical to the golden-cheeked warbler as well as other creatures.

**David Todd** [00:32:48] But I thought maybe you could talk a little bit about the Mountain Cedars and the Juniper says as they play a part in the Hill Country.

**Elizabeth McGreevy** [00:33:01] Which question are you on?

**David Todd** [00:33:04] Well, I guess I'm talking about junipers and golden-cheeked warblers. And, before we get too much into the warblers, maybe you can talk about the junipers themselves. These are Ashe junipers. Is that right?

**Elizabeth McGreevy** [00:33:20] Yeah. I see what you're saying. Okay.

**Elizabeth McGreevy** [00:33:21] Yeah. So as I kind of have flip-flopped back and forth, you know, I call them mountain cedars and juniper. Juniper: they're in the juniperus genus, and the common name for juniper is just junipers. [Excuse me.] The reason I call them, "mountain cedars" is because when the pioneers first got here in the mid-1800s, they were calling them "mountain cedars" to indicate that they were different from eastern red cedars.

**Elizabeth McGreevy** [00:33:53] And, the word, "cedars" is just a common word. It's like calling all soft drinks "Coke", you know, or all tissue, "Kleenex". You know, it's, it's just a thing. And it's because they all had this same cedar-like aroma as the true cedars that only grow in

Europe and Central Asia, like the Cedar of Lebanon, the Deodar Cedar. Those are all true cedars. And there's only four in that genus.

**Elizabeth McGreevy** [00:34:23] Many more species of juniper and they, they grow these days, they're growing more often as bushy, like they look like bushes. And they form these thickets, vast thickets, that seem to grow everywhere.

**Elizabeth McGreevy** [00:34:46] But, historically, they grew more on the, probably more on the more shallow soils. And they grew as tall trees - trees that could be used as, you know, even telegraph poles and telephone poles. They were used for foundation piers, roof rafters. So they were long. They were tall.

**Elizabeth McGreevy** [00:35:11] And, everything has changed, you know, those forests. And they grew inside of old-growth juniper forests that were called, "cedar breaks".

**Elizabeth McGreevy** [00:35:25] The thickets we see today are just thickets. They're not cedar breaks. They're just thickets.

**Elizabeth McGreevy** [00:35:31] Or, you would have them growing juniper-oak woodlands and forests.

**David Todd** [00:35:39] And so, I guess one of the denizens of these juniper woodlands, these mountain cedar lands, was the golden-cheeked warbler. And can you introduce us to how the two sort of co-evolved, or how they they're interdependent?

**Elizabeth McGreevy** [00:36:01] Yeah. You know, I first learned about, I first really got exposure to the golden-cheeked warbler when Dean Keddy-Hector, who was with Parks and Wildlife at the time, took me out to Nameless Road near Jonestown, and took me to a day of tagging, of calling in the little warblers and tagging them. So I got to touch one and hold one. Beautiful, beautiful little songbirds. Texas natives. Very, very pretty.

**Elizabeth McGreevy** [00:36:32] And so, he, he, he was the first to really start telling me a lot of this information.

**Elizabeth McGreevy** [00:36:36] And, I learned more from Chuck Sexton and then from other people like Lisa O'Donnell, with the city of Austin.

**Elizabeth McGreevy** [00:36:44] Is the main way that they are connected is that the warbler, it's a small bird, and it makes its nest using spider webs as the sticky part and the peeling bark of the older mountain cedars and nothing else. That's it. These little tiny little nests. They cannot use the bark of the younger mountain cedars, like the bushy ones, because it's too sticky and they can't pull the bark off. And once the trees are about 30 to 50 years old, they stop being sticky, and that's when the bark starts to come off.

**Elizabeth McGreevy** [00:37:25] And, that stickiness relates to the heartwood of the tree. And it's when the heartwood matures inside of the tree that the sap stops producing so much sap which creeps out of the bark and makes it sticky. So, when the sap stops, the sap stops being so sappy, the bark can start to shred.

**Elizabeth McGreevy** [00:37:50] And, that's why people will say, and at that point then, these junipers are called, are growing in what's called, "old growth". Now they are, they're actually

mature. And because the word, "old growth", really refers to a forest that's at least been around for at least 250 years old. And it can get confusing because the trees also sexually mature around ten years old. But that just refers to the pollen and the fruit.

**Elizabeth McGreevy** [00:38:21] The heartwood maturing is the important thing when it comes to the warbler, because, like I said, that's when it allows the bark to peel off.

**Elizabeth McGreevy** [00:38:30] And the other relation is that a lot of people talk about how the warblers are out there just feeding on the oaks, you know, the little caterpillars that hang by threads from the live oaks in spring. And they do. They're fantastic for helping to control all these insects and caterpillars.

**Elizabeth McGreevy** [00:38:49] And, but then in late spring, there's a whole flush of caterpillars and insects on the junipers. And so the warblers then turn to the junipers and start feeding there.

**Elizabeth McGreevy** [00:39:01] So, it's more than just the bark. It also becomes an important, you know, source for foraging.

**Elizabeth McGreevy** [00:39:07] And, the warblers ... You know, remember I was talking about these old-growth forests that we used to have, the old-growth cedar breaks and all that. Well, they were very extensive in size and they were continuous. They were not fragmented and broken up in little pieces and patches. They were continuous. And the warbler needs that in order to hide deeper in the forest so that the prairie birds and species, like the cowbird, cannot find their nest.

**Elizabeth McGreevy** [00:39:39] But the thing is, the golden-cheeked warbler is endangered. But, I like to really consider more like the canary in the coal mine. Because, if you have a healthy population of these golden-cheeked warblers, it will also mean that your old-growth forests are very healthy, so it indicates forest health.

**David Todd** [00:40:01] So you've said, I guess in reference to, several times, about how these early woodlands, junipers, might have been seen by, you know, early settlers and pioneers. Can you sort of pack this together and tell us a little bit more about how the juniper woodlands, these mountain cedars might have looked, let's say, well before most Western settlement? And maybe through that, you can tell us how the golden-cheeked warbler might have reacted to changes since then.

**Elizabeth McGreevy** [00:40:43] Yeah. Yeah. So one person described them walking through one of these juniper, old cedar, old-growth cedar breaks, as walking through nature's cathedral. And there is a remnant in Oak Hill that I have walked through. And indeed, it looks like, it feels like you're walking through a cathedral because you look up - the trees, the junipers and the oaks and the walnuts and, the diversity is tremendous. There's spice bush underneath, American beautyberry. There's so much diversity. And when you look up, the trees are towering. The junipers are as tall as the, you know, as the pecan trees. You know, it's, it's gorgeous. It's amazing.

**Elizabeth McGreevy** [00:41:30] And, and now when, but then, you know, we had the Industrial Revolution that. Oh, David, I don't know how to go at that. That's later, right?

**David Todd** [00:41:45] Well, you know, it might be worth talking just before we get too much into the, I guess, the later development of the Hill Country and these woodlands, is just talk a little bit about how they, how they might have been seen. I mean, you talked about this, this sort of nature's cathedral aspect to them, but, was it a complete forest, or was it more of a mosaic, patchy? How would you describe sort of the whole landscape?

**Elizabeth McGreevy** [00:42:21] Yeah, at the same time, these forests did not occur everywhere. We had forests, you know, the cedar breaks, we had the juniper-oak forest. We had post oak forests. We had shineries. And it was about probably 50/50 throughout the Hill Country, meaning the eastern part of the Edwards Plateau, where you had the canyonlands and all that.

**Elizabeth McGreevy** [00:42:48] And it was about 50% open, about 50% closed canopy forest. And of that forested part, about 40 to 50% consisted of junipers. And, you know, today that number is much higher because conditions have changed that originally supported the historical vegetation.

**Elizabeth McGreevy** [00:43:14] The other thing, also, is that besides having like a towering cathedral is that underneath, the soil of these forests was just described as being rich and dark, you know, really good quality soil. And we've lost a lot of that as well.

**Elizabeth McGreevy** [00:43:31] But, it was not an endless sea of grass. And I do address this a lot in my book. There's this idea that the Hill Country was mostly a grassland and that's not how it was, at least not when the Europeans arrived in the 1700s. You know, the Spanish first came in the 1700s.

**Elizabeth McGreevy** [00:43:54] Instead, it was more like a ever-changing, patchy mosaic of vegetation. And when I say patchy, like large patches, a large mosaic. The Colorado, the thing is, is that these old-growth cedar breaks were so large that they had names. And one of them was, you know, the Colorado River breaks that were along and adjacent and upslope from the Colorado River. One person estimated at least 500 square miles.

**Elizabeth McGreevy** [00:44:31] So, the forests were very extensive, but they always had an ending. You know, they ended somewhere.

**Elizabeth McGreevy** [00:44:38] And, a lot of it seemed to be based on the terrain and the soil depth. Like where you had more hilly areas, more, you know, steeper slopes, it was more forested, mainly because the soils were thinner. And deeper pockets where you had soils 4 to 6 feet deep, like around like, you know, like around Johnson City, around Blanco, Kerrville, you know, it would've been more open prairie.

**Elizabeth McGreevy** [00:45:07] In fact, when I read reports from those areas, indeed that is confirmed, that it was definitely, it had areas where it was extensive prairie, more open, and then you'd be walking another day and it'd be all forest again. So it was constantly changing.

**Elizabeth McGreevy** [00:45:25] It was incredibly diverse, which is why there is so much wildlife. But, you see, the thing is, is that the Hill Country sits at the junction of like four different ecosystems, ecotypes. And one of these is a section that comes up from Mexico, which is why we had jaguar in the Hill country. You know, so we had like species of animals and birds from all everything. We had the buffalo from the Great Plains, you know. So

everything was mixed together. It was incredible. We had black bears everywhere. And black bears they love forests. It was called black bear paradise.

**David Todd** [00:46:09] Well, so this this would have been the condition somebody might have seen the Hill Country, at least the eastern part of the Edwards in the mid-19th century, maybe early 19th century. Maybe you can tell us the change that came to this area, whether it was from, you know, sort of industrial development that you mentioned, the logging or maybe the agricultural use, some of the livestock that were brought in.

**Elizabeth McGreevy** [00:46:41] Yeah, kind of everything happened at the same time. It's overgrazing, clear cutting all happened simultaneously. The irony is that they were clear cutting the hillsides too, and about half of the trees that they cut were used for fence posts to fence in the livestock that ended up over grazing. So it's almost like the the cedar posts that they got from the clear cutting was used to overgraze the grasslands.

**Elizabeth McGreevy** [00:47:14] And so, the beginning, you know, the industrial revolution and all that - refrigeration, railroads, telegraph, barbed wire - you know, all these things happened at the same time. And the refrigeration allowed for more meat to be processed and transported. Up until then, people did not eat as much meat and suddenly they could, because of refrigeration. So you had landowners and stockmen overstocking the ranges to take advantage of this.

**Elizabeth McGreevy** [00:47:54] And, it was okay for a while. But when the fences started going up and the livestock were no longer being moved from pasture to pasture, that's when things really started to fall apart in the rangelands, you know, the areas that were being used for grazing.

**Elizabeth McGreevy** [00:48:11] But up on the hills, the trees were, they were not just being cleared out. They were being cleared out for building materials, cedar posts, but also to make charcoal, to be used for firewood. Those demands decreased as electricity came in, and of course, the electricity came in using the cedar posts, the poles.

**Elizabeth McGreevy** [00:48:32] So, all this stuff was happening all at the same time. It was, it was kind of a crazy time.

**Elizabeth McGreevy** [00:48:40] And then, you had like cedar choppers that they, they kind of jumped on the bandwagon and they went out there and they started clearing a lot more too.

**Elizabeth McGreevy** [00:48:52] And, it wasn't just in the Hill Country. It went all the way up to Palo Pinto County.

**Elizabeth McGreevy** [00:48:56] And, almost every fence post, cedar fence post, that you see from here to California, up to Canada and into northern Mexico, all came from the Hill Country.

**Elizabeth McGreevy** [00:49:06] So when you imagine the vast extent of this range, you know, where they were shipped out to, it gives you a greater appreciation of how much was removed, how much, how many trees, how much biomass and all that.

**Elizabeth McGreevy** [00:49:21] And, the thing is, people, people were just trying to make money. They were just, you know, this was, it gave a boom to the Hill Country economy, got Austin started.

**Elizabeth McGreevy** [00:49:31] And, most people did not realize the negative impacts of all this overgrazing and clear cutting, because it's been done in other places of the eastern United States, and the land rebounded, not long after.

**Elizabeth McGreevy** [00:49:46] But, the Hill Country has, like I said, very shallow soils, and we get flash floods, droughts and that, just with, the continual, each wave of clear cutting, and the other thing besides clear cutting and overgrazing, there is also excessive burning. And that did not really stop in until about 1900s. But people would be out there burning their lands sometimes twice a year, and that was burning out a lot of the organic matter. Again, if you had deeper soils, not much of an impact, but with shallow soils, obviously a much more of an impact. And it just kept going. But basically, it's not like people are trying to burn anything. We just didn't know better.

**Elizabeth McGreevy** [00:50:32] And, we're now suffering, still, from the fact that the land has never been given a chance to rebound. And, the mountain cedar, as it spreads, as those pioneering bushes, you know, is actually helping to improve things.

**David Todd** [00:50:53] We should talk about that.

**David Todd** [00:50:55] Well, let's sort of if you would, just give us an even a little bit more detail about this phase where the Hill Country was changing so rapidly with development, you know, both for logging it and then also for grazing it.

**David Todd** [00:51:16] I would be curious to know if you saw different effects from goats and sheep, versus cattle in grazing the Hill Country.

**Elizabeth McGreevy** [00:51:29] Sheep had a tremendous impact just because there were so many sheep. [Excuse me.] It's the thing is sheep, they, they just kind of, they're good for, they're actually good natural lawnmowers. You know, so, they don't really eat down to the nub.

**Elizabeth McGreevy** [00:51:49] If I understand correctly, goats ... for a while there weren't as many goats. And so because goats will eat anything. Right?

**Elizabeth McGreevy** [00:52:00] But, the livestock might have had actually the biggest impact. Horses could have, but there weren't as many horses. Horses will eat down everything. But the livestock, if they're not allowed to move around, and they're fenced in, they just keep eating the same grass.

**Elizabeth McGreevy** [00:52:19] And, little bluestem is one of our most common, or at least it used to be, the most common native grass in the Hill Country. And, if you have little bluestem in your yard, like these people that move out into the suburbs, you know, that might still have like a wildish lawn area where they just mow it. If you mow that little bluestem more than twice a year, it's going to start to die, because it can't handle it. And it needs to rest. It needs to rest a few years to grow back up, before the livestock come and eat it again.

**Elizabeth McGreevy** [00:53:01] So, that's why the fencing, actually, had the most, created the most damage, than the animals themselves. Because, also the other thing is that when there were cowboys, they were, they kept moving the livestock and they, they were not allowed to, like, hang out along the creeks and rivers. The cowboys would move them onwards. Right? Because back then you had wolves and things like that that could attack the livestock.

**Elizabeth McGreevy** [00:53:32] But, once the fences went up, if you had a creek, the cows would all just go hang out by the creek all day. And that's actually where the worst damage has occurred is along our riparian corridors, our creeks and rivers, because of just this nonstop grazing. So it's the non-stop grazing and the sheer numbers, as opposed to any livestock species in particular.

**David Todd** [00:54:00] Okay.

**Elizabeth McGreevy** [00:54:01] Well, I guess another question I have about how that landscape has changed is how it was cleared. I mean, I think that there's been this progression from the Kerrville axe, to chainsaws, to bulldozers, to bulldozers with chains. Can you sort of walk us through what those different steps might have look like?

**Elizabeth McGreevy** [00:54:33] Yeah, sure. The first Europeans to really settle the Hill Country were the Germans. And the Germans were probably better land stewards, at least the ones that showed up first. And they would selectively clear. They did not go through and do wholesale clearing. So they had less of an impact. And of course, back then they just had the axe.

**Elizabeth McGreevy** [00:54:59] When the cedar choppers are chopping, when barbed wire was invented, and railroad ties were needed, and telegraph poles were needed, when they went out there and started doing chopping again, again, they still had just axes, but boy, they were fast and efficient and a tough bunch. They could, they, from what I've read, they could go pretty fast, but obviously not as fast and easily as a chainsaw or something else.

**Elizabeth McGreevy** [00:55:28] And then, but it's, it's amazing to me how much damage was still caused, even though they just had axes. But, they were such hard workers, you know. They were out there all the time. They weren't sitting there watching TV and stuff. They were working 24-7, you know, all the time. And that diligence created a very big impact, just because they never stopped working.

**Elizabeth McGreevy** [00:55:59] And, but, of course, it wasn't really until about the 1940s, when the government saw all these, you know, when they saw the pioneering thickets of bushy cedars, all they saw was invasives, something to get rid of. So they put out in the 1940s, they said, they told all the landowners, if you, we'll give you money to clear cut every acre of every tree except for three oaks per acre.

**Elizabeth McGreevy** [00:56:30] And a lot of people still just had their axes to do that. So they did what they could.

**Elizabeth McGreevy** [00:56:34] Like Fred Shorty Krausse. Fred Shorty Krausse, who was in Fischer, told me that when the government told them that they went out, all they had were axes. So they went out there with their axes. But when they got to the big mountain cedars on top of the hillside above Canyon Lake, with 3- to 4-foot diameter trunks, they're like, "Oh, heck



no, we're going to keep going", because they were just too big for axes. You know, they were just like, "No, we're not going to do that".

**Elizabeth McGreevy** [00:57:04] Then, the chainsaws were coming, and it's, more and more people started getting chainsaws. And I have not seen the aerial photos, but Dean Keddy-Hector, the one I mentioned before that introduced me to the warbler, he has seen those photos. And he said it's, the devastation was just mind-boggling of how many acres and how much erosion and how a... A report by Marsh Marsh, and I can't remember the year, but they said that an average of five inches of topsoil was eroded. And it's not just what was eroded; it was the seed in the soil that was lost, all that organic matter, everything that protects that karst limestone underneath, was eroded.

**Elizabeth McGreevy** [00:57:55] And so, that had a huge impact.

**Elizabeth McGreevy** [00:57:57] Then came the bulldozers. The most devastating impact on the Hill Country would be the chaining. And that's where you get two bulldozers. You put a massive chain in between the two, and you drive the bulldozers along, and that rips the trees out by the roots and just tear apart the karst, the soil and everything. That did more damage than anything.

**Elizabeth McGreevy** [00:58:25] And, David Bamberger of Selah Ranch, he told me, "Oh, hell, I would never". He said he did use a bulldozer one time. I don't think he chained, but he did use a bulldozer, just to bulldoze stuff. And he said, "Never again". He said, "No, no, no. That is just bad stuff".

**Elizabeth McGreevy** [00:58:41] You know, that is just such an aggressive approach to creating that chaos, you know, that cosmos out of chaos I was talking about with Mercia Eliade on.

**Elizabeth McGreevy** [00:58:55] So, that was definitely the most devastating. So it just, just continues. And I know that chaining is still a thing. I don't know if people in the Hill Country are still using it, but it's incredibly destructive.

**Elizabeth McGreevy** [00:59:12] Another thing, another way that areas were cleared out is that they would be producing, when they got all the cut brush, they would pile it up into piles that were like 30 feet high, and set them to fire. And that would just, you know, throw tons of carbon, smoke, and all that stuff into the air. You lose all that organic matter and it destroyed the soil underneath.

**Elizabeth McGreevy** [00:59:43] So, all these just lovely practices that have created lots of problems that we're now stuck with.

**David Todd** [00:59:51] Yeah. So something else that I think, again, you touched on earlier, but maybe you can give us a little bit more detail about, is this connection between junipers and water use. And it sounds like there have been lots of theories, and maybe some myths, about the role of junipers in the hydrologic cycle. And maybe you can help us understand this in a better way.

**Elizabeth McGreevy** [01:00:21] Yeah. That probably, that the first time something negative was written about these trees was in 1939. It was Ross Jenkins who wrote in "The Cattleman"

that these trees are, yep, basically accusing them of being water hogs, you know, hogging up all the water, sucking up the water.

**Elizabeth McGreevy** [01:00:41] And, initially, it just started off as being, "Oh, they're sucking water from the grass". But, nowadays, it's they're sucking water from the aquifer. And it's, the story, just keeps growing and growing.

**Elizabeth McGreevy** [01:00:54] And, it's because people were only looking at what was happening on top of the ground. There weren't think about what was going on underneath. And they would see that, "Oh, I clear all this vegetation and my spring flows increase".

**Elizabeth McGreevy** [01:01:09] Well, the truth is, science has since shown that if you clear any vegetation in the Hill Country, you're going to get more spring flows. And that's because when the first water use, official water use was done in the 1990s - 1996 - it was just an estimate, and it only looked at one juniper and one oak. It was just kind to get themselves out the door. It wasn't meant to be taken as gospel and it was taken as gospel. It was just like an introduction to this research that was going to happen.

**Elizabeth McGreevy** [01:01:44] And, follow-up research across the board has shown actually the live oaks actually use more water. But does that mean you go out and clear cut the live oaks? Absolutely not. It just means that vegetation uses water, because it's part of the hydrological cycle.

**Elizabeth McGreevy** [01:01:58] And, up until about 1915, we all understood that.

**Elizabeth McGreevy** [01:02:01] And then, all this propaganda came out that started saying, "Oh, but brush, you know, vegetation uses water is bad, bad, bad, because the people need it". Because of the Industrial Revolution, populations were increasing. Humans needed that water supply. Right? So, they were trying to find any way possible to increase water supplies. And that became the new way.

**Elizabeth McGreevy** [01:02:22] And that has persisted even until today, is that the way to do it, is to clear cut the land, increase overland flow so you get more water in your water supplies. But that's led to the desertification of the Hill Country.

**Elizabeth McGreevy** [01:02:40] So, do junipers use water? Yes. I use water. But across the board, it's not really a whole lot more than any other established vegetation.

**David Todd** [01:02:55] Okay. Well, that that helps clarify things.

**David Todd** [01:02:59] You know, another issue that I think some folks bring up about junipers, which, you know, in turn affects the warblers, is that these trees give people cedar fever from their pollen. And, can you talk a little bit about that: where this idea started and what it means to us today?

**Elizabeth McGreevy** [01:03:24] Yeah. Yeah. For, you know, before the 1920s, it seems that I never, when I've been doing all my reading, I never really heard about anyone talking about suffering any kind of hay fever or anything like that during the winter, which would obviously mean they were suffering from cedar fever. It wasn't till about the 1920s that people started to see it as a thing.

**Elizabeth McGreevy** [01:03:50] Well, before, when the mountain cedars were growing mostly as older, older trees within these forests, they would not have been producing as much pollen because older trees, like older people, you know, they don't produce as much.

**Elizabeth McGreevy** [01:04:06] And, as these pioneering thickets of bushes started spreading everywhere, they were young. They were like active teenagers. So they are producing more pollen.

**Elizabeth McGreevy** [01:04:18] Of course, why are they spreading? Because of the damage that we have caused.

**Elizabeth McGreevy** [01:04:24] And so, it was just formally identified in the 1920s as "cedar fever". They finally figured out it was coming from these junipers. But, they were also finding out that people getting allergies seemed to be a rising thing as the Industrial Revolution increased because people were spending more time indoors. You had more people living in cities.

**Elizabeth McGreevy** [01:04:51] In fact, what I've come to realize is that cedar fever, it seems to be more of an affliction for city people, not country people. Because when you go out and speak to, you know, people that live out in the country, they don't really get cedar fever. And so I think there's something about that. I'm not exactly sure. There's some ideas that maybe it's, I don't know, maybe air pollution or something.

**Elizabeth McGreevy** [01:05:15] But, it seems that there are things that we can look into because, yes, a lot of people do go out and they get very emotional, very angry because a tree is making them feel horrible. Right?

**Elizabeth McGreevy** [01:05:32] And, you know, I had like a neighbor one night when I lived in South Austin, you know, 20 years ago, who just went and chopped down his two junipers he had, each with, you know, 18-inch diameter trunks. They were both female, which meant they only had the berries, not the pollen. And he cut them down. I went knocked on store, said, "Why did you cut those down?" He said, "Oh, because they're give me cedar fever." And I said, "Well, those are females. They have berries, not pollen." And he says, "Oh, I don't care, you know, I'm going to cut them all down." I said, "Well, you know, you have to be more than 200 miles away not to be afflicted by the pollen." And he just slammed the door on my face, because he didn't want to hear it, because they just know that they are miserable. Right?

**Elizabeth McGreevy** [01:06:15] And so, I think, and the problem is, is every winter the media, you know, runs their little piece on cedar fever, you know, try to get people riled up and angry at the juniper trees, when instead it'd be nice if they could be part of the solution, trying to figure out, okay, what can we do?

**Elizabeth McGreevy** [01:06:33] Like, for instance, me, I used to get cedar fever until I put a little filter on my water too, so I didn't get all that, like what is it, the chlorine or whatever in the water? Because when you're taking a hot shower, if you breathe that in, it can make your lungs more sensitive to the pollen. So, you know, things like that. Because it would be nice to get to the point where people are not so angry.

**Elizabeth McGreevy** [01:07:00] But I understand it.

**Elizabeth McGreevy** [01:07:01] And, the other problem is that, they do happen, the cedar fever happens, right when people are getting the flu and everything. So a lot of times it's just really, it's just regular hay fever mixed with the flu. And that's what makes people feel so horrible.

**David Todd** [01:07:16] I see. Okay.

**Elizabeth McGreevy** [01:07:19] Well, you know, as Austin and San Antonio and the whole I-35 corridor have boomed in the last generation or so, developers have become a player in the juniper woodlands. And I was wondering if you could talk a little bit about that change and how it's affected the juniper forests.

**Elizabeth McGreevy** [01:07:47] Yeah. Unfortunately, developers are the new problem. You know, people aren't really chaining anymore and things like that. And it's a very sad thing, because a lot of these landowners, they just, they are not being, they don't know what to do. They just, the government, where they get funding, is telling them the wrong thing about just, oh, just keep clearing the brush. But they're like, "Yeah, but that doesn't fix anything".

**Elizabeth McGreevy** [01:08:14] And, a lot of these landowners are giving up and they're just selling their land to the developer, which is tragic.

**Elizabeth McGreevy** [01:08:22] And, I know that there are a lot of like land trust, conservation easement groups that are now setting up, trying to protect these lands, and to set these lands aside, because a lot of the developers still believe that the junipers are bad. So, they think when they go out and clear cut that they're doing everyone a favor.

**Elizabeth McGreevy** [01:08:44] I mean, I remember reading in the Austin American-Statesman one time, and a developer saying, "Yeah, I just did you all a favor by clearing all the cedars because they're using all the water".

**Elizabeth McGreevy** [01:08:53] And so, they, they really think they're doing everyone a favor.

**Elizabeth McGreevy** [01:08:58] So, they do need to be more educated, because they're, they're going in, and they're land scraping. They're taking not just, they're not just affecting, you know, removing the forest and the, and things. See, the thing is, is that the developments that are happening around the cities, the cities have a little bit more control. But when you're out in the county, they, the counties, don't really have any control. So they really, we need to have some kind of program put in to place to help, you know, educate these developers, to teach them there are better ways to do this.

**Elizabeth McGreevy** [01:09:35] And, I have worked with developers who do things the right way. So I know what the right ways are and they're very doable. It's just that people don't know about it. They're not going to do it. And right now the trend is to scrape everything down to just the bare bedrock. It destroys the upper part of the karst that helps to absorb water and that moves groundwater deeper. So all of this, you know, increases soil erosion, downslope flooding, and a loss of the groundwater storage capacity. And, it also increases the heat island effect and leads to more carbon and water losses.

**David Todd** [01:10:19] That's a lot.

**David Todd** [01:10:22] Well, and I gather that there's a, there's a sort of political side of the juniper story. You know, in part for agriculture, but also maybe accelerated by the development that, you know, is more about residential construction, commercial build-out. Can you talk a little bit about the Take Back Texas movement, and where this might have originated, and what the impacts were on juniper and warblers?

**Elizabeth McGreevy** [01:10:54] Yeah. Yeah. So, back in the 1990s, the U.S. Fish and Wildlife Service learned that the golden-cheeked warbler was definitely endangered and said they want to do a formal endangered listing. And in their pamphlet that they were putting together, they had, they said that the warbler occurs in 33 counties. That's what they were identifying. And they were saying that in those areas the mature mountain cedars will be protected on federal land.

**Elizabeth McGreevy** [01:11:32] Now, do you remember when I mentioned before about the age of the trees, about the heartwood? They were referring to when the heartwood matures. But most people, landowners, they know that when they're, like the bushy cedars sexually mature and start producing fruit and pollen about ten years old, that that is also when, another part of their maturation.

**Elizabeth McGreevy** [01:12:00] And so, that confusion with the word, "mature" is what led to this debacle, where the San Antonio reporter, he didn't understand the federal government was referring to the heartwood being mature, which is what the federal government should have written in.

**Elizabeth McGreevy** [01:12:15] But, they may not have understood that this discrepancy existed. It was just their intent was to protect the old growth of juniper forests, not the pioneering thickets.

**Elizabeth McGreevy** [01:12:27] But, the indicator, the reporter said, "Oh, no, you can't touch any of your mountain cedars. Nothing".

**Elizabeth McGreevy** [01:12:37] And, that made landowners furious. And I understand why. I mean, I would've been furious, too, because it's like, what? What?

**Elizabeth McGreevy** [01:12:47] But, the problem is, is that even though the reporter retracted the next day and made the correction, no one reads the retractions. Right? They just read the headline.

**Elizabeth McGreevy** [01:12:58] And, landowners, everywhere, start running out and clear cutting. And because they're like, "Oh, we have warblers on our property, we got to go out and clear it out."

**Elizabeth McGreevy** [01:13:08] And, that, that's actually is a really big problem.

**Elizabeth McGreevy** [01:13:15] If you remember before I mention that I see the golden-cheeked warbler as the canary in the coal mine, and that the more warblers you have, the more healthy your forest. Well, you know what? Everyone loves a good forest. That's not what, the landowners aren't trying to clear cut a forest. They're trying to clear cut any obligation to the Endangered Species Act.

**Elizabeth McGreevy** [01:13:37] But, if instead, we could approach the problem differently and say, "If you have warblers, that means you have healthy forests, and everyone values a good forest. That means your land is more valuable". That's how we need to re-approach this issue.

**David Todd** [01:13:54] So, if I'm following you, removing the forests was seen as a way to remove liability under the Endangered Species Act.

**Elizabeth McGreevy** [01:14:08] Exactly. Yeah. In fact, I remember who was it? I think it was Chuck Sexton who told me that, out at the Balcones Canyonlands National Wildlife Refuge, they were trying to acquire this one guy's land and, because it had old-growth juniper forests on it. He had warblers. And, the landowner freaked out, went out and clear cut everything, so he didn't have any warblers. Instead, it all grew back as a shin oak, as a shinnery, and the black-capped vireo, the endangered black-capped vireo started living there, and he just finally gave up and said, "Here, take it", because it went from one endangered species to another.

**Elizabeth McGreevy** [01:14:50] Because when you clear out the forest, a lot of times you're going to end up with that thicket that another endangered species is going to like. So it doesn't really serve anyone.

**Elizabeth McGreevy** [01:15:01] And, the truth is, our healthy forests are so valuable, especially here in Hill Country, because we have so few left. But, anyone with a healthy forest, their land should be worth more. But, people instead have been approaching this from the wrong angle. Instead of when you focus on the warbler as an endangered thing, that can take away your lands rights, instead we should say, "Oh, if you have healthy forests, your land will have more value".

**Elizabeth McGreevy** [01:15:37] Does that make sense?

**David Todd** [01:15:38] Yes. More value, rather than looking at it being more of a liability.

**Elizabeth McGreevy** [01:15:44] Yeah. Which is too bad. Which is too bad, because the warblers do have value. They feed on the caterpillars that, they can help reduce oak wilt. You know, they eat lots of insects and bugs, that they're actually very beneficial in that way.

**David Todd** [01:16:08] What do you think it is that makes some of these ideas about the juniper, which seem to me like misconceptions, legends, myths, being so persistent. I mean, it sounds like you've been trying to trumpet the truth about these things for a number of years, but it's, it sounds like it's hard to change these minds.

**Elizabeth McGreevy** [01:16:37] Well, for one, people, it's kind of seductive to be part of a group that believes something, whether it's wrong or, you know right. It's, it's cool. You know, you're part of a group, right? And that's okay. Unless that belief is causing damage. But, in order to change, you have to have it so that it's not being repeated over and over and over it. You have to nip in the bud who's doing the repeating. And most of the repeating is being done by the media.

**Elizabeth McGreevy** [01:17:09] Like every, every cedar fever season, you see the report on the TV. You see the report in the newspaper. Oh, cedar fever seasons here. You know, they talk about it on the radio. It's all they can talk about. And, everyone starts leaving nasty comments: "Oh, I hate those cedar trees".

**Elizabeth McGreevy** [01:17:27] And, it's just this thing every year. It's the cedar fever thing. And that's when the anti-cedar rhetoric starts all over again.

**Elizabeth McGreevy** [01:17:39] But, it also is going to take higher levels. You know, what I'm doing with my book is growing the army, I guess you could say, you know, is the grassroots effort.

**Elizabeth McGreevy** [01:17:52] But, ultimately, it's going to take, you know, getting through to these county and state agencies that these mountain cedars are actually beneficial, as Dr. Brad Wilcox has determined, where they're growing across limestone karst, which is basically the Hill Country, is that they're actually improving the soil and how much water can infiltrate into the soil over time - that we should be learning to work with them, not fight them. As long as we keep fighting them, nothing's ever going to change. It's never going to get better.

**Elizabeth McGreevy** [01:18:33] But, the only way that we'll get people to change is to show them that there is a better way to do it. And I mean, you know, demonstrate this is how it can be done and to make it happen.

**Elizabeth McGreevy** [01:18:48] It takes nudging, but it can definitely happen. And every time I go out and give a lecture or something like that, I talk to people. Sometimes I, sometimes it's through Facebook, you know, social media. Sometimes it's on Nextdoor. You know, it might take a few days, back and forth, back and forth. And finally they'll realize, "Oh, you do know what you're talking about". Well, yes. And, and they'll start to listen to me. But it takes a lot of calm persistence to get through to them, to get them to the point where they will listen to you.

**Elizabeth McGreevy** [01:19:26] You know, something that I think I'm sensing with you is that you are a patient person because, you know, changing people's minds and changing landscapes is a really slow process. Is that a fair thing to say about you?

**Elizabeth McGreevy** [01:19:50] Patient to a degree. But the truth is, I have found that if, I wouldn't say I'm patient, but that's my virtue. And it's more or less it's like forced patience. You know, I force myself to be patient because if you come in yelling at them, accusing, you know, these people, "Oh, you're stupid", or something like that. Or, "You don't know", you know, and all that, they're just going get defensive and not listen to you.

**Elizabeth McGreevy** [01:20:24] When instead, you tell these stories, you make connections, you show them that, you know, they're not to blame, you know, that there is a better way forward. You know, that we just got to figure out how to do it. We got to work together, and that this is something we all need, because we all love the Hill Country. We all want to make it better. So how do we make that happen?

**David Todd** [01:20:49] Right. Well, we are, I think, drawing to a close here.

**Elizabeth McGreevy** [01:20:56] We talked a lot about the past, and this might be a good chance to look into the future, and get your sense of what the coming years might hold for protecting these old-growth junipers, as well as making sure that the golden-cheeked warbler becomes a key part of that whole ecosystem.

**Elizabeth McGreevy** [01:21:25] Hey, can I talk about my non-profit?

**David Todd** [01:21:28] Please! Of course! Yes.

**Elizabeth McGreevy** [01:21:30] Because that kind of is what the nonprofit is for. Okay.

**David Todd** [01:21:33] Yes.

**Elizabeth McGreevy** [01:21:35] So, as I finished up my book here, and I started giving book signings and more presentations, I was just inundated by landowners as the word got out that I was the one with the answers, you know, and people, landowners, would come up to me, sometimes crying, sometimes screaming, but not at me. Just because they're frustrated. They need someone to show them the better way, how to make this happen. They need to have it so that these county, these state agencies, will provide funding for them to do these things.

**Elizabeth McGreevy** [01:22:10] And so, I decided finally, you know what? Let's start a nonprofit, where I'm going to focus. And of course, the start, starting out the gate, will be to explain how to work with these pioneering thickets of the bushy cedars. Right? Of how to use them to regenerate these degraded limestone karst lands that we have, not just in the Hill Country, but wherever these junipers grow on top of this limestone.

**Elizabeth McGreevy** [01:22:41] And, to also get people to understand the value of maintaining and managing, protecting old growth, you know, and not just old-growth forests where you have the warblers, you know, we need to connect them, so they're not so fragmented, you know. Is, but also just the value of old-growth grassland prairies, which can also be old growth, that those are just as valuable. But it's just the vegetation that has been here for a while, that has been established, the value of protecting that.

**Elizabeth McGreevy** [01:23:17] And, right now, one of my early projects I want to do is, is to educate developers, is to get out there, maybe go to their annual conferences and talk to them, you know, is that they need to understand that when you have these junipers growing, that they're not a bad thing, that they're not something to fight, that they're actually part of the solution. And that's going to help us make the Hill Country become more biodiverse, more ecologically resilient, you know, able to move into the future where we get things like climate change and things like that, sinking more carbon and water, just strengthening, increasing groundwater supplies. You know, we can do it all in one and reducing fire risk.

**Elizabeth McGreevy** [01:24:06] You know, we can do all this in one package, but we just have to adopt the right approach, which has to do more with regeneration and adopting holistic ecological strategies.

**David Todd** [01:24:20] Well, you're, I think, a holistic, big-picture thinker about, you know, how this whole ecosystem in the Hill Country works. Can you sort of drill down and give us some thoughts about the golden-cheeked warbler in particular and what its, its future might hold?

**Elizabeth McGreevy** [01:24:43] I think that the future for the warbler will be assured as we switch and start embracing these old-growth forests. I know that there are a lot of efforts to put old-growth forests and things into conservation easements, and that is a huge, significant step forward. And also, you know, things green infrastructure plans with the Hill Country Alliance. You know, Austin just did a climate action plan. All of these things are recognizing the value of old-growth forests: that they are part of our green infrastructure, which serves to reduce erosion, reduce downslope flooding, mitigate heat.



**Elizabeth McGreevy** [01:25:33] So as this, as the old-growth forests are more and more embraced in Hill Country, the golden-cheeked warbler is going to flourish. You know, I believe that wholeheartedly.

**David Todd** [01:25:47] That's great. Nice to see some value in these trees have been pretty maligned over the years and then a bird that's suffered as part of that sort of campaign against the cedars as a source of pollen and, you know, a block to grazing and development and so on.

**Elizabeth McGreevy** [01:26:15] You know, a lot of times though - real quick - is that it has to do, again, that we spend too much time indoors and not out there in nature.

**Elizabeth McGreevy** [01:26:23] I remember when I worked for a landscape architect in Austin shortly after, for like a year or so, Richard Simberdorn. And I was working there, and on this one plan, and I remember hearing this one guy named Pete, I think his name was, and he had just been put onto a project that had a huge old-growth forest that was on top of a bluff. And he kept saying, "Oh, man, we got to clear out that whole thing so we can get the views of the Hill Country, open up everything".

**Elizabeth McGreevy** [01:26:58] And, one of my friends there who was working on the golden-cheeked warbler, Sandra, she said, "No, Pete, we can't do that."

**Elizabeth McGreevy** [01:27:05] And, he said, "Oh, yes, we can. We got to do that. We got to clear out as much as possible."

**Elizabeth McGreevy** [01:27:10] So, she said, "We're going to go on a field trip, Pete". And she took him to that forest and he walked through and he said, "Okay, that's not so bad."

**Elizabeth McGreevy** [01:27:21] And, suddenly a male golden-cheeked warbler came down and sat on a juniper branch about five feet from him, looked him in the eyes and started singing.

**Elizabeth McGreevy** [01:27:32] And, then it flew away.

**Elizabeth McGreevy** [01:27:34] He turned to Sandra, and he said, "We're not touching this forest".

**Elizabeth McGreevy** [01:27:39] But, you know, it's like that's what it took, this intimate connection with the warbler for him to finally understand the value of that forest.

**David Todd** [01:27:53] Well, that's a nice note to end on, I think. May we we all have some singing golden-cheeked warblers in our future, with some old growth for the warbler to alight on.

**David Todd** [01:28:09] Is there anything you might like to add? We certainly covered a lot, but I hope I haven't skipped over something you'd like to, to discuss.

**Elizabeth McGreevy** [01:28:19] Nah. We're good.

**Elizabeth McGreevy** [01:28:24] I think ending with that story, I'm glad that popped in my head. I love that story.

**David Todd** [01:28:29] It's very sweet.

**David Todd** [01:28:31] Well, thank you, Elizabeth. Again, you've been really kind to do this. Learned a lot. And I wish you the best with your future work in the Hill Country.

**Elizabeth McGreevy** [01:28:40] Okay. Well, thank you, David.

**David Todd** [01:28:42] You bet. Take care now.

**Elizabeth McGreevy** [01:28:44] Okay. Bye bye.

**David Todd** [01:28:45] Bye now.