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**INTERVIEWER:** David Todd

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**Google Voice** [00:00:00] This call is now being recorded.

**David Todd** [00:00:03] Oh, Mark.

**Mark Mitchell** [00:00:05] Hey, David, how's this?

**David Todd** [00:00:06] This is great. Yes.

**Mark Mitchell** [00:00:08] OK.

**David Todd** [00:00:09] Third time's a charm. All right. Well, good deal. Well, thank you for bearing with us and, you know, trying a few different options.

**Mark Mitchell** [00:00:19] Not a problem at all.

**David Todd** [00:00:21] That's great. Well, I think when we were fiddling with the technical stuff, you were asking me a very good question about how this works and I can lay it out and see if this sits well with you and we can go from there.

**Mark Mitchell** [00:00:41] Okay.

**David Todd** [00:00:43] Okay. Well, so typically these interviews take about an hour, maybe 90 minutes, depending on how much people want to talk. And by and large, I try to talk as little as possible. I ask a few questions just to, you know, give you a sort of a prompt. The only time I do talk in any length is at the beginning. I just try to introduce the project and introduce you, and then, you know, we go through the questions that are on that sheet of paper that we've been sending back and forth. I just go through it really the same order as, as that list of questions. So if you have that, that could be sort of a cheat sheet to sort of know where this is heading.

**Mark Mitchell** [00:01:35] Yes, I got that right in front of me.

**David Todd** [00:01:37] Oh, good, good. All right.

**David Todd** [00:01:40] So that's, that's a general route these interviews go. And does that sound okay with you?

**Mark Mitchell** [00:01:47] Well, it's fine with me. Whatever you want to do.

**David Todd** [00:01:50] All right. Well, you're clearly a flexible, patient guy. Thank you. Well, let me get started. I'll say a few words, maybe a couple of minutes' worth. And that'll help people orient themselves if they find this interview and they want to know what it's about and then we'll get into the meat of it after that.

**Mark Mitchell** [00:02:14] Okay.

**David Todd** [00:02:15] All right.

**David Todd** [00:02:16] Well, good afternoon. My name is David Todd, and I have the pleasure of being with Mark Mitchell on a Google Voice call. And with his permission, we plan on recording this interview for research and educational work on behalf of a nonprofit group called the Conservation History Association of Texas, and for a book and a website for Texas A&M University Press, and finally, for an archive that is located at the Briscoe Center for American History at the University of Texas at Austin. And Mr. Mitchell would have all equal rights to use the recording, as well.

**David Todd** [00:02:57] And I just wanted to make sure that that sounds like a good plan to you..

**Mark Mitchell** [00:03:04] It does to me. Yes.

**David Todd** [00:03:06] Oh good. Well, then let's get started. It is Monday, February 21st, 2022. It's about 2:50 Central Time. Again, my name is David Todd and I am representing the Conservation History Association of Texas. And I'm in Austin and we are fortunate to be conducting a remote interview with Mr. Mitchell, who is based in the Mason, Texas area. As a little background about him, he has worked as a wildlife biologist at Texas Parks and Wildlife, and he's been there since 1986. He has worked at Mason Mountain Wildlife Management Area since 1999, as manager there since 2002. And of special interest to us, he recently began work reintroducing prairie dogs to the Wildlife Management Area, so we're looking forward to hearing about his experience there.

**David Todd** [00:04:10] So today, we will talk about his life and career, to-date, and then focus in on his work with the black-tailed prairie dog.

**David Todd** [00:04:21] So we usually start these interviews with a question about your childhood and early years and if there might have been people or events in your, your life that influenced your interest in animals and, and might have gotten you started.

**Mark Mitchell** [00:04:43] Absolutely. You know, I grew up in a small eastern central Texas town of Bremond, Texas, which is in Robertson County. Grew up on a small farm. We raised cattle and mainly vegetables. My father really liked tomato farming. And so we would have as many as five acres of tomatoes a year. At that time in the '70s, like most kids growing up in the outdoors, you know, I spent all the time I could fishing and hunting and, and being outside looking around. But there wasn't a lot of wildlife in that part of the state at that time. You know, upland game birds, quail and dove, no deer or anything like that. And so, you know, I spent a lot of time reading magazines, watching shows such as Mutual of Omaha's Wild Kingdom. Remember that very well. And The Harley Berg Show, which was a show put on out of Waco, Texas, about hunting, fishing on Sunday mornings. And so, you know, my interest was always in the outdoors. I spent most of my life growing up outside on the farm.

**Mark Mitchell** [00:05:52] When I got older, you know, like, like so many people, I went to college with not a lot of direction until I met a fellow named Bob Carroll 'who actually was an old family friend who worked for Parks and Wildlife since the mid to late '60s. And just a chance encounter with him gave me an option of what I could do with my life involved with wildlife, working for Parks and Wildlife. And from that point on, I went to school, changed my major, went to school to do exactly what I'm doing right now, and graduated with the bachelor's degree from Southwest Texas in 1986 and went to work for Parks and Wildlife a couple of months later. And since November of '86, I've been an employee of Texas Parks and Wildlife doing exactly this.

**Mark Mitchell** [00:06:41] My first few years were, were down on the coast. First went to work on a wildlife management area outside of Lake Jackson, Texas, that was new at the time, called Peach Point Wildlife Management Area. It has since been changed its name to the Justin Hurst Wildlife Management Area. And a lot of people may not even remember the initial name of Peach Point, but it was part of Stephen F. Austin's original colony, and that was Stephen F. Austin's plantation, I heard, was the Peach Point plantation, which this management area was a part of his, his original land grant. Kind of interesting history there.

**Mark Mitchell** [00:07:19] And then I later moved to Gonzales, Texas, working a few years there, then back down on the coast, before transferring to Mason Mountain in 1999.

**Mark Mitchell** [00:07:31] Most of my first 13 years is what we call regulatory biologists, which meant I worked in the county, worked with private landowners, and did, and did projects out in the county on private lands and to some extent on public lands. One of the first projects I did, and got hired for, because I was actually younger and more agile at that time, was climbing trees to catch bald eagles for a nesting project. We were looking at the eagles that were raised in Texas, where they left once, once they, once they fledged and were on their own, where they go, went to, and then more importantly, when they got ready to nest at four years old, where did they go to the nest? And that was an interesting project. We banded 137 eagles over the course of about five years and got to watch their, them over the next few years.

**Mark Mitchell** [00:08:26] Did a lot of non-game work on the coast with colonial waterbirds, Attwater's prairie chickens, bald eagles and then transferred up here in '99.

**Mark Mitchell** [00:08:36] Once I got to Mason Mountain, I got to admit that I had no history with prairie dogs. I'd seen them casually, but I'd never worked with them. But once I got to the area, you know, I started learning about the native species that had occurred here historically. And prairie dogs was one of them.

**Mark Mitchell** [00:08:57] One of the other species that had occurred here in the somewhat recent past, and were still here in small numbers in portions of the county was javelina. So in 2005, we started a project to reintroduce javelina on the Area. And at that time, me, along with some of the other people associated here, had an idea of prairie dogs, but we really didn't think that a prairie dog reintroduced, reintroduction would be acceptable to the public, to landowners and to our people, to be honest with you. It was a little too controversial what we felt.

**Mark Mitchell** [00:09:38] And so we went with the javelina at that time, and, you know, that was accepted really pretty well, by, by the locals, surprisingly. You know, we had some people that did not understand. But there again it's a native species that naturally occurred here,

occurred all the way to the Red River, and because of man's activity had been extirpated from a big part of the county. So that went over and worked pretty good.

**Mark Mitchell** [00:10:06] And then around 2015, 2016, we started discussing the possibility of reintroducing prairie dogs. That is a keystone species throughout its range. It also had been pretty much extirpated from about 95 percent of its area. The black-tailed prairie dog is one of five species that occur in North America, and it has by far the, the largest range of any of the five, and it occurred historically all the way down to Bexar County, in San Antonio. When we were talking about this, even going back to the early 2000s, some old-time biologists and technicians that I was very lucky to work with could remember prairie dogs in Mason County as late as the mid-1990s. Likely there were some that occurred even in 2015 that we just weren't aware of: small pockets on private ranches here or there that were in places we just didn't know about.

**Mark Mitchell** [00:11:14] But we went ahead and tried that. And did the first release in 2017 with the assistance of the Texas Wildlife Service. They work with prairie dogs a lot. And they had approached us after, I guess, making their initial contact with them about that they would like to try to reintroduce some. Most of their, most of their work was done eradicating them, where people did not want them. And they wanted to have the opportunity to possibly put some back.

**Mark Mitchell** [00:11:51] So we started that project in 2017. As I've learned, it was met with very, very little success. I think we initially introduced 30, 35 and within three to five months they were all gone. And then we reintroduced 25 more, in which case, in a relatively short time, they were gone again. At that point, we realized that to do this, we really needed access to a lot of animals. You know, reintroduction, a lot of times, those animals aren't geared to surviving in that climate. They came from somewhere different. And they're just not used to having everything they need.

**Mark Mitchell** [00:12:39] And we were put in touch with a lady named Miss Lynda Watson out of Lubbock, who had spent 30 years trapping and probably handling more prairie dogs than anybody else in the United States? I think she's like, she's caught and translocated close to 200,000 or something like that. And she, she really taught us a lot, opened our eyes to what we were doing wrong, opened our eyes to what it would take to make a restocking work. And she was more than happy to help us.

**Mark Mitchell** [00:13:17] Her job is to relocate prairie dogs. And where they still exist in urban areas or on the edges of urban areas, she's often hired to catch prairie dogs and move them because of subdivisions going in or a shopping center, or urbanization is taking place, and they don't want to kill the prairie dogs. They just can't have them on that piece of property. So she is, that's her job is to catch and relocate them.

**Mark Mitchell** [00:13:46] And you know, her explaining to us meant, was that you're not, you're not trying to build a population as much as you're trying to build the infrastructure that would support the population. So it often takes two or three stockings before the infrastructure is in place. They have a very complicated infrastructure of tunnels and holes and things like that that protects them against the predators, against the weather, against whatever. And honestly, I think that they're one of the species that was put out here that for what they do is they feed other things. And so they have to have some protection. And what you're doing is building the infrastructure with everything you put out there until the

infrastructure is good enough that they can defend themselves against, against the natural predators.

**Mark Mitchell** [00:14:40] And with our first stocking, it took three, it took three releases before they ever took hold. An interesting thing is I really expected, some, you know, some animosity toward this project by the local landowners. Once the word got out, and we didn't try to hide it, we just, we just told, they're a natural animal. God, you know, they were here. They're part of the natural ecosystem historically, and they have a place.

**Mark Mitchell** [00:15:13] It was really surprising how many landowners stepped forward and said they would like to try it. So it didn't take long before, you know, I put Lynda in touch with a private landowner and we began, you know, restocking on his place. He met with the same success I did. The first didn't work. The infrastructure got in the place through two or three subsequent restockings, and now he has two prairie dog towns. And two other ranchers have stepped forward and we've reintroduced them on theirs.

**Mark Mitchell** [00:15:46] It's surprising that what we've seen in the Hill Country is really such a change of attitude, over even 20 or 30 years ago, is that landowners often are wanting to see the natural fauna that was here just a hundred years ago. And you know, they can see a benefit to the prairie dogs without even understanding all the biological implications and roles they play. Being a keystone species, they offer the habitat for many species, which, you know, like a tell landowners, if I had a thousand acres, I wouldn't want a 1000-acre prairie dog town. But if I had a thousand acres, I'd like to have 100-acre prairie dog town because it benefits so many other species.

**Mark Mitchell** [00:16:41] And obviously, you know, we don't have all species here it benefits. But it's been documented. It benefits up to 150 other species throughout its range. Its range going all the way from Canada to almost Mexico, or into Mexico, until you get into the Mexican subspecies. The, you know, some of the things that we've seen here, and our town is obviously very, very new, it's only been established for good for about three years.

**Mark Mitchell** [00:17:09] You know, we, we have not seen a burrowing owl on our place yet. But some of the private landowners we've reintroduced have documented and photographed burrowing owls already using them. That's a species that likes to nest and hide in the homes of the prairie dogs.

**Mark Mitchell** [00:17:27] Of course, you know, with the amount of, the amount of prey species out there in a good, healthy prairie dog town is a food item for animals such as migrating red-tailed hawks and other raptors. You know, that's important to those migrating species. Some of the, some of the birds actually migrate from town to town. The mountain plover is a species that has been documented using prairie dog towns almost exclusively through its migration routes.

**Mark Mitchell** [00:18:01] So, you know, that's all things that we had hoped to see. And an interesting thing that we've already seen is that where we reintroduced the town, it was, it was common to see three to five white-tailed deer in that town. But after the prairie dog town was in place, one night on the spotlight line, we counted 23 deer, and it was so obvious that those deer come to that prairie dog town at night, because it's like a little food plot for them. And, you know, and we're seeing, we're seeing the white-tailed deer and some of the other native species are using, really utilizing that prairie dog town in a way that, to be honest with you, I didn't really expect it.

**Mark Mitchell** [00:18:45] But anyway, it's all good stuff, and I'm very excited that we've got private landowners that are spending their money and effort and wanting to do this. We likely will never have the amount of prairie dogs that we had historically throughout their range. But, you know, if we can, if, if we can establish 20 or 30 10-acre prairie dogs, prairie dog towns, that's, that's a lot of habitat for other things that they depend on.

**David Todd** [00:19:19] That's great. I'm so glad that it seems like you have tried something that was not a sure thing, but, but you've seen success.

**David Todd** [00:19:28] You know what would be helpful, I mean, you told us that it's a keystone species and gave these great examples of how it, its life, affects everything from deer to burrowing owls to red-tailed hawks. Can you tell us a little bit about their own life history? You know, just the prairie dogs own biology and what you've observed?

**Mark Mitchell** [00:20:00] Yes. A prairie dog, is, of course it's a rodent. It's in the rodent family. And when you think of rodents, you think rats or mice or things that they have a super-high reproductive rate that you know, that pretty much live to some extent, you know, alone or not in groups. And the prairie dog is totally, totally different. It's a, it has, it keeps very tight family units called, "coterie". And then they, coterie, each coterie, lives in what we call a prairie dog town, which made up of many, many coterie and unrelated families. But they like to live in very tight densities. It helps protect them from predators.

**Mark Mitchell** [00:20:48] Because you've got, it appears to me and I, you know, I don't want it to sound like I'm a prairie dog expert. This is just a very, very interesting animal that we started working with a few years ago, and I've tried to learn as much as I could about it. But it appears that you've got different animals within a town, and within a coterie or smaller family unit that have, that have their unique things to do, so to speak. You've got some that like to dig. And from what I hear, and Lynda, Miss Watson, has taught a lot of this to me, that the males do very, actually very little digging. The females are the diggers and they dig the burrows. They dig the, the, the, you know, the storage facilities where, whether it's a place to rear young, or place the nest, or sleep, or maybe food storage underground.

**Mark Mitchell** [00:21:39] While the males spend more of their time looking out for predators. And when you go to a prairie dog town, the one thing you notice is just, there's a lot of prairie dogs standing, sitting up on their own hind feet, looking up in the air. And if you watch close enough, long enough, you find out that a lot of times that's the same ones that look to give the warning calls to the others that are out grazing or collecting, maybe, grass to take below.

**Mark Mitchell** [00:22:08] So, you know, it's kind of like a, well, it's kind of like a town that, you know, everybody's got their job to do and they do it.

**Mark Mitchell** [00:22:16] When, when they begin the breeding season, which is in the early part of December somewhere, maybe November or December, they start carrying grass down below to make a nest. Once the babies are actually born in late January or into February, the females will stay underground with the babies for six or eight weeks, and they'll have anywhere from, say, five to eight babies. Ours, typically, when they come aboveground seems to have about six. I think in parts of the range that you know, they may have fewer, maybe parts of the range more. But our clutch size seems to be six or thereabout.

**Mark Mitchell** [00:23:01] And then when they finally come out of the ground, their eyes are fully open, they're fully haired. They look pretty much like they're adults, just small versions of it. And they will stay around the nest with a parent feeding them, and taking care of them and teaching them to be part of the community for a couple of three months. And then, unlike most animals, when they are ready to be weaned and on their own, the parents don't really run them off. You know, they don't run the children off. They say, "Okay, it's time for you all to be on their own. Mom, me and mom are leaving." And the adults actually leave the holes to the, to the little ones, and they move 20, 30, 40 yards and start their new homes. And then the little ones stay behind.

**Mark Mitchell** [00:23:49] They only have babies once a year, unlike a lot of rodents, and they have them in the wintertime, which seems almost backwards in that you would have hairless, small, you know, babies in February in Texas, when the temperatures can hit so hard. Such as last year, even, even in towns that were very well established, that extreme cold spell appeared to, to really get a lot of the little ones. And talking with Lynda, up around Lubbock, Amarillo, where there are old towns that have been there for years, they even didn't have a, even in that environment, that they're more used to cold weather, the cold really reduced the, the little ones for last year.

**Mark Mitchell** [00:24:35] On one of our towns, the freeze last year pretty much wiped out one of our newer towns, which isn't surprising because they didn't have the infrastructure in place to really take care of it. And the established town, where they had the infrastructure they had the holes dug deep enough, they had the holes stocked with food to get through the wintertime, they seem to do just fine, and we had a, we had a good reproductive rate in, in the old town. So that's kind of interesting.

**Mark Mitchell** [00:25:04] One of the things that when we started this, started talking about this, is that one of the apprehensions that we, some of our people had, and some of the apprehensions by some of the locals, especially neighbors, was the concern of plague. We all are very, very familiar with plague and prairie dogs. And you know, when you talk about plague, bubonic plague and one of the other two versions of it, and I'm no expert by any means, it's synonymous - plague and prairie dogs. And so you think that prairie dogs are the cause of plague.

**Mark Mitchell** [00:25:45] Well, I learned a lot through the Texas Human Health Services zoonosis branch that we work with a lot, and through Lynda, and through other research that I've done. Plague is in Texas. It's pretty much throughout the counties. It got to Texas, got to the United States, in about 1900. The first real outbreak we ever saw in Texas was around 1920 in Galveston, and it came in on ships, coming from the eastern United States or Asia. Plague originated in Asia, China, somewhere over in there in the 1800s, when it was first documented. Came to America by way of ships. And because it's transmitted by small rodents, rats and mice, where a lot of the ships that left Asia, you know, they were full of rats and mice, and these rats and mice would bring, brought the disease with them. And then it's transmitted pretty much by fleas that were on a rat. They jump off that rat onto the next rat, and as the flea bites it, it gives them the plague, and that's how it's transmitted.

**Mark Mitchell** [00:26:57] And so in the, in the port cities, back in the 1980s and early 1900s, a lot of those of ports were just infested with rats and mice. In some years, you know, you'd have a lot more than others. And that was what contributed to the Galveston outbreak of bubonic plague in the 1920s, I think it was - summer of 1920. Even though it was considered an outbreak, I think only like seven or 10, maybe a dozen people died. It didn't kill a lot of

people, but it was an outbreak. And nowadays what you see is that plague is, is in the environment. If they tested enough, Texas Human Health Services, they would probably find plague in every county in the state of Texas, if they tested enough species.

**Mark Mitchell** [00:27:47] And but what you get with prairie dogs is a species that has no tolerance to plague. You've got, say, on 10 acres, you may have two or 300 prairie dogs living on 10 acres. That's a high density for any animal, especially a mammal living together. A raccoon who has had been exposed, exposed to plague, goes walking through the prairie dog town, a flea jumps off that raccoon and bites a prairie dog. That prairie dog he bites, and transmits the bacteria to, will be dead within 72 hours, in all cases.

**Mark Mitchell** [00:28:24] But in that time, he's infecting a lot of other fleas that are jumping off him onto his close neighbors because they're living in the same holes, going in and out of the holes, sharing the entrances to the holes, sharing the habitat. And so it can move very fast through a prairie dog town, killing every prairie dog it touches within 72 hours. Some species, such as Mexican ground squirrels, foxes, skunks, raccoons, goats, they can, they can be bitten by a diseased, flea-carrying bacteria. They can get build up the immunity to it, but yet they can be carriers and keep it going.

**Mark Mitchell** [00:29:10] It's not the same way with the prairie dog. Prairie dogs really are a dead-end host. But when you have 200 animals living on 10 acres and a plague would get in it, kills 200 animals, its very noticeable. When it kills one raccoon, walking by himself through the field, or a fox through a field by himself, you're, it's less likely to notice it. So people, they thought that the plague was in the prairie dog town and it exploded, and now the prairie dogs are making everything else sick. And actually it's the other way around, everything else is making the prairie dogs sick. It's really interesting.

**Mark Mitchell** [00:29:47] And wherever you look at plague today, you know, it occurs, occurs a lot in western New Mexico, Arizona, southern Colorado and parts of southern Utah. I was looking at a map just earlier where the occurrences were. Very few people die of plague now because it is very treatable, especially if caught early. You take antibiotics and it's not a big issue. If left untreated, it can be very, it can be deadly. It can be lethal to people if, if untreated. And from what I've been told is that in that area where it is so common to see, in western New Mexico and Arizona and that area, it's a lot of rural people that live out on the land that, that have, you know, their, their homes actually are infested with rats and mice. And that's the main care carrier of the disease.

**Mark Mitchell** [00:30:46] So they know that, yes, the prairie dogs get it. Yes, it kills a lot, but they're not the cause of it, most of them. So they kind of get a bad rap association with them and plague.

**Mark Mitchell** [00:30:57] And that is a big issue when we were reintroducing them, is that the locals would say, "Well, you're going to bring plague in. We read, you know, prairie dogs. We read it has to do with prairie dogs."

**Mark Mitchell** [00:31:09] But we quarantine every animal moved at least five to seven days. A lot of these animals are in quarantine for 10 days. They're dusted for fleas, you know, from the time they go into quarantine. They've been, they've been de-fleaed and there's no fleas on them. And if they had plague, they would be dead before they ever left the quarantine sites.



**Mark Mitchell** [00:31:31] And in 30 years. Miss Watson says she's had like two plague instances to where she brought it to her facility and killed everyone. She cleaned her facility, didn't putting any others in there for a good bit of time. Didn't move any animals for a while. And no more instances of plague.

**David Todd** [00:31:55] That's really interesting how plague moves around and how some animals seem to tolerate it, while these prairie dogs, I guess, are really sensitive to it.

**Mark Mitchell** [00:32:07] Yes. When, when Texas Human Health Services, the zoonosis branch, when they're actually testing for plague, they would much rather catch one coyote or one bobcat, versus rats and mice, because that bobcat represents, say, 100 rats and mice that it has eaten within the last year. And so you'd have to test these, catch 100 rats or 100 mice to test the same amount of testing as one bobcat, which is very interesting to me the way the way they can do that. Some animals seem to have it, can live with it and not be a big detriment to them individually.

**David Todd** [00:32:47] I see. So that's a really effective way to see if it's out there in the environment - I guess to test bobcats, or other predators, that can be exposed and pick it up and show it for tests.

**David Todd** [00:33:00] Well. So you mentioned a couple of reasons why these prairie dogs have had a rough time, I mean from the, the plague that, that, you know, they struggle with. And then also, I think when you first were telling me about the source of some of these prairie dogs being sites that were being urbanized, you know, a road project, or a subdivision. I understand also that, you know, a lot of landowners were really not pleased if they found a prairie dog colony on their, on their property. Can you talk a little bit about this sort of attitude and what their concerns were about the prairie dogs?

**Mark Mitchell** [00:33:42] Sure. Oh, you don't think historically, you know, most of the land, at least in western Texas, it was rangeland. It was land that people wanted to raise cattle on, possibly sheep and goats. But it was, it was cattle, the big, main thing and cows eat grass. Prairie dogs eat grass. And so they looked at it as a competitor to their cow for what grass was available. If you, like you said earlier, if I had a thousand acres, I would not want a 1000-acre prairie dog town. Down on the coast, prairie dogs do not like tall grass. You know, the tall grass makes them vulnerable to predators. So even if it's not something they eat, they're going to bite it off to try to keep it as short grass as they can. That protects them from predators. It looks like the production, grass-wise, is cut down a lot. And so it's a competitor with, you know, with landowners' cows or sheep or goats, whatever it might be.

**Mark Mitchell** [00:34:43] But one of the studies that a guy I know did out in West Texas found that in normal to wet cycles, when the rains are coming, cattle actually prefer the prairie dog towns. That grass is nutritious. It's, it's healthy. It's, it's, it's more, it's got more nutrients in it, per-bite, than where the prairie dogs don't exist. When it got really dry, and this, this study was done at around Marfa, when it got really dry, the cattle would actually move out of the prairie dog town, as you would expect, because it looks like just dirt and they'd move back into the, to the area that doesn't have prairie dogs. But as soon as the rain came, the prairie dog town would be the first to green up, and here come the cows back in.

**Mark Mitchell** [00:35:26] So there was a, you know, historically, there was such a symbiotic relationship between prairie dogs and the buffalo. The buffalo would, would go to the prairie

dog town and of course get nutritious grasses, even though what was there is not, is not a tall grass. You know, it does look like, they do reduce the biomass of the vegetation.

**Mark Mitchell** [00:35:51] Also, you know, there was a perception that, that with the holes out there that cowboys would ride through the pastures, their horses would step in the holes, and break their legs. Or cows would, whatever it might be, might break their legs. But, which I can, I can say that I've never actually talked with somebody that broke their horse's or cow's leg in a prairie dog hole. And, you know, but I can't say that it never happens.

**Mark Mitchell** [00:36:19] But it is a competition thing. You know, I think most landowners who are raising cattle, they want to see grass knee-high, and you're not going to see knee-high grass in a prairie dog town. That's just not, this why they're a keystone species: they alter that environment to fit their needs. And that means not having knee-high grass, you know. And so this was just, it was just a competition thing there, I think that started the animosity.

**Mark Mitchell** [00:36:48] And to be honest, you know, I think they're very easy to control nowadays. If they weren't easy to control, I don't think you see them being eradicated out of almost 95 percent of their historic range. And in towns where they still exist, primarily Lubbock, is what I'm familiar with, is that you see them on vacant lots, very dense, but right across the road, would be a golf course where they can control them and they, they don't affect that golf course at all. So they're very controllable nowadays and landowners can easily eradicate them.

**Mark Mitchell** [00:37:26] And, you know, in a lot of the old, traditional livestock ranchers, just didn't see them as a species that was compatible with what they want to do on the land. I think that's the biggest problem that they've seen.

**Mark Mitchell** [00:37:42] And of course, to a lesser extent, you know, urbanization, because urbanization takes, you know, takes about two to three to five acres at a time, whereas a rancher might take out two or three hundred acres at one time. But the urbanization is, is, of course, a big issue now in the Panhandle and throughout their range, like Lubbock and Amarillo, Midland, Odessa. As they expand, and then they have to take areas that maybe had been traditionally off-limits to grazing or farming, whatever, whatever reason and prairie dogs were doing okay there. And now they're seeing areas, those kind of areas, that want to be covered by an apartment complex or, you know, shopping mall or whatever - you know, everything that urbanization brings. So that's where, that's where a lot of the prairie dogs that we're using are coming from, areas like that.

**David Todd** [00:38:33] I see. Okay, so something else I've, I've read, but of course, I don't really have any real knowledge of, but that some folks speculate that prairie dogs might have suffered from fire suppression and brush encroachment, that it just wasn't the kind of landscape that they evolved to occupy. Do you think is there some truth to that?

**Mark Mitchell** [00:39:01] Absolutely. You know, the western half of the state evolved under a fire regime. And I know in Mason county, I've read that wildfires would come through here every three to seven years. And what that did was that kept your brush, so to speak, kept your brush at bay. You know, cedar, Ashe juniper, which is a very noxious plant in the Hill Country. It's native to Texas, but 150, 200 years ago it was confined to the thickest, roughest draws where fire couldn't get into - the valleys and whatnot. The uplands, the flat, that was a grassland.

**Mark Mitchell** [00:39:40] And with the suppression of fire, it allowed, it allowed a very noxious but native plant, such as the Ashe juniper, to extend its range. Well, when you got a brush species like Ashe juniper, or even like, say, something thinner that looks less, less intimidating, like a mesquite tree, when it's first growing out on the plains, that gives a place for predators to hide. You know, a hawk can sit in a tree, or a bobcat can get behind the little mesquite tree and catch the prairie dog when he's not looking.

**Mark Mitchell** [00:40:13] So it gave the advantage to the predator versus the prairie dog. Also, by, you know, the prescribed fires, what you're doing is you're setting back that plant successional stage and you're making those plants that are there a lot more nutritious. So after a fire and then when the rains come, it's going to be the first place that greens up, and that's your best grazing for, of course, your prairie dogs, but not only that, the other plains animals - the pronghorn, the buffalo, the native mule deer, whatever it was that lived there. You know, fire is just a great tool for making a piece of ground more fertile and, and more nutritious for those wildlife. And with that suppression, what you've seen through a lot of its range is that it's become a brushland, which is not conducive to a good prairie dog habitat. And that's, that's, that's, they all go together: you know, the fire suppression, the brush encroachment, and the reduction of the prairie dogs. So it's all, it's all like a working machine.

**David Todd** [00:41:21] Huh. You know, you mentioned that Lynda Watson is pretty active up in the Panhandle and that a number of the prairie dogs that you, you know, hear of these colonies are up there, and I was really struck by the fact that you're doing this work in Mason which seems, you know, outside of the core of prairie dog colonies that I'm aware of. And I'm wondering if you have an idea of why these prairie dogs might have been less common out where you are into the Hill Country and West Texas?

**Mark Mitchell** [00:42:03] Well, you know, I think here in Mason County, where you had prairie dog towns, they were relatively small. I was reading earlier, you know, at one time it was described as a colony that went from like Midland, Texas, all the way to Lubbock. And 25,000 square miles of a prairie dog colony because you've got contiguous-type habitat that would support prairie dogs. In the Hill Country, we got what you may refer to as pocket prairies: small little areas, maybe 10 acres to maybe a couple of thousand acres, at the best, that is conducive to good prairie dog habitat. The sides of the hills is not prairie dog habitat. The tops of the hills may not be good prairie dog habitat because the rock is too thick. They've got to be able to dig their burrows four to six foot down. And so, you know, we just don't have that much habitat.

**Mark Mitchell** [00:43:02] The reason we picked Mason Mountain to reintroduce prairie dogs, even though we're in, we are in its historic range, but we're not in really great prairie dog habitat. There's nothing more than the fact that this is where I'm stationed. I'm over this Management Area and we wanted to try it. And you know, what we're seeing is, is very interesting. But, you know, even a small pocket of prairie dogs - ten acres - that's a very small prairie dog down compared to what you see in the Panhandle of West Texas historically. You know, but you're putting some habitat back for other animals, even though, even though it's only ten acres. So what we would have had was a lot of small prairie dog towns versus one huge contiguous town for maybe miles that you might see in West Texas or the Panhandle.

**David Todd** [00:43:54] I see, so it's more patchy. This terrain isn't right or it's too rocky where you are in the Hill Country. That's really interesting.

**Mark Mitchell** [00:44:08] They, their holes, the burrows goes, I've read, as much as six foot down. A lot of the hills, the tops of the hills in the Hill Country, you may not have soils six inches. And so they just can't, you know, they just can't dig down to make the burrows necessary for the town. And they, they have a very, very hard time expanding the range by running across the top of the ground, top of the ground, for a hundred, two, three, four hundred yards and starting a town. So the towns basically grow underground, you know, as they dig tunnels. So they dig tunnels more and more underground. And so the colony has to expand like that.

**Mark Mitchell** [00:44:53] Or if they run, run a hundred yards and start a new one, they're vulnerable to predation until they get their infrastructure in place. And so it is, they are very slow to pioneer new areas in the Hill Country because of that. In fact, one of the spots that we initially picked, we feel like the, they will not be able to leave that 20 or 30 acres because of the underground rock will stop their, their tunneling, you know, from going any further. So they're confined to that 20 or 30 acres for the, for the large part, anyway. Hopefully, someday they'll get enough that they'll get something going on the other side of the rocks. But that's not how they expand.

**David Todd** [00:45:39] Hmm. You know, I've read that these prairie dogs are less common than they used to be, and I guess some of the numbers are really high for the amount of decline, over 90 percent.

**Mark Mitchell** [00:45:58] Yes.

**David Todd** [00:45:58] And I was interested to hear that some people are skeptical about what the original estimates might have been. And that, you know, certainly they declined, but maybe they didn't decline from such a big number in the past.

**Mark Mitchell** [00:46:14] Well...

**David Todd** [00:46:17] Do you have thoughts about that?

**Mark Mitchell** [00:46:17] Yeah, yeah. You know, I've read a lot of those numbers . And one of the things you've got to, you've got to remember as biologists: we, we sometimes, I think, put too much emphasis on numbers. You know, we want to be able to count white-tailed deer and say how many deer we got. We want to be able to count this or count that. And for most species, there really is no good population estimate. We just use the best estimate we can. And that's after 75, 100 years of this profession.

**Mark Mitchell** [00:46:48] So when you look back in the mid-1800s and you come up with estimates for numbers. You know, those people thought a whole lot less about trying to count animals than we have for the last 50 years. So, you know, I don't put a lot of stock in the fact that, you know, somebody might have estimated that there was 400 million prairie dogs, you know, in Texas or whatever the number might be.

**Mark Mitchell** [00:47:11] But we do know that, just by looking at the landscape, and, you know, 75, 100 years ago, there was a lot of prairie dogs out on the landscape between, say, Midland and Lubbock, based on the amount, the amount of holes and burrows that you would see, and active burrows, not just, you know, there's a hole, I bet that's a prairie dog, but actually active burrows that are, you know, that for years - 20, 30 years now - have been gone. And those burrows don't even exist anymore.

**Mark Mitchell** [00:47:41] So if you just look at, you know, just, just look at the number of acres that don't have prairie dogs on it anymore, you know, it's been a huge decline. And even though we may not know exactly what numbers to start with, we've got a pretty good idea of how many acres, you know, you know, just, just by looking at old records. And so acreage-wise, I think what's, what's important is that they've been extirpated from 95 percent of their home range. Numbers have, have to be, you know, whatever the starting number is, there's probably 95 percent less than, than there was, you know, 100 years ago.

**David Todd** [00:48:25] So it may be a little easier to count the, the burrows and holes and old colonies, even though you can't count the animals themselves? Is that what you're suggesting?

**Mark Mitchell** [00:48:37] Well, exactly. And to be honest with you, I mean, what does that matter? How many animals you've got? You know, if, if they originally occurred on 60 million acres throughout Texas and through the Plains, and now they only occur on 10,000 acres, that's still a huge decline. And when they occurred on, whatever the number was, 60 million acres. That means they were altering that habitat for a lot of other species throughout West Texas, North Texas, Oklahoma, Kansas, Nebraska, and throughout their range that a lot of those species that lived in association with prairie dogs. You know, the prairie dogs are gone. Well, that habitat has changed and it may not be as conducive to species.

**Mark Mitchell** [00:49:26] We know the black-footed ferret, for instance, is a species that we thought was extinct until a number of years ago we found some in, I think, South Dakota and North Dakota. It lives exclusively on prairie dog towns, prairie dog, in prairie dog towns. And so, you know, some of the other species that seem to be declining: the lesser prairie chicken throughout its range is declining. It may soon be a listed species. And, you know, if it, if it evolved in association with black-tailed prairie dogs, and you take the prairie dog out of the picture, it's got to have some kind of impact on the prairie chicken.

**Mark Mitchell** [00:50:04] A lot of other species also. There's a lizard, dagummit, there's this small little lizard that's on the threatened list that lives within prairie dog range in North Texas. We don't have it down here in Texas or in Central Texas that I know of.

**Mark Mitchell** [00:50:24] Black-footed ferret, for instance, they say that it needs 1800 acres of a prairie dog town to support a colony of black-footed ferrets. Well, 1800 acres is a huge prairie dog town in Texas nowadays. Historically, in the 1850s, there were a lot of areas with 1800-acre prairie dog communities. Nowadays, there are just not very many left that big enough that it would take to support black-footed ferrets.

**David Todd** [00:50:55] It's so interesting - all the connections and they're so intricate and complex between this prairie dog and, you know, all the animals that prey on it or use their burrows. It's interesting.

**David Todd** [00:51:09] Well, tell me, maybe you can kind of walk me through this reintroduction that you've mentioned kind of in passing, but I'd be really curious to hear about the mechanics of, you know, the whole process of relocating these prairie dogs, you know, from collecting them, to transporting, quarantining them, and then, you know, reestablishing them at Mason Mountain.

**Mark Mitchell** [00:51:34] Okay.

**David Todd** [00:51:36] Can you help us there?

**Mark Mitchell** [00:51:36] Yeah, sure. When we first started the idea to do this, of course, we started reading the literature and what other people have tried, and the best literature we could find, the most successful reintroduction. It appeared that you would take the, they're sewer panels, they're like half-round plastic panels - bury them at four to six foot deep, with a plastic PVC pipe that we run to the top of the ground. And that pipe would be enclosed within a small cage of about two foot by two foot. So that when you put the prairie dogs in there, they could run down through that PVC panel into those sewer panels underneath the ground, and it gave them a burrow. And from there, they would eventually dig themselves out from underneath the sides. And at that point, they would, they would feel like this is home, and I've got a burrow to live here.

**Mark Mitchell** [00:52:34] I've been fortunate enough, through my career, to be to be involved with a number of reintroductions, whether it be white-tailed deer, javelina, turkeys, wild turkeys, or, or, you know, Texas horned lizards. We are actually reintroducing Texas horned lizards here too as part of a big collaboration of people.

**Mark Mitchell** [00:52:59] And what you see is that when you move an animal, he immediately is thinking, "I want to go home, I want to go home." As the days go by, and it could be as few as five to 10 days, he's thinking less about going home and just wanting to get something to eat. And then after about 10 days to two weeks, that animal has forgotten about wanting to go home, and he's just thinking about he wants to get something to eat, and set his life up here. Kind of like, not a lot different than people. You know, if you pick up and move from here to New York City. My first reaction would be, "I want to go back to Texas." But after a time, I would get more accustomed to it, to where, "This is OK, I've got something, you know, I can make it here." But you've got to, you've got to restrain them for those first few days, so that they don't just, until they get over that, "I want to go home" thinking.

**Mark Mitchell** [00:53:54] And so this, this was an attempt to do that. You put them in the cage. You put, you put stuff in there for them to eat, like sweet potatoes or carrots or something. But basically what you're doing is you're trying to give them moisture. A prairie dog can live his whole life and never drink, but they get their moisture out of what they eat, whether it be roots or grass or whatever. And so you put carrots and sweet potatoes, and they're given moisture for about 10 days. If they haven't dug out on their own in about 10 days, we would open the cages and let them out. And at that time, hopefully the majority of them decided that this is okay, I'm not going to try to go home.

**Mark Mitchell** [00:54:35] After meeting with Lynda, she said, "That can work, but obviously that's a lot of effort to dig a hole four to six foot deep and do all this." She said, "All you really need to do is take an auger, like a posthole auger on the back of a tractor, dig a hole a couple of feet deep. Put your cage in there and keep them in there for about three or four days feeding them, and then open their cages up.

**Mark Mitchell** [00:55:00] So that seems to work better because a landowner is a lot more conducive to doing that. That's, that's doable. What we did was with the panels was somewhat expensive. Those panels are expensive and it's very, very time-consuming. So we sort of, we've gone to Lynda's idea about digging the small posthole, putting the cage over it for three or four days, and then open the cage.

**Mark Mitchell** [00:55:27] I do believe that by doing it like this, we see more animals that have not gotten over that translocation fear, you know, and they say, "I'm going home." And at that point, on day four to day six, you're apt to see a prairie dog running down the road three, four or five miles from where you released him. He's wanting to go home, but you're getting enough to stay back and start digging and digging their holes and tunnels that, you know, that's how they'll make it.

**Mark Mitchell** [00:55:58] And like I said, on one, two, on most of the towns that we tried to start, it takes about three stockings before they ever make it. And, you know, like Lynda, I heard her saying, is that, "Don't worry about your animals. There's plenty of, there's plenty of prairie dogs that need to be trapped and translocated, and but you're getting the infrastructure built. And once they get that infrastructure built, it's like overnight they just decide to stay."

**Mark Mitchell** [00:56:32] Probably not a whole lot different than the pioneering people who moved West. You know, the first ones were subject to the elements, but as they built towns, built trading posts and whatnot and the infrastructure got in place, they were, the migrants were a lot more successful in making it than they were initially.

**Mark Mitchell** [00:56:49] Same way with prairie dogs. At least, that's the way I look at it. You know, so you put a lot of prairie dogs out, and a lot, and it may be 60, 70 prairie dogs at one stocking. Six months later, you need to put 60 more out there. And then hopefully, about after the first year when they, when they can produce those first babies in that town, those babies are the ones that feel at home. And so you know they think, "Well, this is where I live. This is what the world is supposed to be like." And those, those are towns at that point, we feel like it's a stable enough town, we don't need to restock and it'll make it on its home.

**David Todd** [00:57:30] I see. And tell me a little bit more about like what season in the year you might do these translocations, and how many prairie dogs you need to, is there like a minimum threshold that might be the nucleus for a new town?

**Mark Mitchell** [00:57:50] I haven't, I haven't heard of a nucleus, you know, a minimum threshold. We won't move prairie dogs now until probably July. And the reason being is this is the end of February. Probably within the next week or two, we'll start seeing the little ones emerge. You don't want to move a town when, when the little ones are that small. You want the little ones to kind of be on their own, because you're going to, you're going to obviously catch some of those little ones and move them. And you can't move them. And you can't catch them and move them in the family structure, which is, you know, it's just, it's just too hard to do that.

**Mark Mitchell** [00:58:28] You wait till July before the temperature gets very hot, you have a really, really good chance of those animals making it. And you don't lose many animals, on the catch and transplant, you know. Where you lose them is if it's too hot, they can't build their infrastructure to get out of the heat. You know, if it gets to 105 and they can't get underground, they can overheat. At nights, if it's too hot for them to dig during the day, they don't get their infrastructure built. So at night, they're not deep enough underground that they're safe for predators.

**Mark Mitchell** [00:59:03] And then also after, say, August, after the heat, Lynda starts catching and translocating again in September, October, maybe even as far as November. But she likes to see the temperature, you know, a little bit more conducive towards not, that's not

adding stress to them. There's enough stress being caught, quarantined and then translocated up to 300 miles, whatever it may be. That's enough stress without putting the heat stress on the muscles.

**Mark Mitchell** [00:59:31] As I said before, we'll move 60 to 80 to a town. Likely that first 60 or 80 are going to be down to about 20 to 30, 30 days, 45 days, maybe. So you'll want to add more to that and hopefully that second little shot in the arm you give them, those will have enough infrastructure that they can take that what's there, expand on it, and hopefully that'll be enough.

**Mark Mitchell** [01:00:02] Two towns that I just did, that we've reintroduced south of town, on private lands, we put some, the first batch, out I think in September. We added to those in October, November of '21. And right now expect to see babies emerging any day. They seem to have done really good south of town. It's a lot easier to reintroduce south of town than it is up closer to Mason Mountain edge.

**Mark Mitchell** [01:00:31] So, you know, it may take as many as 200 animals to get a town started. But from a prairie dog standpoint, that's not a lot of animals, believe it or not. You know, 10 acres on the side of Lubbock, that, you know, they might say, Lynda, to remove every one of those animals on 10 acres that's fixing to become a shopping mall or whatever, and there might be 200 animals on that 10 acres. So it's not, it's not a lot of land that takes to support 150 to 200 prairie dogs.

**David Todd** [01:01:08] And when you're trying to pick a spot, is it important to you to consider what kind of soil there is or what kind of grass cover there might be?

**Mark Mitchell** [01:01:21] It is, you know, with, at this point, we can't, you know, we, like on Mason Mountain, we can't be that picky. The ideal situation is land that is deep, doesn't have many rocks, a sandy loam type soil that is growing predominantly a short grass prairie with something dominant, such as buffalo grass. Buffalo or curly mesquite is a prime grass that they like to eat.

**Mark Mitchell** [01:01:51] You don't want to put them in a pasture that is flat, that has a lot of tall grasses, such as little bluestem, Indian grass, because it's just too thick. So you want that, that short grass prairie, dominated by buffalo grass. And you don't want much slope. It's shown that, you know, anything, I can't remember exactly, but above five or 10 percent slope, they don't seem to like that.

**Mark Mitchell** [01:02:18] Where we put them on Mason Mountain, they actually have some slope. They seem to be doing okay, but they don't prefer that. So the flatter, more level ground you can put them on, with four to six foot without any major rock, and with the short grass, prairie-type system, is the, that's the preferable, preferable area.

**Mark Mitchell** [01:02:39] But if a landowner, you know, if he's got a little bit more slope or maybe some areas of grass, you know, is maybe not so much buffalo grass or curly mesquite, we may work with you because you just try what you can try and hope for the best.

**David Todd** [01:02:58] Well, and you, you work with some of these private landowners, and I'm just so intrigued by how the, you know, how the diplomacy works because I think you've mentioned that there's been hesitation and kind of skepticism about reintroducing prairie dogs where they've been gone for a long time. How have you, maybe you can just give me a



couple of examples of how you've approached neighbors and said, "You know, why don't you try this?" How's has that gone?

**Mark Mitchell** [01:03:29] Well, I'm not going to approach a neighbor. I'm not going approach any landowners and say, "Hey, what do you think about prairie dogs?" And that's what we are. We are a research and demonstration area that we give tours. We talk about, you know, wildlife management techniques and try to demonstrate them, those that we do here, that a landowner might say that fits my, you know, that fits my goals, that fits what I'm doing. And so everybody that has tried this, you know, they were on a tour or talking to us and we talk about prairie dogs and they, they're the ones that ask me, "Hey, that fits what I'm want to do with my property. How do I go about it?" That's the kind of people I work with.

**Mark Mitchell** [01:04:12] I'm not going to, you know, it's not my business to try to talk a landowner into doing something that he's maybe hesitant about or not 100 percent for, because it's not going to work. It's a lot of effort. It can be a lot of expense. And if a landowner is not really anxious about it himself, and excited about it, it's not going to work. It just surprises me how many of the landowners that have come out, saw that and really liked it and want to do it. Some of them actually, you know, we go to their place and say, "I love to work with you and but you just don't have the habitat, you don't have the soil types, you just don't have the habitat suitable. So there's no sense even trying it."

**Mark Mitchell** [01:04:56] You know, I think I've been working with private landowners for, you know, close to 35 years, over 35 years, with Texas Parks and Wildlife and to, to really get involved in conservation is a privilege. Because for many landowners they have to, you know, they're having to pay for their land or support, you know, their family. You know, it's, it's a money-making deal owning land to them. And it's hard, it's hard for those kind of people to justify, how can this, this can benefit, how can this make that land more profitable? So what it takes is it's going to landowners who aren't requiring, you know, requiring that the proceeds from that land to actually support themselves. So it's quite an honor to be able to do that, to be in a position as a landowner to where this fits what you want to do and financially, it is not a burden to you.

**Mark Mitchell** [01:06:02] Well, now I think in the long run, I think a lot of landowners will see benefits from it. But I don't, you know, I can't say that, that it's a good investment of money, to be honest with you. But because I don't know, I don't know how financially how much benefit this would be. So for that reason, I would never try to encourage landowners to do it. It's got to be something he wants to do, something he feels deep down in his heart that it's beneficial and he would like to see done.

**David Todd** [01:06:34] I see so, so basically what you do is you run a demonstration. You show them, but you don't tell them.

**Mark Mitchell** [01:06:42] Yes, exactly. Exactly.

**David Todd** [01:06:45] Okay. And when you've spoken to folks who have, you know, come to see that it might benefit their operation, what do you hear from them? And what is it that appeals to them about these prairie dogs. You know, they're, they're not the typical game animal. You know, they're not charismatic, really. You know, what is it that draws them in, do you think?

**Mark Mitchell** [01:07:12] Well, I've got to disagree with you a little bit. To me, they're very charismatic little animals. And everybody that has done this, the more they learn about them, the more they see them, the more charismatic it becomes. It's really hard to explain, but one of the most successful landowners I I work with, they even have a viewing tower built to where, you know, when they have friends come over, whatever, they go sit up on this little tower and just watch prairie dogs for an hour. They're very entertaining to look at, and then to see what other birds are using that area.

**Mark Mitchell** [01:07:51] And the birds, you know, the other birds using that, that area is the one thing that, that is really noticeable right quick, because you'll have, you know, a lot of songbirds, migrating songbirds, meadowlarks, whatever it may be, lesser shrike or whatever that are using that, they can turn around and look on the other side, you know, where there are no prairie dogs, and see there are no, there is not the birdlife in that untouched land as there is in the prairie dogs'.

**Mark Mitchell** [01:08:20] You know, there's times early in the spring that, that prairie dog town will be so much more colorful with flowers. And as a result, your early butterflies, there'll just be thousands of butterflies in that prairie dog town eating, and a lot of it is a plant called a verbena, because of the verbena flowers. And when you turn around and look where prairie dogs aren't, there's not a butterfly.

**Mark Mitchell** [01:08:44] So, you know, I think we're, you know, we're getting, we've really, really fortunate in Texas, to where so much of our private land now is, is not being forced as the number one breadwinner for the owners. And, you know, conservation is kind of a privilege to, or, you know, it is kind of a privilege to those people who can afford it and these landowners, so many of them nowadays, they want to make it as natural as they can, to put it back as it was before, you know, land we, the people, have changed it and they want, they'd love to see every species that nature naturally put out there on their property.