

00;00;11;12 - 00;00;32;02

Dana

Welcome back to the Extension Experience podcast. I'm Dana Zook. This week I have Dr. Lauren Goodman back with me and we are going to talk about cedar trees. But before we get going, I'm not going to make you introduce yourself again. Laura, you've recently been on, but I would like maybe give the listeners some insight on what sort of fun things you do outside of work if you have a teeny tiny bit of time.

00;00;32;02 - 00;00;33;03

Dana

Yeah. Or yeah.

00;00;34;13 - 00;00;55;11

Dr. Laura Goodman

So my husband and I have a horse business. He's he's a trainer, full time horse trainer with working cow and reigning horses. And we, we breed some horses as well. So quarter horses and paint horses. So that keeps us pretty busy. And then we have four kiddos too. So yeah. So basketball, softball, all that, right? Yeah.

00;00;55;12 - 00;00;57;09

Dana

To all kind of fun things.

00;00;57;12 - 00;01;03;01

Dr. Laura Goodman

Yes. All the kid activities. So that definitely keeps us pretty busy.

00;01;03;01 - 00;01;20;28

Dana

Yeah, that's really fun. Yeah, it's a good, good time. Your kids are a lot older than mine, but we do share lots of kids stories. Yes, Laura is a good mentor. Mother. Mentor for me, as I have my kids. It's like you

had your you had your twins and then I had my first child. So we're just like boom boom boom, yeah, okay.

00;01;20;28 - 00;01;41;01

Dana

So we had discussed drought, you know, pretty significant time. We've talked, you know, how this drought is impacting our grasslands. I wanted to switch gears in this segment and focus on what you have. So interestingly termed a green drought. Okay. So tell us the listeners a little bit about this term. Okay.

00;01;41;16 - 00;02;06;04

Dr. Laura Goodman

Yeah. So we are pretty used to dealing with drought in the Great Plains. It's just the reality, especially in the southern Great Plains, that we are going to have years that are pretty dry and we're used to that. What what has been a more recent development would be the increase in tree cover in our pastures. You know, most most of Oklahoma was historically prairie.

00;02;06;04 - 00;02;44;23

Dr. Laura Goodman

We have oak, hickory and pine oak bluestem forest types and cross numbers across the middle. But most of Oklahoma was some kind of prairie tallgrass very short grass. Prairie makes grass prairie and didn't have a bunch of trees everywhere. Really limited tree distribution. But you know, since we settled it and there was there was a strong push when when folks were settling Oklahoma to plant trees and wood lots and shelter belts and all sorts of things, and then, you know, at the same time as that was happening, we were trying to prevent as many wildfires and and understandably, we don't want structures burning.

00;02;45;03 - 00;03;11;28

Dr. Laura Goodman

But historically, the Great Plains, there was a lot of fire happening in the Great Plains. Most of Oklahoma has a fire return interval, meaning that fire was returning over the exact same locations every 3 to 5 years. And so that was keeping these trees from taking over these areas and keeping it as a grassland. And that's for for grasses to dominate prairies, there has to be a certain amount of fire.

00;03;11;28 - 00;03;37;03

Dr. Laura Goodman

That's just the reality of the ecology of prairies that's been eliminated or or decreased in frequency to a fair amount across our state. And so we have trees that are going everywhere and eastern redcedars. The biggest issue yeah, I call I call it the green drought because, you know, we might experience a one year drought, a two year drought or or heaven forbid, a three year drought.

00;03;37;24 - 00;04;12;08

Dr. Laura Goodman

But when we have trees that have taken over areas, that's that's a long term I mean at Eastern Redcedar can live for 400 years, right. So we can have a drought when we allow these trees to take over that lasts decades or longer. And so we drop the productivity in these pastures dramatically. There is there is some research done here in Stillwater where we looked at production in areas that had no cedar cover, and then it ranged all the way up to 80% cover, which is.

00;04;12;14 - 00;04;13;01

Dana

Oh my goodness.

00;04;13;01 - 00;04;53;13

Dr. Laura Goodman

Horribly dense forest woodland, I should say, of cedar trees. And basically for every 10% increase in tree cover, you got a 400 pound per acre loss in grass production. And so when you're looking at how many cows that will carry that you can stock on an 80 acre pasture, it changes from being able to carry ten cows a year round in an 80 acre pasture or eight acres per per cow to only three only carrying only being able to sustain grazing for three cows on 80 acres, which is that's horrible.

00;04;53;13 - 00;04;57;05

Dr. Laura Goodman

I mean, you basically you just moved to a different state.

00;04;57;12 - 00;05;00;08

Dana

I was going to say like New Mexico is that even though the.

00;05;00;12 - 00;05;02;11

Dr. Laura Goodman

No, I mean some in some areas.

00;05;02;11 - 00;05;03;02

Dana

Yeah, like.

00;05;03;02 - 00;05;29;05

Dr. Laura Goodman

Desert, some areas even worse. But yes, I mean you've just moved to an area that you've you're you're talking about very low rainfall amounts. And so we have this happening all over our state and we don't yeah, we have the we have the ability to completely change that in our pastures. We we can't change how much rainfall we get, but we sure can make management decisions to help control and prevent trees from, from taking over.

00;05;29;16 - 00;05;45;26

Dr. Laura Goodman

So we're we're continuing to learn and we we know we've known that this has happened in our state. There was some research that was done even in, you know, in the eighties, looking at the the changes in some of our counties from the fifties to the eighties. And there was already some counties that had had, you know, pretty large increases in cedar cover.

00;05;46;13 - 00;05;54;21

Dr. Laura Goodman

But I think it's just been something that happened so slowly or I mean, it's happening quickly, but your eyes don't.

00;05;54;21 - 00;06;18;28

Dana

Notice, right? You're looking at it every day, but you don't. It's kind of like when your kids grows out of their jeans. Yeah. Like, oh, oh, that just happened. Like, you know, whether if you if you all saw every couple of, you'd be like, oh, yeah, that kid did grow. That's a strange kind of thing. But yeah, I think that's what happens is like you see it every day, but you're not noticing what happens unless you took a picture one year.

00;06;18;29 - 00;06;25;02

Dana

You took a picture the next year or maybe five years later. Yeah. And so this is happening not just here in Oklahoma.

00;06;25;10 - 00;06;53;12

Dr. Laura Goodman

Oh, no, it's it's happening all over. Well, it's happening all over the west, really. So Eastern redcedar is actually a juniper species. *Juniperus Virginiana*. And juniper species are the you know, they they have a hard time behaving themselves. It's yeah. So this has happened all across the West, you know in in New Mexico it's *juniperus monasperma*

00;06;53;12 - 00;07;23;09

Dr. Laura Goodman

And in Texas we have ash juniper and a red berry or PINCHOT Juniper. Yeah, it's happening all over the place. And so these, these species are not soil specific. So in Oklahoma we have a bunch of oaks that, you know, they pretty well behave themselves. They kind of stick to the sandier soils. They don't they don't come out into our clay loams and our or tighter soils, but the cedar trees do.

00;07;23;09 - 00;07;50;04

Dr. Laura Goodman

And the cedar trees will take over areas that, you know, historically have been grassy, but they also take over areas that have been forested. I mean, we have we have them. They're encroaching into forests and in causing issues in forest health just as much as they are in prairies. And so they're they're the main culprit. But we have a lot of other trees that are also native to the state but are growing in areas they didn't always live in.

00;07;50;04 - 00;08;15;09

Dr. Laura Goodman

So like black locust, for example, Black Locust was only really found in one county in Oklahoma, way far east, and now it was planted in wood lots in the west side of the state. And we'll see. You'll find black locust and honey locust in areas out west that was never their historically. So yeah, we have a lot of trees that are growing lots of places.

00;08;15;09 - 00;08;34;18

Dr. Laura Goodman

Luckily, Eastern redcedar is fairly easy to kill. That's not true for all of these species, but if you cut it below its lowest most branch, you can kill it. If you burn it and it completely consumes the canopy. We don't have any green left after that fire. You can kill it. That's better than most of these re sprouting species.

00;08;34;20 - 00;08;41;20

Dana

It does not sprout, which I. That was new to me when I came to Oklahoma. Like I didn't know that it didn't sprout. So that's an advantage.

00;08;41;20 - 00;09;02;11

Dr. Laura Goodman

Yes, for sure. Yeah. So we also have ash, juniper or blueberry juniper in Oklahoma that also doesn't resprout We also have red Berry that does resprout. Oh, not you know, there's southwest Oklahoma, we have Red Berry but okay. But that one does re sprout. So if you're managing that one, that one you'd have to treat the stump or else it would, it would resprout.

00;09;02;21 - 00;09;03;00

Dr. Laura Goodman

You cut.

00;09;03;00 - 00;09;08;16

Dana

It. Some people believe these trees are good for wildlife. Yeah. What's the validity of that statement?

00;09;08;16 - 00;09;16;16

Dr. Laura Goodman

Well, any time anybody says that something's good for wildlife, you have to ask, well, what species is it good for? Because, of course, you can find a wildlife species that.

00;09;16;27 - 00;09;19;03

Dana

The birds like it. Like the flying birds. Yeah.

00;09;19;12 - 00;09;44;23

Dr. Laura Goodman

So I know that most of the birds that like eastern redcedar, we've got a lot of generalist birds that like eastern redcedar and we don't the birds that are of the most concern in Oklahoma are our grassland birds, because regionally grassland across North America, grassland birds are in the greatest, steepest decline versus any other bird guild. And that that's because we the grasslands have been pinched from a lot of angles, Right?

00;09;45;04 - 00;10;11;01

Dr. Laura Goodman

Grasslands make excellent crop fields right. So we use them in that we need to, but they're being pinched from that side. So we've had conversion, but then we also have this woody plant encroachment that's happening and it's taking over. And so it's happening at the greatest rate in Texas and Oklahoma. But Kansas, Nebraska, the Dakotas, Montana and Wyoming, it's happening in all of these states.

00;10;11;15 - 00;10;36;00

Dr. Laura Goodman

Yeah, it's just happening at different rates. And and in some states, you know, we're lucky in Oklahoma that people have stopped planting cedar trees and shelter belts in most of the state. And our and we have a great forestry service that agrees that it's not a tree that we want to be planting everywhere. We we just we're getting overrun with it in some in some places.

00;10;36;00 - 00;10;39;23

Dr. Laura Goodman

And it's happening on the west side of the state, too, which is, you know, is.

00;10;39;24 - 00;10;45;09

Dana

It's making a march. It's almost like the pictures that you've shown. It's just is marching across the state from east to west.

00;10;45;09 - 00;11;06;18

Dr. Laura Goodman

Yep. And, you know, it's it's hard for livestock producers. It can be very expensive to manage these, especially once they get large because they grow so big with fuel prices and everything. It's well over \$300 an acre now to pay somebody to come in and do mechanical treatments, at least any time that I've had it done, it's been well over right.

00;11;06;22 - 00;11;22;02

Dr. Laura Goodman

You know, and it's increasing our wild fire issues with being able to control wildfires like wildfires that are in grasslands are much easier to get put out than when they're burning a cedar woodland.

00;11;22;02 - 00;11;27;16

Dana

And oh, my goodness, they're just like, are they oily? Is that what makes them just ignite?.

00;11;27;20 - 00;11;47;24

Dr. Laura Goodman

There's some there's there we call them a volatile fuel there's a there's some oils in them that make them once they do light makes them burn very hot and the flame lengths on a cedar tree that's burning can you know be 100 feet high. I mean, it's crazy. And then, then you just it's so hard for it. It's dangerous for our right.

00;11;48;06 - 00;11;48;21

Dana

The safety.

00;11;48;21 - 00;12;10;06

Dr. Laura Goodman

Firefighters. Yeah. Like, you know and the scariest part is when they're when they're close to structures and to homes and stuff. And, you know, I think people are Oh, well, it's an evergreen, so it's a good privacy plant. But it's such a dangerous plant to have near near your home that that's probably the scariest part about. Yeah. About these trees being planted around.

00;12;10;13 - 00;12;10;27

Dana

Yeah. And we're.

00;12;10;27 - 00;12;11;09

Dr. Laura Goodman

Allowed to.

00;12;11;09 - 00;12;38;00

Dana

Grow. We've witnessed and I mean since I've been an extension, two or three very large wildfires in the West and we've just been experiencing this the spring. Yeah. You know, in very populated areas. So yeah, just, yeah, just, it's a real big safety issue. Yeah. In your talks that you did in our Forge meetings across the Northwest this spring, you are, you quizzed the producers, you said you gave them a picture and you said are the few cedar trees in this picture.

00;12;38;00 - 00;12;55;25

Dana

There was a couple. Do you think that this is a problem? And you asked them that and we had that discussion. People now that have lots of pastures that are shorter than normal, that you can really see those teeny tiny cedar trees out there. So talk about the risk of encroachment. Are these little tiny cedar trees that we see here and there around our pastures?

00;12;55;25 - 00;12;58;28

Dana

Are they are they should they be a concern or should we just ignore them?

00;12;58;29 - 00;13;16;05

Dr. Laura Goodman

Yeah. So the easiest time to control those trees is for sure when they're small. So we know that these trees start to produce seed at about five or six years old. At around six years old, they're producing seed at about five feet tall. That's usually about the height that they are when they when they start to produce seed.

00;13;16;05 - 00;13;35;28

Dr. Laura Goodman

So there's separate male and female trees when they start to produce seed, of course, then you just have that many more seedlings that you're going to be dealing with. So when we have these seedlings, if we can kill them before they start producing seed, of course then we have less trees that we're going to be battling in the years to come.

00;13;36;04 - 00;13;56;22

Dr. Laura Goodman

It's best to try to control them and it's by far the best economic decision to control them. When they're small. It's cheapest then. And so we can we can kill them with fire if they're really small. If you're haying or brush hogging, you know, you can you can kill them. Sometimes we have a wildfire come through and kill a lot of trees for us.

00;13;56;22 - 00;14;20;25

Dr. Laura Goodman

But then there's a couple that remain alive. And so there's a couple options that you can if you're if you're comfortable with it, you can go in and do individual tree ignitions while everything's still black. And there's no fuel when when the weather conditions are all right. You know, we have low wind speeds and stuff. We can go in and or we can cut those, cut those trees down and just completely eliminate any of our seed sources.

00;14;21;08 - 00;14;40;11

Dr. Laura Goodman

And so preventing seed production really should be the goal. I think what's happened is we we sometimes ignore the ones that are growing in the fenceline or in an area that maybe where we hay, we're out of an area that we're haying, but there's a spot that's kind of rough that we never hay. And the the cedar trees start to fill in that spot.

00;14;40;23 - 00;15;11;01

Dr. Laura Goodman

The minute you start the year you start and you stop haying that hay meadow. It doesn't take very long for those cedar trees because there's all this seed that's been scattered over those over that land. And the cedar seedlings start to grow really, really quickly. The the issue is, is that each of those female cedar trees, the seed that she's producing or is producing, is being spread over about 26 acres.

00;15;11;01 - 00;15;37;07

Dr. Laura Goodman

So about 200 yards from that tree is how far those seeds are getting spread. And they're mostly being being spread by birds. There are certain birds that like to eat those seeds and they'll eat the berries off of the trees. And then the and then it's they're getting spread all over the place. If we can keep, you know, we can make sure we don't have any seed bearing trees, that's really our best way to prevent encroachment.

00;15;37;21 - 00;15;46;09

Dr. Laura Goodman

You know, if you looked at how many trees it would take to completely contaminate an 80 acre pasture.

00;15;46;11 - 00;15;47;15

Dana

Oh, it's not very many know.

00;15;47;15 - 00;15;48;24

Dr. Laura Goodman

What is it, Three. Four.

00;15;49;10 - 00;15;54;10

Dana

Is it like. Yeah. Four trees. Yeah, sure. Like if they were all female.

00;15;54;15 - 00;15;55;14

Dr. Laura Goodman

Yeah exactly.

00;15;55;14 - 00;16;06;13

Dana

Yeah. So it is a huge concern. So, so I think you've talked about our priorities as far as cedar control. What are our priorities? Priorities sound like. There are those tiny trees.

00;16;06;20 - 00;16;24;25

Dr. Laura Goodman

So I would say if you so if they're teeny tiny, you have a couple of years to kill all of the seed bearing trees. You don't need more seeds and more seeds and more seeds every year. Get rid of as many as you can. And if you're a smaller landowner, if you can work with your neighbors, it's best to do so.

00;16;24;25 - 00;16;39;16

Dr. Laura Goodman

Like if if they're if you know, if you guys are on good terms and you can all can kind of come to the same agreement that we want to make sure to not have to deal with this issue, let's kill all these female trees. You know, if they have berries on the ground below them, they are female trees.

00;16;39;16 - 00;16;40;24

Dana

Okay. That's a good point.

00;16;40;24 - 00;16;48;15

Dr. Laura Goodman

I mean, on the branches, you know, that's a female tree. The male trees are the ones that kind of have like yellowish light green tint because they're pollen producers.

00;16;48;15 - 00;16;50;19

Dana

Okay. Well, that's a reason to kill them, too.

00;16;50;19 - 00;16;52;10

Dr. Laura Goodman

Well, that's true. That's true.

00;16;52;29 - 00;17;02;19

Dana

Are we all dealing with this spring? Holy cow. I'm sitting here rubbing my eyes. Oh, the wind and the dust and the pollen. Yes, but, you know, keeping keeping them. Keeping the places that are clear.

00;17;02;19 - 00;17;31;26

Dr. Laura Goodman

Yeah. So focusing your management in the areas where you have, you know, a lot of time, really, we're like, oh, we can make the biggest dent if we cut all these trees that are in a clump. Well, all those trees that are in a clump are all impacting the same acres. Right? So don't focus there first because they're going to take the most time, focus on the trees that are scattered everywhere, that are impacting 26 acres each, you know, and and get rid of those trees there.

00;17;31;26 - 00;18;15;29

Dr. Laura Goodman

There we do have a herbicide. That pronone pellets is a herbicide that it's same thing that's in bell parts as indeed that's a so those are soil applied herbicides Pickleram is a foliar or apply. if you know whatever means you need if you if you if you have the equipment to cut them mechanically or use a herbicide whatever, kill those mature trees and prevent any more seeds from being, you know, spread out on your property and then and then focus on those trees and make sure that you kill those small trees before they're seed bearing so you don't have to deal with more and more incoming seed, just refocusing on making sure that we're

00;18;15;29 - 00;18;37;28

Dr. Laura Goodman

kind of trying to keep the areas that are open as open as possible. And then I would say last priority is those dense woodland areas. Those areas are going to take more work and they're worth working on. But keeping the open areas open is the cheapest and easiest thing to do. To start out with.

00;18;38;16 - 00;18;58;04

Dana

I've always thought also like the areas that have had wildfire go through and they have the skeletons. You've always said that those are perch spots for birds to spread. More seed. Yeah, those are a problem. Sue Yeah, they're dead because they've been burned. They really need to be removed in some way. If, if you can do that in some ways, yeah.

00;18;58;07 - 00;18;58;26

Dana

Interesting.

00;18;58;26 - 00;19;28;14

Dr. Laura Goodman

They end up going back, so. But those cedar skeletons aren't going to break down before that area's re invaded or re cedar trees are reestablished there because because you do have so many perch sites and then the birds are just dropping seeds back in those locations. And we have some landowners that have gone in and and done mechanical treatments or they've gone in with the shears or saws and cut in and cut those trees down.

00;19;28;25 - 00;19;46;01

Dr. Laura Goodman

There's also we also have a, you know, a chain that you can drag between two dozers and knock all of those skeletons. They need to decompose, they need you need the roots to start to break down so you can really knock them over easily. They have the the lowest amount of soil disturbance.

00;19;46;19 - 00;19;49;09

Dana

Like three years, right. You say three or four years.

00;19;49;11 - 00;20;12;07

Dr. Laura Goodman

A couple of years, Yeah. Yeah. You could, you could probably do it after after one or two. It depends on the soil type. Right. But anyway then, then you know that chain kind of also helps to kind of bunch them up and then you can burn up right in burn piles. You know, some folks, after the grass starts to regrow underneath those cedar skeletons, sometimes they'll start doing burns through there.

00;20;12;07 - 00;20;23;06

Dr. Laura Goodman

And those that that's another way to do it. There's lots of different things you can try. There's definitely re invasions that happen and the cedar skeleton areas.

00;20;23;19 - 00;20;50;12

Dana

I can I can hear people thinking, I can hear people thinking? Oh my gosh, this is so it could be so expensive. But that's why we're saying keep the clear places clear and slowly work on the problem. Problem places. You know, it's all about prevention, which is a lot of things. But this to me, you know, with the cost of fuel and equipment, oh, so expensive to, you know, get rid of those large cedar trees.

00;20;50;12 - 00;20;57;15

Dana

But I think it's a it's a task worth trying. Yeah. You know, works work worth working at, you know.

00;20;57;28 - 00;21;18;17

Dr. Laura Goodman

Yeah. And I think, you know, coming up with a long term plan, like what is the what's the approach I'm going to take and how am I going to try to remain remain as cedar free as possible. There's definitely cost share money available for cedar removal. Yeah. And you know, I just saw that there there was that bill that passed with the North Canadian watershed.

00;21;18;17 - 00;21;48;09

Dr. Laura Goodman

They're going to be hopefully putting some money towards helping people keep keep the North Canadian clear as well. And so I think we have some help available for for people that are interested in doing this. But I think regardless of how you do it, just coming up with a long term plan because it's not kind of a you know, what we what happened a lot in the past was that people would get maybe cash or money from in or see us or something like that.

00;21;48;09 - 00;22;07;29

Dr. Laura Goodman

And they would they'd cut off the cedar trees, but then there wouldn't be any kind of follow up treatment. And then areas get re invaded. And we know that the invasion comes faster even than the initial invasion, because we just have all these seed sources that were there for a long time. And even though we cut them down, there's still seeds there.

00;22;07;29 - 00;22;34;21

Dr. Laura Goodman

And they don't they don't remain viable for very long. Just a couple of years, actually. The seeds after about two years that most of those seeds are dead if they haven't started growing. But we've got to stay on it and we've got to make sure that we don't allow any seeds to reach maturity again. And so that's why that fire return interval of every 3 to 5 years, you know, if you're having if you have fire every five years, you're not allowing anything to get to maturity to produce seed.

00;22;35;10 - 00;22;39;20

Dr. Laura Goodman

And that's what prevented this from happening in the past. So anyway.

00;22;39;22 - 00;22;47;00

Dana

Such good discussion. I think it's I think it's a topic just we just need to continue to talk about, you know, for.

00;22;47;00 - 00;22;53;27

Dr. Laura Goodman

Sure it's the number one thing for for forage production. It's it is decreasing forage production more than anything else in our state.

00;22;54;07 - 00;23;13;01

Dana

Yeah. And you see it everywhere. Nobody is immune. I mean, great, great topic. Laura. I hope the listeners have learned some things. I know I have definitely about the seed bank. Like, don't even think about that when you think about cedar trees, but that's a big deal. So all, all of the information we talked about today, some supporting material will be in the show notes.

00;23;13;08 - 00;23;17;02

Dana

But thanks, Laura, for joining me on these two segments. No problem. Yeah, it's great.

00;23;17;02 - 00;23;17;25

Dr. Laura Goodman

Thank you so much.

00;23;17;25 - 00;23;52;09

Dana

So we'll have all that available to you. I hope you guys have a great week and we'll catch you next time.