



## Prairie Pod Transcript

Season 5, Episode 47: Prairie: What have you done for me lately?

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Guest: Scott Roemhildt (DNR), Omar de Kok-Mercado (Iowa State)

Podcast audio can be found online at [mndnr.gov/prairiepod](http://mndnr.gov/prairiepod)

### Transcript:

((music playing - sounds of birds chirping and wind blowing))

Megan: Hey Prairie Pod listeners, I'm Megan Benage, regional ecologist with the Minnesota Department of Natural Resources.

Marissa Ahlering: And I'm Dr. Marissa Ahlering, lead scientist with the Nature Conservancy in Minnesota, North Dakota and South Dakota.

Sara Vacek: I'm Sara Vacek, wildlife biologist with the U.S. Fish Wildlife Service, based out of the Morris Wetland Management District.

Mike Worland: And I'm Mike Worland. I'm a wildlife biologist with the Minnesota DNR Nongame Wildlife Program.

Megan: We are part of the Minnesota Prairie Conservation Partnership and we are here to help you discover the prairie.

Marissa: Discover the prairie.

Sara: Discover the prairie.

Mike: Discover the prairie.

((music playing and sounds of birds chirping))

Megan: Hey, welcome back to the Prairie Pod listeners. We are so excited for this episode we have for you today. We've got lots and lots of special guests to try to make dollars and cents c-e-n-t-s or s-e-n-s-e. You didn't know there'd be a spelling challenge

today but there is. Out of Prairie Economics. So I know, this is like a topic that comes up a lot, What Have You Done For Me Lately? Prairie, what have you done for me? One of the hardest things that we have to quantify is how much things like clean air, drinkable water, flood control, and healthy soils are worth. How do you even go about quantifying the benefits of ecosystem services and what's the cost when we lose the land that provides them? So probably even harder to quantify are all of the intangible benefits that we get from the prairie, and we've talked about these before on the podcast. Things like mental health and well-being, spiritual connections, a sense of peace. These are all things that we get from the prairie, it gives it to us. So today, we're going to take a deep dive into the prairie pocketbook and we're going to try to figure out from pheasant hunting to an improved quality of life how do we make the math check out to make dollars and cents out of prairie. Are you guys excited? My guess you're all not - -

Korey: Very excited.

Megan: Okay. They're just all nodding, which is great on an audio-only podcast. I swear it's going to be great today, I promise. So here's what's going to happen. I'm going to introduce you to our fabulous guests and our guest cohost of the day, and then we're just going to jump in because we have a lot to cover and we want to make sure that all of you get all of it, all the information. So I'm Megan, you guys know my voice, you hear me all the time. Korey, do you want to go ahead and introduce yourself as our guest cohost for the day?

Korey: That sounds good. My name is Korey Woodley. I'm the new ecological and water resources regional manager, and I'm really excited to be here.

Megan: And you're going to do great. You have all the questions. All the same questions that our listeners have.

Korey: I do. I believe that I have all the same questions, yes.

Megan: Or at least we've got some good ones that we're going to ask. And we're going to ask them of our two very special guests, Scott. Let's start with you. You want to introduce yourself?

Scott: Hello there. I'm Scott Roemhildt, I work for the Minnesota Department of Natural Resources and my title is South Region Director, and what that means is I work across all seven of our DNR divisions in 32 counties of south central and southwestern Minnesota.

Megan: Wonderful. Omar.

Omar: Howdy folks, glad to be here with you all, and I'm Omar de Kok-Mercado and I'm at Iowa State University and I coordinate a large transdisciplinary research group there where we're trying to integrate prairie in row crop fields and yeah, just pave the path in prairie and try to change the landscape.

Megan: I like that pave the path in prairie, not in pavement, but in prairie. I like it so much.

Scott: We can make it happen.

Megan: We can make it happen. I love that confidence. We're going to jump right in. This is Prairie Economics 101, folks. So we're going to start with how we measure the value of prairie, and we're going to start with ecosystem services. So Omar, tell us a little bit about what are ecosystem services and why they matter.

Omar: Great, yeah. So ecosystem services are, you know, what nature can do for us, you know, plants clean air and filter water, bacteria decompose waste, bees pollinate flowers, trees, you know, with their roots hold soil in place to prevent erosion. Those are some of the basic like top five ecosystem services, and then, you know, part of those, like you were saying is like that spiritual connection as well. Like what, how do we value outdoor space, time in the forest, forest bathing, you know, prairie bathing, that sort of thing, so those are your basic, you know, kind of services that nature can provide and how can we leverage that and, you know, help use nature to filter water and, and provide those services for us.

Megan: So I heard you say a couple things, and I'm just going to start with so like water filtering, soil building, carbon sequestration, clean air, those sorts of things, but then I also heard you say forest and prairie bathing. Now, I know what that is, but just so our listeners understand, we're not asking you to roll around in the prairie and then go home and be like mom, dad, I'm clean. There's, it's something else entirely. Omar, do you want to just explain a little bit what we mean by prairie and forest bathing?

Omar: Sure, so, you know, there's psychological studies that have demonstrated that spending time outdoors is beneficial to our mental health, you know, getting sunshine on the skin, getting our bare feet on the ground, and, you know, one of those things is like going out in the woods and just being out in the woods and listening on the trees and the birds and being out in the prairie and being out in the prairie listening to the birds and the bees and, yeah, getting sunshine on our face and that's called forest bathing. And, you know, we're just going to bring that to the Midwest and call it prairie bathing.

Megan: I love it.

Korey: Very cool. Thank you for answering that. That maybe you can give us a little insight as to how you quantify the ecosystem services that you're talking about and cover them individually if it's possible to come up with the combined dollar amount for the whole.

Omar: Yeah, you bet. So to give you a little bit of context of what prairie strips are, I'm going to use that kind of as the model to demonstrate how we quantify ecosystem services. So, you know, what prairie strips are is they're strategically integrated strips of prairie in row crop fields, so like in a corn and soybean field, you would take some land out of production and, and place it in prairie. And what our research team has demonstrated over a decade of research is that strategically adding 10% prairie to no-till corn and soybean fields has disproportionate benefits to that field, so what I mean by that is a 9% reduction in soil loss, 37% reduction in water runoff, 77% reduction in phosphorus runoff, 70% reduction in nitrogen runoff, you know, and the list goes on, and, you know, the list goes on and, you know, there's a 75% reduction in nitrous oxide emissions if we put prairie, in a foot-slope position where water exits the field. We've

demonstrated more than triple pollinator and double the bird abundance, and, you know, the influence of a prairie strip in a crop field is proportionate on crop yield, too. So we're demonstrating that, you know, it doesn't really have an effect on crop yield. There's no additional weed problems, it's cheaper than installing terraces with a cost comparable to cover crops. I think most importantly, too, is that, you know, in Iowa, Iowans are willing to pay for these environmental benefits. What is that worth, right? So what is it worth when a strip of prairie is reducing soil loss by 95%? And one of our colleagues we work with here at Iowa State, John Tindall, who's an economist published a field level financial assessment of prairie strip back in 2013, where he kind of did an analysis of, you know, these externality costs. And what, what I mean by externality is like what, you know, what is the effect on society of losing soil and having dirty water and losing habitat, and that sort of thing. So if we take that and throw it through an economic lens, so, you know, if we look at the soil loss piece, water-related soil loss, we're looking at about \$10 per ton of soil, and then if we look at phosphorus, you know, the average social cost of phosphorus, like petrification of downstream water or, you know, closed beaches, not being able to swim in water, we're looking at roughly \$4 a pound of phosphorus. And then if we look at, you know, the cost of mitigation for nitrogen, so, you know, nutrient retention strategies that pay for clean water like cover crops, no-till multispecies rotations, you know, that cost is roughly about \$10 per pound of nitrogen. So that's kind of how we calculate these costs is by externality and how they affect society. So if we couple all of those kind of externalities and we look at programs like government programs like the USDA conservation reserve program that helps farmers take land out of production and it gives them an annual rental payment, if we couple that with, you know, these externality costs, we're looking at, you know, like per acre of prairie, per dollar invested in prairie, we're looking at roughly like, you know, \$14 in environmental benefit or per acre with like carbon markets, if we're looking at like \$5 to \$20 per pound or per ton of carbon sequestered, we're looking at like \$450 of environmental benefit per acre of prairie. If we want to quantify that, you know, per traditional value of monetary dollars. And again, you know, what's the value of bathing in prairie and listening to birdsongs and, and, you know, I think there's a lot of value in clean water that people don't realize how valuable clean water is. Like in Iowa as an each, we have 55 species of mussels that are native to Iowa. I don't think a lot of folks realize that we have that many mussel species that are here at Iowa, and if we had clean water, we'd be able to appreciate and eat some of those, the edible ones anyway, and be able to see fish at the bottom of the stream, and we could thank prairie and trees for that, right?

Megan: Well, and you can also drink clean water, right? I'm sure that Minnesotans, Iowans alike, we all, we all need clean water to live and survive, like it's certainly important.

Omar: And it also reduces the costs to municipals for, you know, taking nitrogen out of the water and taking the sediment out of the water, and yeah, so.

Megan: Absolutely. You, so I have just a couple quick follow-up questions 'cause those are, those are some impressive numbers. What did you say? 97% soil retention? Like reduction in loss?

Omar: Yeah, 95% reduction in soil loss.

Megan: 95%. 95% reduction in soil loss. Now, if I'm a farmer, I'm not, but if I was, and my whole business is built on having soil that I can plant a crop into, 95% reduction in soil loss, which is 10% put into prairie, holy bananas. Sign me up. Like that's what I would be saying.

Omar: Show me the money.

Megan: Yeah. I mean, that's an incredible number. Now, my second follow-up question is we say 10% and I just want to get kind of an understanding of this. So how wide does the strip have to be, right? So like you say 10%, does that mean that there are like five different strips across the field? Does that mean we have one big strip that's 10% of that field? Are we talking 10% of the field itself? And then what's kind of a standard width for that?

Omar: Yeah, you bet. So, you know, strips is kind of a misnomer. It's not necessarily just a linear strip across the field. So it's really depends on the context of the field, the shape of the field, you know, the watershed, and, you know, I also want to preface that if prairie strips are not like a new practice. We've been doing contour buffer strips with, you know, grass for quite a while and main difference is that we're just incorporating native species and, you know, taking advantage of the stiff stems and the diversity to build habitat. But with that said, yeah, we want to strategically place these where water enters and exits the field, so which you have like if we just have a square field, you can do a picture frame around it, you can do one strip at the upslope and, you know, one strip at the toe slope, and not have any strips in the middle. Or you could incorporate strips at the length of, you know, but to the width of your farming equipment, so like a spray boom or, you know, however wide your combine is or multiple widths of that, and then you would have your strips in between. But the minimum that we found for this to be effective and, and to have that potential to, you know, reduce soil loss by 95% and all those other metrics is a minimum of 30 feet wide. And that's the standard for the Conservation Reserve Program, CPE 43 prairie strips, as that has to be 30 feet wide. We did do some initial studies where they were 15 feet wide and we didn't really see any effect with 15 feet. So we recommend starting at 30 and we can go as wide as you want until your field turns into 100% prairie, and we do have folks that do that, that they get a prairie strip and then they say hey, I really like this. Why don't we just do the whole field in prairie? So that, that, you know, prairie strips are kind of a gateway to just prairie in general, and we, you know, want to give that (inaudible) 14:51 that warning to folks that if you plant a prairie strip, you might find yourself planting it all to prairie, which I feel like is a good problem to have.

Megan: Yeah. I mean, I know back in the day in my former life when I worked for NRCS and soil and water, we would tell folks for a wildlife benefit, you want to be looking at things that are 60 feet or greater as like your base minimum because the wider you get with that width, the more species you can benefit, and the more problems you can avoid like pesticide drift and, and other things like that, particularly if they're going right into an agricultural field. There's things that we want to mitigate for to make sure that that habitat is good and healthy for them. So it's interesting that you say 30 feet, that's a good, that's a good minimum I think I would always push for a little bit wider, but that's

because I'm also looking at more stackables than just necessarily, you know, clean water, soil retention, those sorts of things.

Omar: Yeah, we're definitely on the same page there but in terms of like selling this to someone that needs to take land out of production, 30 feet is a, you know, a compromise, but that's where we're finding it to be effective as a selling point, too. It's like well, you only have to take 30 feet out, you know, so it's not that tough of a sell. Whereas 60 feet is a little different story.

Megan: Oh, absolutely. And I mean, if 30 feet, you can get 95% reduction in soil loss. I'm just stuck on that. I mean, there were other impressive numbers in there, too. We were in the 70th percentile for phosphorus and a few other things, and nitrogen, but my word, 95% that's like get over it.

Omar: Just think about it too. I mean, that's what prairie does, right? It's just got the stiff stems and there's a lot of diversity there, it's just a, a big thick mat. So when water hits it, it makes sense that it would slow down and infiltrate, you know, on a greater capacity, hold on to more water, build soil, (inaudible).

Megan: Oh, yeah. The root system on a prairie is absolutely phenomenal. I mean, arguably we can't go into it today, but if we were going deep underground, there's even more happening with those prairie roots. I mean, two-thirds more in general than what you're seeing aboveground. So, oh, my gosh. Korey, you have a follow-up question. We can just go on and on. I'm so excited.

Korey: I just keep thinking about these values that you brought up and but also, you know, the things that can't be quantified and how you brought that up as well. I think it's always important to keep that in the forefront as well that there are those things. But how does this idea of quantification add to the story and what, how can we use this, you know, quantification as a communication tool, and how do we reach new audiences with that?

Omar: So yeah, that's a great question. I think at the end of the day, you know, a farm is a business, and as business owners, you need to be able to, you know, think, calculate your inputs and outputs and have a profitable business. So the nice thing about having these numbers is it demonstrates that we've done the science, but it also demonstrates that we analyzed the financials of and the externalities for not having prairie on the farm, or not having perennial cover on the farm, and it also shows that others have done this, which I think, you know, if you're not an innovator, you don't want to take that risk, you can be a follower, or at least an early adopter, and, and know that that path has already been blazed, and that you'll feel confident in not taking too much of a risk.

Korey: That makes sense to me. It's always more comforting when you can also turn to somebody else as a mentor to be like hey, you've tried this here, how did that work out for you? I'm running into these pitfalls. How can I adapt and adjust to make this work for my farm and my operation?

Megan: I love hearing that prairie is the solution to profitable farming. That just makes me happy all around. We're going to pivot, sorry, go ahead.

Omar: Prairie profits is what I'm going to say. Prairie profits.

Megan: Prairie profits, that's a bumper sticker just waiting to be made. Oh, man. We're going to pivot here and we're going to shift a little bit to prairie in the sense of local economies, and that's not to say we've been talking quite a bit about agriculture in the beginning part of this podcast, and so certainly that is part of a local economy, too. But we want to shift to some of those other economies that like ecotourism, hunting, birdwatching, geocaching, hiking, kayaking, canoeing, I could go on and on and on and list all these recreational activities that also can contribute to local economies. So we're going to pivot a little bit to Scott. Scott, tell me a little bit why do diversified economies matter?

Scott: Yeah, sure. You know, first of all, I wished that I could give you a dollar amount that every time somebody visited Redwood Falls or St. James or Windom for outdoor recreation, it gave the community \$411. But it's not that clear cut. Unfortunately, there's not a lot of current data on the economic benefits of prairies to local communities, but as I travel, as we visit with businesspeople, local elected officials in these towns and, and the counties that they're in, we, we constantly hear and, and see good things, and they, they tell us a lot of stories about those impacts. You know, for decades, there was a trend for people to leave rural communities and move to urban areas. The small towns were getting smaller and there's been a trend, especially over the last few years, to reverse that. One benefit I guess you could say to the pandemic is that, that people are seeking out, you know, places like Marshall and, and Willmar and, and Worthington, and, and those communities are working hard to attract new people, to bring young families to their areas. They're investing in their schools, their health care systems, their businesses and industries, but they're also promoting the outdoor recreation because they know that a big reason people move to these more lightly populated areas is outdoor recreation, it's the, the wide open spaces, places where families don't have to look for green spaces, but, but are dominated by them. They're places that people can raise families without the noise and the chaos of urban areas. And it can be a pretty unique niche. Rock and Pipestone Counties, for example, southwestern Minnesota, they don't have a natural lake. Two of only four counties in the state that don't have a natural lake, but they do have prairie grasslands for wildlife watching and exploring and hunting.

Omar: Yeah, I resonate with what Scott is saying 'cause, you know, I moved my family out to a remote area in Boone County, Iowa, and, you know, we have a large 100-acre prairie that I can see from my front door and the blackbirds just showed up over the weekend, and, you know, I have a little 6-month-old that's looking up at these old walnut trees full of blackbirds and, you know, we, we got to be able to witness these natural moments without having to look across the road to, you know, to see if there's a car coming because there's nobody out here and we get to have these peaceful moments with wildlife, and that's, that's worth a lot to us.

Megan: Absolutely. I want to say, too, in addition to that, I mean, we saw this during the pandemic, right? Like having diversified economies when other arms of the economy may not have been able to function as well, having a diversified economy made sense that the county or the local economy could still thrive because in the portfolio, there

were other options. Yeah, and we know, too, that our brains are deeply connected to nature, so being outside from a DNR perspective, we saw outdoor recreation certainly increase during the pandemic, and it continues to increase from our own internal numbers. So we know whether it's because we need that connection of being outside, that sense of well-being and peace, or if it's just because we need to get out of the house, go somewhere else and be able to, you know, stay safe and maintain our social distancing, outdoor recreation became a great way to do that. So if that's part of a local economy's diversified portfolio, it just increases the dollars that are coming in, in that kind of case. It's like a great safety net.

Korey: So those are some great points and, you know, I was just thinking about as you guys were talking about this the I read a previous study just about how green space increases overall happiness. The more green you see, the more happy you are, the more green you see, the actual, the more likely you are to actually stay in a community, so if there's more green space and you're close to state parks and you have the access to these kinds of resources, you're more likely to actually stay in the, in those regions, so that's pretty cool. But anyways, moving on. So we know the prairie and the activities that people choose to do on the land can translate to dollars for local economies. Describe some of the prairie connected activities and how they do this. Scott.

Scott: Yeah, there, there's a lot of different examples I could give. One of them is a, a project called Hunt Southwest Minnesota, and what it does is there's communities in nine different counties of southwest Minnesota that are promoting hunting and the outdoors. They have a website, it's [swmnhunting.com](http://swmnhunting.com), they've got a Facebook presence, and they're encouraging hunting tourism. They promote things like hunter-friendly communities, dog-friendly lodging, which is a really big deal. If you bring your canine friend along.

Omar: Sign me up for that.

Scott: And obviously, I mean, these welcoming arms extend to people beyond just hunters. You know, whether you're a birdwatcher, a hiker, you know, these are communities that, that really want you to, to come in and, and be part of them. We've also got different programs that really help promote connections. One of them is our Adopt a WMA program, and WMAs are wildlife management areas. We've got 1,500 of those across Minnesota, and they are public land that you can access year-round. While they're primarily for hunting, they can also be for wildlife watching, for hiking, snowshoeing in the winter, and this Adopt a WMA program was kicked off by the state legislature in 2011. And the purpose is to encourage citizen participation to help with maintenance of these WMAs. It can be a wide variety of different types of work. Everything from picking up garbage that unfortunately some people leave in the parking areas of WMAs, all the way up to maybe doing work like mowing, removing invasive trees, things like that. Anyone interested in how to get involved with Adopt a WMA just needs to contact their local DNR wildlife supervisor. And on the DNR website in the search bar on the upper right-hand corner, you can type in DNR wildlife supervisors, and you'll get a really cool map that shows all the different places they're located along with their emails and phone numbers.



Megan: Awesome. And we'll add a link to that on the website so that you all can check it out. And so Scott already kind of alluded to this, right? But in addition to, so any time we're visiting a place for hunting or birdwatching or any kind of wildlife viewing, right? There's, there's indirect and multiplier effects. There's gas, there's lodging, there's meals on the road, there might be entrance fees, there might be incidental purchases while traveling, like for myself, if I see a candy bar at the register of a gas station, that candy bar is now mine, it's going to be in my mouth later, can't help myself. So these are things that happen. But they're also things that contribute then to the overall economy, and so it can boost jobs and it can do that not just locally, at a state and national level, too. We are anxiously all awaiting the 2022 national survey of fishing, hunting, and wildlife associated recreation that's produced by the US Fish and Wildlife Service, so we're waiting to see 'cause we're anticipating that 2020 and onward, we saw a boost in many of these activities, and so I'm really curious to see what those updated numbers look like. We know that some of the older figures say that over 41% of the population nationally participated in a wildlife-related recreational activity, so I'm really curious how that number changed through time. So we don't have those numbers for you now 'cause that survey is not completed, but when it gets completed, we will add that as a link to the website so you can check it out and see what the updated numbers are. So in Minnesota, I'm pivoting a little bit here. We have just over half of the state is in agriculture production. So we have 27 million acres roughly out of our total 55.6 million acres. How do we balance the need for food production with the need for clean air, water, and healthy soils? Essentially, a livable climate, right? Like we all appreciate a livable climate. We need it literally to survive. Facts. So how do we balance that with wildlife diversity and places to be at peace and explore? How, how do we find that balance with food production and all the other things that we need the land to do? Omar, I'm going to punt this one to you first.

Omar: You bet. So, you know, first I think, you know, I got to kind of poke at the word balance because I don't think it, you know, that describes like a precarious nature, right? it's kind of a seesaw and I, I disagree with that. It shouldn't be a balance. It should be more of a blend 'cause again, if we, if we're looking at a balance, we have set aside land for conservation, we have set aside land for production. And really we should be talking about how to blend the two because if we look at, you know, a hydrology map as an example of how water moves across the landscape, it's not fragmented or linear or, you know, put in these boxes with fence rows and it's moving based on how the land is shaped. And I think using that's a model for how we blend conservation into our production lands is a step forward, so again, yeah, it's not, it's not a balance, it's a blend. We have to figure out a way to do that and prairie stretches are a good baseline for what that would look like, just incorporating a small amount of prairie every farm field would pay dividends in conservation outcomes and then also quality of life for, you know, the public and for rural folks as well. But, you know, I kind of wanted to share a little bit of a vision that I, I have for the future of, you know, a climate-resilient regenerative future that, that blends conservation and, and production into the same practice that, you know, changing our practice for the land, our relationship with the land. So I can't give it within the context of Minnesota 'cause I'm, you know, my discipline is focused at Iowa State, so sorry to all you Minnesotans, but I'm going to use Iowa as an example. So, you know, historically, Iowa was 85% prairie with about 15% of

those remaining acres being riparian areas and, and savannahs. And, you know, overall, there was about, sorry, overall there was about 170 million acres of prairie in North America, you know, just lush grasslands that supported a high diversity of undulate herbivores like bison and el. So, you know, I'm thinking about how do we mimic that initial grassland system where the, where 30 to 60 million bison roaming across it and how do we integrate livestock back on the land because a lot of the livestock has been in confinement situations, and then we have issues with producing too much manure, and then there's consequences for water quality and habitat loss because we're, we don't have livestock back on the land. So I think that's a key component is we need grasslands to support livestock and a really easy low-hanging fruit is to restore riparian areas to perennial cover. So, you know, right next to a river is a really great candidate for a riparian area. And what I mean by that is like, you know, a three-zoned buffer where the first zone right on the stream is like a mix of hardwood species and then the middle zone is, is kind of like a savannah-esque structure where you have large hardwood trees and fruit and nut trees, you know, diverse understory of forage and different potential crops that we could be growing in more of a linear fashion. And then next to that would be your tradition or your transition to a, you know, traditional convention row crop acres. So I kind of paint that picture of, you know, how we could diversify a riparian zone through an ag lands of like silva pasture, which is the deliberate integration of, of trees and livestock, and then all of the things that come with agriforestry products. I kind of mentioned a few like fruit and nuts but also, you know, more like medicinals like elderberry and other, you know, more traditional agriforestry products like timber and, and pulp and that sort of thing. But what gets me really excited about that, that vision is the connectivity piece. You know, the rivers don't stop flowing until they get to the ocean, so could we make a really awesome ultra-diverse savannah corridor that's connected continuously, and then use those corridors to integrate livestock, and then connect those corridors to something like prairie strips, which eventually we could expand, you know, from 30 to 60 to 120 feet, and be incorporating trees and, and making a savannah biome within the row crop matrix, and then, you know, grazing cover crops strategically, and then maybe we could be housing animals in existing infrastructure and collecting the manure and putting it through a biogas digester and making, you know, methane for heat and electricity and using that digest as fertilizer. So I think the biggest potential in prairie right now is thinking about the, like again, the potential, like how do we blend that? How do we make this opportunity to reintegrate livestock? And I think that's the big missing piece is the livestock grazing of perennial grasslands because historically, that's what was happening. The livestock, you know, in the form of bison, which I would argue is an indigenous livestock. They were managing lush grasslands for, for that product to in the form of bison and elk and, and providing habitat for them. So arguably, Iowa was once 85% ranchland and they were raising bison, right? So how can we incorporate that back on, on to row crops? And I, I think prairie strips are a start but then that connectivity piece is huge.

Megan: Yeah. I like, I mean, all I'm thinking of as you're saying all the stuff is go big or go home, right? Like you're, you're, you're, you're laying out a vision here for sure and I think a couple things I want to make sure that I mention. It's interesting how different words strike different people. I like that you said blend, and to me, I think of everything you talked about as a blend as like a stackable benefit, so instead of just like putting

agriculture in a box and setting it aside over here and putting prairie in a box and setting aside over here, we're thinking about, well, okay, how do we make these things go together to, to really the benefit of both? But I think in my mind, when I think about balance, what I'm thinking about is not necessarily that precarious nature, although in some cases, we, we are in a precarious state, you know, in Minnesota for sure we used to have 18 million acres of prairie, now we have less than or right around 150,000 acres. That's a staggering loss of prairie, we have so little left, that we can't ask it to do everything that it did historically. And so I sort of think about it as we're still going to need prairie areas that are just prairie, right? That whether they have grazing or not grazing, like that's a whole other question for a whole other day but like we still need prairie that just for the sake of prairie is there being able to survive and thrive and do the things that it can do. Like so in other words, what I'm saying is we shouldn't just try to, to carve up the prairie into, into agricultural land and then keep the strips on it. Like we need to make sure that we have the remaining native habitat and we connect that as much as we possibly can, but then I love this idea of as we're looking at the rest of the landscape, how do we get to these stackable benefits incorporated in and how do we blend some things there. So Korey, did I steal your, you want to comment, too that I can feel it.

Korey: You did steal my thunder a little bit, but I can add a little bit because I feel like, you know, a lot of people just see, you know, it's conservation or ag, and we see these very separate things pushing and pulling against each other, so it offers a really cool communication tool to talk about balance in this way, and to talk about, you know, I feel like it helps integrate those thoughts and almost create a friendship between, you know, conservation and agriculture or, you know, grazing and things like this that can be done to help merge these thoughts a little bit more and see that these aren't separate challenges and these challenges need to be dealt united in order for us to deal with these issues. So yeah, I appreciate it, Megan, all your comments. You did steal a little thunder there but I, I really appreciate all your input.

Megan: Well, I love what you're saying that we all live here, right? Like and so these aren't separate problems, like these, like having clean water and healthy soils are problems for all of us to face and try to solve together, they're not separate as problems. Like we as people are all going to be facing this and need to figure out a way to, to solve it. Scott, do you have ways that we can solve it or another - - do you have all the solutions?

Scott: Every farmer will tell you that they're interested in conservation. It's in their best interest because that's what they do is they, they make money off the land. And they're interested in generating the best economic return that they can on the land because that's what they do for a living. But it's not always through tillage. I like the term or the, the saying farm the best and set aside the rest. We've got a lot of state and federal programs that can help probably produce better economic returns on marginal land than tillage can. Things like the Conservation Reserve Program, Reinvest in Minnesota, the Wetland Reserve Program. These are ways to take that marginal land that maybe only will produce a crop, one out of every 3, 5, or 10 years, and provide revenue every single year on that land. I'd also like to pitch a program that the Minnesota DNR has kind of associated with that, and that's our walk-in access program. This kicked off more than a

decade ago, and it's a way to, it provides public access to private land and it pays landowners to allow that access. And it's been received incredibly well. The program's expanded from just a handful of counties in southwest Minnesota to now majority of the state. And currently, it will pay \$18 per acre per year for that landowner to allow hunting access from September 1 to May 31. We've continued to see increases in the number of acres enrolled in that program year after year, the number of people who hunt the land year after year, it's a win-win for everybody involved. And as we look at ag and conservation, that's exactly the type of wins that, that we need to have going forward.

Megan: And if you're interested in hearing more from Scott about this, you can go all the way back to season 1 episode 2 where we cover in the walk-in access program in detail, and you can hear the dulcet tones of his voice walk you through it. If you want a throwback to that episode.

Scott: I, I was just a young person at that time.

Megan: A young person. How long do you think we've been talking? This is our 50th year podcasting together.

Omar: So I just want to add to that, that degree of land cooperation is totally possible with ag production systems, too. So, you know, folks are getting access to privately owned land through a public way. You know, we can, we can subsidize these perennial-based production systems that, you know, have livestock at their center. I think, you know, through subsidies not too dissimilar from what Scott just highlighted but also, you know, thinking about it like from a perspective of how an urbanite might pay into a solar field that's in a rural place, right? An urbanite can be paying for clean water but they're paying it by subsidizing a, a herd that moves through privately owned land that's publicly funded.

Megan: I like that you mentioned solar 'cause I want to, I want to touch on, we've been touching on agriculture a lot with our blended stackable benefits, and so I want to touch a little bit on some other stacked benefits. And I think what I want to leave you all with is imagination is key here. It doesn't have to be, you know, this is the way that we've always done it. I think if as you were listening to all of Omar's like visioning and possibilities that he was relaying, I mean, there's imagination in that. There's daring and there's I guess just a will to try, and at this point with where we're at with prairie, we have to be willing to try if we're going to save it. And so we know that there's things that need to be part of the success equation, right? Like we need set-aside lands, we do need conservation lands, I guess. I don't like to say set-aside lands. We need conservation lands. We know that we need lands that are protected, right? But we also need to find innovative ways to incorporate these blended benefits. So one of the things that comes to mind is Minnesota's Habitat-Friendly Solar Pollinator-Friendly Solar Program, and so we're working with solar industry essentially to instead of having turf and gravel underneath the solar panels on the solar site, we incorporate native prairie grasses and wildflowers so that we can provide habitat. Omar's raising the roof for that woo, woo. But also it's not just habitat, right? So research is showing, it's preliminary research, but it's showing that having those living deep roots onsite are actually keeping the solar panels cooler, which bonus, makes them more efficient, more productive, and more cost-effective. And so it's not just a feel-good benefit, it's also a pocketbook

benefit. We haven't even talked about the other benefits like boosting healthy soils, mitigating erosion, so stopping erosion, right? Helping water infiltrate, cleaner air, carbon sequestration, man, prairies are great at that. So there's all kinds of other benefits that we haven't even begun to quantify when we start thinking about stackables. And so as we think about all of the things we're chatting through today, think about the projects you're working on and the things that you're doing, where might there be a stackable benefit or a new idea or room for some spark of imagination that could really move the needle for saving the prairie landscape because when we put our energy into saving the prairie, we are putting our energy into us because it's helping us survive and thrive in Minnesota and in Iowa. I'll go so far as to say. And all the places where we have these wonderful ecosystems. And we talked a little bit about conservation grazing today, obviously we don't have time to dive deeper into that, but if you are interested, you can go listen to The How, Not the Cow in season 4 episode 31 of the Prairie Pod. The last thing I want to hit on before we move on to our two next sections are cultural benefits and connections. And we've sort of been weaving these into the other things that we've talked about today, so we've talked about the benefits to our health, the importance of being connected in nature. We talked about this in season 4, episode 32, where we went over prairie's importance as a mental health refuge. And we talked about how it reduces stress, anxiety, it can even reduce depression, but what I want to make sure that we touch on is that, you know, there are cultural benefits and connections here also. Native tribes were here first, they've long been connected to the prairie, they have played an integral role in helping it survive and persist through time, and that role continues today, right? Plants are used in medicine and spiritual rituals, animals for food, and the land itself as home. So when we think about quantifying all these benefits, like you put some really good, strong dollar and cents at the beginning of this episode, when I think about quantifying the value of home, I just get stuck a little bit. I don't even know where to begin. I know how to quantify, right, like the value of my mortgage because I pay it to the bank, but like thinking about that sense of place and where you feel the most connected and at peace. I don't know. What do you guys think about that? How could we even put begin to put a number on that?

Scott: There's certain things that you can't measure in dollars and cents, and the term prairie zen, I really, really like that. I mean, just the helpfulness of being out on the prairies and whether that's due because you're out there hiking and snowshoeing and, and getting those benefits or if it's that peaceful feeling that I don't experience anywhere else,, you know, especially when you can see beyond the native plants, all there is horizon. You know, you're laying in the grass, you're staring at the sky, I mean, the sound of the, the wind moving through the grasses, it's just, it's something you can't fully explain if you haven't heard it. It makes me feel relaxed and at ease, and how do you put a dollar figure on that?

Omar: Yeah, I totally resonate with all of what Scott said, you know, the sound of tall waving grasses in the wind is, is really difficult to quantify. All I know is that yeah, it does resonate deeply in my spirit and, you know, it gives me a sense of calm and, you know, also I think we need to redefine what it means to be wealthy. You know, being in a really loud situation where we hear ambulances and, and fire trucks and screaming versus being out on the open prairie where we get to listen to birdsongs and, you know, see

different kinds of butterflies and bees buzzing around and, you know, you get this technicolor effect when there's different forbs that are dynamically flowering at different times of the year and it's, you know, really just kind of thrilling and exhilarating if you're actually in the middle of the prairie during, you know, July and the, this clouds are beautiful and it's, yeah, it's just really hard to describe to someone that never actually has been inside of a prairie and what is it worth, it's worth everything to me. To be able to have access to these wild spaces is part of our human nature, and I think, you know, we're so disconnected from that now that we're struggling to grapple with what it means to define it, you know, and what the value is because money didn't exist, you know, 10,000 years ago before the prairies started taking over the Midwest, and we weren't really thinking about it in terms of value at that time, right? So, I, I think we can kind of win on that a little bit and know that an intrinsic part of our humanity to be connected to these wild spaces.

Megan: For sure. And I think it's important to note, too, that there's certainly access differentials in this, and so being able to make sure that in our urban spaces, folks have access to prairie and that prairie exists can mean that people can experience this piece that we're talking about and describing, that it doesn't have to be, you know, a car ride away, that it can be a walk away, right? And a safe walk away. Like I think that's part of the challenge for prairie practitioners is that it's, it's easy, right? Like my favorite places to be, obviously, are where the prairie still reigns supreme. It's still the queen on the land. And what I mean by that is it's connected, it's vast, it's open, you feel like you're completely in the wild. Those are obviously places for myself that I really enjoy being, but they're also not places that are necessarily accessible to everyone, so I think part of our challenge to ourselves as prairie practitioners is knowing and understanding that every choice we make matters, every piece of prairie matters, and so I think Omar, you talked about this a little bit earlier. Like even sense of having native plants at home, planting them in your yard, utilizing like the Lawns to Legumes program or other assistance programs that can help make that conversion happen gives you access to your own tiny wild spaces and places. I know certainly in 2020, I was very grateful, but I was very grateful that I had turned much of my yard into the, into essentially a shortgrass prairie planting so that I could enjoy and hv access to that wild space feeling right here at home. And so I think part of our challenge is to make sure that we're, we're working on that, too. We're not just working on all of the big, vast expanses of land. Those matter, don't get me wrong but.

Omar: I'd also like to say I think you know a lot of, a lot of other ecosystems have been, you know, like put up on pedestals like tropical rainforests and that's, you know, that sort of thing with, you know, save the rainforest, and I'm not disagreeing with that, and so we have to save the prairie, which is the rainforest of the Midwest, and there's that kind of like there's a sense of pride in that, right? That we, we're able to cultivate this relationship with this native habitat that, you know, arguably defines us as Midwesterners, and to be able to have that connection I think there's a lot of value there.

Megan: Well, and prairie, I mean, you know, and not just Midwesterners. You don't, you don't just have to be part of the Midwest, you could be in Montana. There's prairie out there. You could be in Missouri as they say. You, you can be prairie has a great range in the continental United States and I think to be able to experience it wherever you are,

you can wear that, that prairie badge with honor with pride that you're now a prairie person. And you don't have to just, you don't just have to be in Midwest. Okay, we've got to wrap this up. We could just talk about this forever. Clearly, we all are super passionate about prairie. I'm trying to get as many Ps in as possible. I'm going to leave us with this quote before we move on to our next section. It's from Robin Wall Kimmerer, her book *Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge, and the Teachings of Plants*. One of our responsibilities as human people is to find ways to enter into reciprocity with the more than human world. We can do it through gratitude, through ceremony, through land stewardship, science, art, and in everyday acts of practical reverence. I just feel like that's a great way to wrap up this section because we told you it was going to be about your pocketbook, but it was about so much more. Now we're going to jump to our next section.

LET'S SCIENCE: To the Literature!

Science!

Megan: This is the part of the podcast where we recommend a book, a blog, or a paper and Scott, you've got to pick for us. Let's start with you.

Scott: Yeah. Book I just read recently, it's been around for a long, long time. It was first released in 1947, and that is *Whistling Wings* by Martin Bovey, B-o-v-e-y. And what it talks about is, is his recollections as a kid of traveling and hunting through the Heron Lake area of southwest Minnesota in the early 1900s. And he, he describes a landscape that it's just so much different than we see today, and you can really sort of see it through his words, and I really enjoyed reading it.

Megan: Wonderful. Omar, you've got a bunch of picks.

Omar: The one I'm going to recommend is the blog by Chris Helzer, The Nature Conservancy, it's called *The Prairie Ecologist*. He has essays and photos and discussion about prairie ecology, restoration, and management on that blog, and some of my favorites, one of them is his most recent one, it's called *The Tribulations of a Prairie Evangelist*. And it, you know, basically pokes fun at how difficult it can be to get people interested in prairies. And another couple blog posts, one from 2012, *Why I Care About Prairies and You Should Too*. And then another one from 2019, *Why Telling Prairie Stories Matter, Stories Matter*. It's focused on the idea of getting people interested in prairies by sharing our passion for prairie rather than focusing on the metrics of, you know, carbon or clean water or how we quantify ecosystem services, so no offense to the podcast for that one.

Megan: No. There's no offense taken because I think, I think what we did today is that we did talk about some dollars and cents, but then we inherently had to talk about our own passion for prairie because that's just what happens any time you talk about why prairie matters. Even, even when you're trying to give the economics, you can't help but let the passion creep in.

Omar: Is, is prairie passions a new soap opera?

Megan: The little bluestem and the voles, oh, man. There could be a whole, I've got like 62 children's book ideas in my mind right now. Hey Korey.

Korey: Yeah Megan.

Megan: Let's take a hike. Where should we go?

Korey: Great. I've always wanted to hike at Blue Mounds State Park. Can I tell you why?

Megan: Yeah, please do.

Korey: It's exciting. So this place is just full of beautiful prairie and flowers, and I've been creating a list of places in Minnesota I want to visit, and I hear that this place is a wonderful place to go, and it's very accessible to our neighbors in Iowa as well, so I just want to point that out. And it's a great place to go see buffalo herds as well.

Megan: The Minnesota Bison Conservation Herd.

Korey: Bison Conservation Herd, yes.

Megan: I know. I always want to say Minnesota Conservation Bison Herd, but that just doesn't sound as, as good, so it's a real struggle. Oh, Omar, where are we hiking today?

Omar: I love the Broken Cattle Grassland Preserve, which is in Plymouth County, Iowa. I think the closest town is Westfield, and it's just beautiful. There's some bison there as well and yeah, just big, open landscapes.

Megan: Bison and big, open landscapes. Scott, what's your pick?

Scott: Mine would be the Lac qui Parle Wildlife Management Area. That's in western Minnesota just west of the town of Montevideo. It's 25,000 acres on the main unit, and you can find all kinds of places there where you're surrounded by prairie and, and on the horizons, all you see is sky. You don't have, there's views of public that you get so many other places.

Megan: My word. 25,000 acres. I was just thinking we have just about 150,000 acres of remnant prairie left in Minnesota, and I know the Lac qui Parle unit is both remnant and restoration, but if we hypothesized that it was all remnant, that would be 16% of that 150,000 acres. That's a sizable chunk. It's a big, open space. I like it a lot. Oh, my gosh. I cannot even believe it, but we have just wrapped another season of the Prairie Pod season 5. I can't think of anything that rhymes with five, but it's over. I was trying to think of a word that rhymed with over. So okay, don't get too sad.

Omar: Prairie clover.

Megan: Prairie clover. It's not over, go find a prairie clover. Okay. Don't get too sad. There's lots of Prairie Pod episodes to revisit and relisten to. Don't forget to write us and review us in iTunes or on whatever platform you're using to listen. It helps us bring in more prairie peeps just like you. We hope very much that you still have many more days on the prairie. Thank you so much for listening. We hope we sparked your imagination, we hope we sparked, well, we hope we taught you something, right? And we hope we



sparked in you for sure a passion and a love for prairie. Don't forget to get out there and discover the prairie, especially in my favorite season as the bluestem turns purple, the Indiangrass gets golden, and the prairie dropseeds start to smell like buttered popcorn. As always, all of the links that we talked about today in the episode will be on our website at [mndnr.gov/prairiepod](http://mndnr.gov/prairiepod). This episode was produced by the Minnesota Department of Natural Resources Southern Region under the Minnesota Prairie Conservation partnership, it was edited by Dan Ryder and engineered by the fantastic Jed Beecher. Dan's fantastic, too, I just forgot to say it. Oh, my gosh. Can we all say it's over? Go find some prairie clover?

Omar: Thanks for having us.

Korey: Thanks, bye.

Scott: See ya.

((sounds of birds chirping and wind blowing))