Prairie Pod Transcript

Season 6, Episode 50: Plant a Pocket Prairie: How to landscape with native prairie plants in your backyard.

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Podcast audio can be found online at mndnr.gov/prairiepod

Transcript:

((sounds of birds chirping and wind blowing))

Megan Benage: 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're 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 everybody. We are so excited to be podcasting today because it's a very special hostess ode - - host episode hostess ode.

Marissa: Hostess ode, that's a good one. (Laughing)

Megan: It is, as your Prairie Pod host today, Sara, Marissa, Mike and myself, Megan, and we are going to help you how to plant a pocket prairie, landscaping with native prairie plants in your backyard. Who's excited?

Marissa; Woo hoo!

Mike: Mike is.

Sara: Yay.

Mike: It's rare when Mike talks in the third person, sorry about that.

Megan: I was just going to say I love when you do it. (Laughs.) Oh boy! So we all know 2020 happened and it was tough for a lot of reasons but one of the things that I know that brought me great joy was the ability to go right outside my door and visit my little pocket prairie. We said it before, we'll say it again, we have just over 1% of remnant prairie left in Minnesota. And so at this point, every patch of prairie matters. So whether you're contemplating a small container garden, a backyard design or converting larger acreages, planted prairie restorations can really play a key role in helping connect the native prairies we have left. So today, we're putting our hostess odes, hostess with the mostest heads together and we're going to share our personal stories of our own pocket prairies and how you too can experience the joy of native plants, in your own home. Ready team?

Mike: Do we need to define prairie pocket prairie, is that self-explanatory you think?

Marissa: A prairie you can put in your pocket.

Mike: Okay.

Marissa: A little prairie.

Mike: That, that, I'm kind of a literal person, so it's like (makes noises) - -

Megan: Oh Mike.

(Laughter)

Megan: Yes, we just meant a smaller prairie - -

Mike: Yeah.

Megan: - - but it doesn't have to be, some of the tips we share today you could also biggerize, make bigger. You expand.

Mike: Biggerize. I like it, yeah.

Megan: (Laughing) Well it's so we can make it, you know, what, that's what I was saying in the beginning there like whether you're thinking about doing this in a container or in a

small corner garden, or you're talking about three, four, five, 10, 70 acres. It's the same basic steps that you need to go through to plant, and that is something that often gets lost or is confusing for folks. When you're in an urban setting, there are other things that you need to consider, but it's the same general steps. Right?

Mike: I think one key distinction is that this is something that, okay, I was going to say something that everybody can do. It's not something that everybody can do. I'm speaking as a person that has spent most of his life living in apartments or rentals, so I can't, if I go out and plant a prairie in the backyard of the apartment, I might get kicked out, right? If you have any - -

Megan: But you can have a container of prairie plants on your deck.

Mike: I could have a container of prairie, I never lived anyplace that was nice enough to have a deck.

Megan: That is false and I know it.

Mike: You're right, you know it's false. That wasn't my place, it was my wife's place, okay? (Laughter) Mike has never lived anywhere nice enough that had a deck, okay? Anyway, yeah, so this is something, it is something that everybody can do. You don't have to be a professional prairie manager. If you have influence over what is going on in somebody's yard, this is your opportunity to help prairie. Do pocket prairies. Okay.

Megan: Absolutely. Thanks for those important caveats you share. (Laughing) We thought it'd be nice to start this episode by sharing some of our personal stories that we've had with native plants. And keep in mind for most of us, except Mike, and I mean that with love, we're prairie professionals who spend a lot of time planting and restoring prairies. And so Mike is obviously a prairie professional, but from a wildlife standpoint, right? So he doesn't spend as much time in the nitty gritty of planting prairies, but has still found a lot of joy in his own home garden.

Mike: It's very true.

Megan: So we're going to hear some of our own experiences, and I thought Sara, we would just start with you.

Sara: Sure. Well, as I've mentioned on the podcast before, we have a fairly large prairie reconstruction on our property, which is, you know, like we were saying is our own whole experiment and chance to play around with some of these different ideas that we talked about on the podcast all the time. But ever since we moved into our house here, we've had a couple of little pocket prairie gardens in the yard, which have surprised me at how much of a challenge they can be to maintain. I kind of thought, you know, I'm going to throw a few plugs in there and I'll have some pretty wildflowers, and that will be the end of it, but between different animals that live in our yard, our own pets can be a little bit challenging sometimes, and just some of the different plants that I've tried to grow that maybe didn't like the soils that I had, it's been a lot of experimenting and learning, and I feel like it's been a great chance to just get some kind of up close one-on-one time with different species of prairie plants that maybe I don't do as much in our big, you know, 100-acre reconstructions that we do at work sometimes, so that's been

one thing I've really enjoyed is just getting to know some individual plants and some of the characteristics of them on their own outside the context of a prairie plant community.

Marissa: Yeah, so, you know, similar to Mike, I have lived in various suburban apartments like places through time, but I always have somehow managed to bring prairie plants into that space because I just love, I love planting them, I love watch as Sara said, like I just, I get enjoyment out of just sort of watching them and being able to observe them in a more up close setting because, you know, when you're in the field, you don't, you're not there all the time. But the plants that are in your backyard, you get to interact with a lot more regularly, and so since I live in a suburban area, Moorhead, Minnesota now, and so we've been here for about five years and I've just been playing around in the backyard, and that's, that's the thing that I love most about it is just getting to kind of have fun with it and, and plants and also I have two daughters, and so it's been kind of a space where we can just kind of play together, and they throw out like the random seed bomb that they get at a, you know, at a fair or we plant plugs that we get at the nursery because we're like hey, there's some leadplant, this looks like fun, let's see how it does. And so I would say my approach in our yard has been more just sort of playing around and having fun with it unless like it's definitely not your like sort of more landscaped or official designation of like pocket prairie approach. It's been more fun to play around with it, plant what we find, what we see, and what we enjoy. So it's kind of a mix of a lot of things.

Mike: So for me, you know, probably a lot of listeners are kind of from my perspective like Megan said earlier, you know, I'm not an experienced prairie manager that is like that does prairie reconstructions. I've never been a gardener. Put it kindly, I don't have quite a green thumb, right? So starting out with a pocket prairie was an intimidating process. My wife and I just got our first homes that we've ever owned two years ago, and so immediately we were like okay, we got this yard, let's go to work, let's make a prairie. And the whole process was intimidating. So what I just want to encourage listeners here is that it sounds intimidating, it doesn't need to be, okay? My basic goal, I've simplified it, I set the bar very high when I started, that bar has lowered considerably through time, and now my basic objective is to replace grass with native plants, replace yard with native plants. And so even with that very simple, modest objective, we are making progress, and we love it. My wife and I have this what we're doing in our backyard. It's fun, we're screwing up a lot, and that's part of learning, and so yeah, bottom line is don't be afraid to screw up, and it's just easy to get excited about, it's an easy for us all to contribute to prairie.

Megan: I think we said in one of our very first episodes with Jess Petersen that you just got to get more failures under your belt. That's part of learning, right?

Mike: Exactly.

Megan: Is that you can't be afraid to fail. So I have, this is not going to be surprising for people, I have not one but many prairie gardens at my house. Had some idea that I was going to create many miniature ecosystems. And so one of the very first things I did when I moved into my house was plant a native pollinator garden. And we call it the railroad garden because it's at the corner of the property. I also live in town in an urban setting. I live in New Ulm, Minnesota. And I just started with plugs and, which are small

containers, like if you get a container tray of pansies at, you know, a local store in the springtime, that's what it looks like except the containers that the plants are in are generally a little bit deeper and larger because prairie roots tend to be deeper, and so even those beginning baby plants are a little bit taller root-wise. So I just started with that. I like to draw things out on a piece of paper of how it's going to go. Someday somebody should like audit all of the piece of paper in my house that have random drawings on them, and see how they compare to real life, because there is inevitably always a point for me that I get to where I'm like oh, who cares what the plant says, let's get in the ground. Because I just get frustrated when you're facing hundreds of plants and it always seems like a good idea when you're ordering them and then when they arrive, it's like panic to plant all of them. So the railroad garden was first, and then in 2019, have these really, my house sits up on a little hill, and so I started converting the deep slopes around my house into seeded prairie reconstructions. And it really stemmed out of a very basic hatred of mowing. So I do not like to mow the yard. It is one of my least favorite adult chores, and I very much hate to mow these deep slopes because they're steep enough that you're using those leg muscles and you're pushing, and then you're seeing soil erosion go next to you because the turfgrass just cannot hold those slopes in place. And so at some point in 2019, I just said we're not doing this anymore. We're going to rely on the power prairie roots, and that's what we got to do. So I intentionally just like Marissa and Sara and Mike are saying, I experimented. So I tried different methods on each hillside, and I did one season. So I did one in spring, one in fall, and another in fall, and now I have one more to do. And I also, again, I wanted to create this mosaic of habitat. So while I have prairie gardens, I also have a woodland garden because I had established trees, and then I have a boulevard, and then the city of New Ulm, and you'll find this in a lot of cities actually, we have a height restriction where you can't plant the boulevard higher than 6 inches. So eventually, that won't be grass anymore, it'll be clovers, buffalograss, and creeping thyme, which aren't native plants, I know, shocking, but they do benefit honeybees and some other pollinators, and while honeybees aren't native, I have a lot of them in my yard, and I find myself wanting to provide them with food, too. And so I want to create this mini-mosaic of Patrick habitat.

Megan: Hey Prairie Pod listeners, Megan here with a quick fact check update. So I just want to mention in the list of species that I gave, buffalograss, creeping thyme, and clover, that buffalograss actually is a native plant in Minnesota. I was sort of generalizing the group together. And it's also a native plant throughout much of the tallgrass prairie region. One thing that you might find as you're selecting some of your native plants is that you'll see hits word cultivar. And in fact, you do see this with a lot of buffalograss species that are sold at native plant nurseries. So what is a cultivar? This is essentially when we breed plants to select for specific characteristics. This could be anything from flower size, leaf color, how small or compact the growth is of the plant, flower number, etcetera. Any of the above. And what we're doing is we're getting variation from that plant out of that breeding. But now we have to also consider that our native plants have evolved with our native wildlife over thousands and thousands of years, even so far as specific flower size and depth can be matched the tongues of our native bees so as to make nectar and pollen extraction easier. So the take-home message is while you might be swayed by that brilliant blue coneflower that you're

looking at, try to think about what has actually been modified and how that might change or matter to the wildlife that depends on these native plants. So the rule of thumb when it comes to cultivars is use caution. And really, if your goals for your home garden are to have the best garden possible for wildlife, and that's what you're looking to attract, choose the native option. And I just want to tell a quick story because this is really what gets me about my home garden all the time, is that while I planned it, everything that I imagine it's going to be, how it's going to look on the landscape, what wildlife might benefit from it, it never, and I mean never turns out how imagine it would, never. But it's always exciting and special. And so during the pandemic, this little patch of prairie really helped me feel a connection to nature, and it sparked my curiosity, and it strengthened my commitment to care. One time I went to outside, and all of my liatris were just covered in soldier beetles, and they were just having a party, and I took this video where I couldn't imagine there were hundreds of them, and it's just a small I think that garden is maybe 50 square feet, and it just seemed like an improbable number of beetles in such a small area. And then of course, as we get to dusk in the summer, there's fireflies all over my yard, and then one spring, and this is the one that gets me, this is the one that gets me every time, I have a colony of bumblebees, it's not obviously the same queen, right? But they seem to nest in my flower bed in a very similar area. One year I open the backdoor, and I look down, and there's this giant queen bumblebee in my house, right? And I'm like whoa, she is lost, she is not in the right spot, she needs to be outside, she needs to be on a flower. So I go to pick her up and she's basically immobile, like she's very cold and she seems pretty lethargic, she's not moving very fast, and so I carried her outside to a little pasqueflower, and I just sat there next to her watching, hoping that it would be enough, right, to sustain her and help her make it through, because queen bumblebees have the entire colony inside of them, so if she dies, that's a big deal for all of the little bumblebees and the future of the season, basically. And so I saw her little legs start to move, and she went forward, and I saw her start to get nectar from this little pasqueflower, and I just sat there, and I was having all these thoughts, right? I was thinking have I done enough, have I planted enough native plants? Does she have enough food? Because there basically is nothing else growing at this time. And all of a sudden, she just zips off to the next pasqueflower that is all the way down on the railroad garden, easily like 500 feet away. And I was just like she's going to make it, this little bumblebee is going to make it. And it just, I don't even know how to tell you like it just brought me so much joy to know that this is such a small thing I did, and of course then me being me, I immediately was like we don't have enough pasqueflower, we're going to need more, like you know, immediately I'm trying to order more pasqueflower so that we can have more really early blooming plants that can sustain the first emerging bumblebees, and this is a small interaction, but it makes me really happy.

Mike: I was going to talk about benefits of these pocket prairies but now I don't need to because your story just encapsulated everything, Megan.

Megan: No, please do, Mike.

Mike: It literally did. Okay. I'll point out some of the benefits. So I should credit Chris Helzer and his blog, what's it called, Prairie Ecologist? Yeah. That's a good one. I reviewed that to, and he and I actually kind of summarized some of some of these

benefits of pocket prairies, if you want to Google that episode in fact, we can put that online, right? But a big one, and this kind of gets at what Megan was just talking to you about is education and awareness. That may be, and, and just people a personal attachment to prairie that can carry over to like real remnant prairie conservation or a large prairie reconstruction, it just gets people excited about those things when you get a prairie literally in your backyard. You know, they say you got to have something in your backyard before you really start to care about it. In this case, you literally have it in your backyard. And so, you know, your neighbors see it, it gets them curious about it. Marissa mentioned her kids. That is a huge deal. So this next generation getting them excited about prairie, what better way to do it than to have them help you work in this prairie in your backyard. And so that may be the biggest benefit, and just, you know, we all talked about the pleasure, the joy that we get from working in our pocket prairies just looking at them while we're sitting on our decks. That is really hard to replace with something else.

Megan: Mike, I just want to note that you have a deck now. Is that what you're sharing with our listeners?

Mike: I do have a deck now, yes.

Megan: Okay.

Mike: Yeah. Yeah. I just never had it before in the crummy apartments I have lived in.

Marissa: I would argue, Mike, that actually yes, I agree that education, awareness, and connection to prairie, but also I think just having these prairie plants in your backyard is just a connection to nature in general, right? I think.

Mike: Very good, yeah.

Marissa: Not just prairie, but just sort of that natural world and for my girls, too, like you said with kids, it's that wonder and that kind of awe that being able to observe plants and those interactions just themselves in their own backyard, you know, can bring a lot to just appreciating and engraining that value for nature as well as prairies.

Mike: Well put.

Sara: Yeah, I love what you're talking about there, and right away when you were talking about the kids, I was thinking about my kids, that, you know, they may not know what all the plants are called in our little pollinator garden, but I have more than once we've been out walking around in the bigger prairie, and they'll say, oh, we have that one in our garden. And you know, they don't know what it is, but just having that like connection and that awareness of native plants being something that you can have both in your yard and out in more natural setting I think is an important thing for them as they grow up, even if they don't become prairie managers in the future like I don't think they will, but at least they've got that appreciation. I think that's important.

Mike: Another important benefit, and Megan hinted at this with her hatred of mowing. I actually kind of like mowing, but the, another important benefit is reduction of impact, and that means less mowing, less fertilizing, less watering, all these things, they really are significant sources of resource use, energy use, carbon, you know, they're

significant sources. The Chris Helzer in his blog and also it's a NASA statistic that they have determined through aerial photography and remote sensing methods that the acreage of lawns in the US is the largest irrigated crop in the United States, crop quote unquote like it's not a real crop, right? But irrigated lawns are three times the area of irrigated corn in North America. Yeah. And so.

Megan: Yeah, which is a huge number.

Mike: Right. I mean, you just think about all the lawns and what they all add up to, and people mowing them once a week through the summer, and there's that impact is huge, and so that's something not to be dismissed. That's an important benefit.

Megan: Right, and I don't know if you mentioned this, Mike, but I think it's important, too to mention runoff. I think you did mention fertilizer and soil and all these things, - -

Mike: And water, yeah.

Megan: - - but pollution from lawn runoff is a real thing that happens, and for example, right outside my house, there's a stormwater drain right there, and so that stormwater drain is eventually going directly to a river system, and so what you're putting on your property is connected to places that are far away from you, and so it's important to be mindful about that, especially since that's a lot of times where your water comes from, groundwater in Minnesota is where most of our water comes from. So as you put things onto the ground and it seeps into the ground, there's the potential there to add something to your groundwater that is not going to be advantageous to you in the long term, so those are real things that our everyday choices affect.

Mike: That's a really nice way to put it. Not going to be advantageous to you.

Megan: Well, it's not. I mean, if you fill the groundwater - -

Mike: That's a nice way to put it.

Megan: - - full of runoff, it's not going to be advantageous to you. (Laughing)

Mike: The third benefit is how it benefits biodiversity, and you know, so that's an interesting one to think about. It clearly is benefitting biodiversity. You've got all these pollinators in your yard, you've got, you know, yeah, various insect species regardless of whether they're pollinators, you've got birds, you know, Allison and me, in our backyard, we have seen an uptick in birds back there since we planted our native plants. And so that's a lot of fun. The plants themselves, of course, so all these are important and very valuable, and you know, it's, there are a lot of questions about the extent to which these backyard prairies really provide habitat for prairie species. So species that really rely on and use real prairie, either remnant prairie or large reconstructed prairies. Are these backyard pocket prairies providing habitat for them? And there are questions about that, and legitimate questions that there just doesn't seem to be a lot of research on it right now, and I think that's a topic that we need to study more. But I think there's potential, and in particular, I think there's potential for migrating species. So all these migratory species when they need stopover habitat, you know, between their wintering and their breeding destinations, this is both birds and butterflies mainly that I'm thinking about, they get a lot less picky about where they, you

know, compared to where they breed, their stopover habitat just basically needs to provide them with some resources, some short-term resources, and these backyard prairies have a lot of potential there I think.

Marissa: Yeah. I agree, and I think, you know, just even our prairies, you know, any given prairie can't be everything to every species, and so it's definitely true that like pocket prairies, urban prairies are not going to provide habitat for things like Dakota skippers, right?

Mike: Right.

Marissa: Or some of our really rare species or prairie obligates or things like, you know, - -

Megan: A bison.

Marissa: - - grasshopper sparrows, bison, very good obvious choice. But I do think they're going to provide benefits for a lot of, you know, other species, and just increasing, and generally just going to increase the diversity of our neighborhoods and our urban spaces in general, so.

Megan: I heard something recently as I was listening to the climate summit, and I just want to talk about it just really quick because you mentioned diversity and Mike mentioned biodiversity. And so one of the commentators it was a reporter commenting on the climate summit said that, you know, it's hard for people to wrap their mind around biodiversity and how it's important because they'd rather talk about climate change. And I thought that was such a striking comment to make because biodiversity is deeply connected to the effects of climate change. And so it was interesting to me that they somehow felt they were separate. And so that's a challenge, you know, to us as people and as land managers who are listening that we need to do a better job of helping people understand that when we lose species, that has a detrimental effect on the world and the climate and everything is connected together, and because we don't know the role that all the species are playing, it becomes impossible to predict, you know, which group of species is going to have more catastrophic effect than another group of species. And we can go down a long rabbit hole here, but I just really want to make the point that biodiversity really is connected to climate change, and it's important that we amp up biodiversity and don't lose any more because diversity is what makes our habitats resilient and makes them able to basically weather the effects of climate change, and it helps us to be resilient as well.

Mike: I should point out one, there is one very important species that these backyard prairies seem to support and help, and that's our federally endangered, our one federally endangered bee, the rusty patch bumblebee. I know, in the metro Minneapolis St. Paul area and some other areas in southeast Minnesota, people are commonly finding them in their backyard prairies. I don't think rusty patch bumblebees are necessarily, they're not a prairie specialist, they're not a prairie obligate by definition I don't think, but clearly an important species that we are supporting in our backyard prairies quite often.

Megan: Like it. You didn't mention some of these, Mike, but also tiny insects, deer, raccoons, squirrels, chipmunks obviously the basic urban wildlife. I know it might be strange to think about deer as urban wildlife, but I have deer that sleep in my yard, - -

Mike: In the middle of New Ulm.

Megan: - - my yard is not large in the middle of New Ulm, they come down from Flanders State Park, they eat all of my hostas, they nip off all of my native shrubs, and then they poop on my sidewalk, and sleep in the yard. That is what they do. But you know what? They're part of the ecosystem, too and they're just adding a little extra nutrients to the yard.

Mike: Absolutely. Yeah, it's a good point. In fact, because of those smaller and medium-sized mammals, we've had a few different raptors hanging around our yard, and that's been fun. We had like a cooper's hawk and a broad-winged hawk, and a barn owl.

Megan: Oh, that's very cool. I have barn owls, too. And we also have a red-tailed hawk now.

Mike: What did you say?

Megan: Do you want me to do it, Mike? Do you want me to do it? (Making owl noises.) (Laughter)

Mike: Thank you. Yeah, thank you, Megan.

Sara: Or if you really like lucky she's - -

(Animal sounds.) (Laughter.)

Megan: Like if you're really lucky to hear that.

Marissa: That's very good, yeah.

Mike: It's kind of scarily accurate, yeah.

Megan: Thank you. I really appreciate it. I've been working on it for 40 years. Anyway, we should move on.

Sara: I was just going to add, too. We live in a more rural area, so one other thing I've noticed is that we do get some nice up-close looks at some prairie species that we would not see normally, even though we've got prairie all around us because we have those little gardens closer into the yard where we are, again, spending more time just sitting and looking at things, but I've seen we've got Franklin's ground squirrels that are hanging out - -

Mike: Really?

Sara: - - in our yard now because I think because of that garden and I've seen a prairie snake in there before, - -

Megan: Oh wow.

Sara: - - and, you know, of course all the other insects and things that people were talking about. But, you know, it's just, it is a way to attract some different species in closer for some fun observation for sure.

Megan: I like it. Well, we're going to run through a few steps to get you started. If we haven't convinced you yet with all these benefits, we spend a lot of time on benefits because we think it's important, and so we're hoping to convince you that's important as well. So like we mentioned earlier, there's some basic steps to home landscaping. And so the very first step is to think about where you want to place your garden, what shape is it going to be, what's your current habitat situation or lack of habitat situation, do you have trees, are some of them diseased or older, where you think that they might die soon, do you want vegetable gardens, do you want to have shrubs, do you want to plant some trees? These are all good things to think about. And then main gardening basics, right? How many hours of direct sun are you going to get. If it's six or more, you're in a full sun situation, other than that, you're either in full shade or part shade. You want to think about topography, so slope and aspect, how steep things are, where does the water come from, do you have runoff from your roof? Because that can sometimes make the ground more salty or add minerals, or even pollutants, and so some plants don't tolerate that runoff very well, so you want to think about that. You want to know your soils and your goals. Mike listed his goal earlier. His goal.

Mike: Replace lawn with native plants, yes.

Megan: Yeah, which is a great goal. Then you want to think about budget, and I know sometimes if this is the first time you're doing this, it's like wait, I don't know what my budget is, but it will come, and people can help you with that. You want to draw a design, if that is useful to you. Choose your plants, do side prep, planting, and maintenance. So those are kind of the basics steps, and what we thought we would do is walk through each of them and talk a little bit about some of our favorites and our experience doing this. Sound good?

Mike: Megan, I was just going to offer that when you're talking about planning, it is important, but it's important to emphasize that starting small can be, I mean, I don't want to squash anybody if they're being ambitious and they're ready to, I was kind of that way, but my wife sort of reined me in and as usual, she ended up being right. Starting small was a good way for us to get started because we're, you know, we're novices with growing a prairie, and yeah, nothing wrong with starting small and figuring things out before you do your entire property, which is kind of what I wanted to do initially, and yeah.

Marissa: Well, I would add to that that timeline is something to think about, too. Because it's not just, yeah, goals, timeline, size, they're kind of connected, and the thing that I found is like you don't have to do it all at once either, right? So thinking about staging it and like starting small and building, and adding, so thinking about the timeframe and your timeline too can be helpful in the planning.

Megan: And one of the most important things to do while you're in this planning phase, especially if you're in an urban environment is to know your local ordinances. So some cities and townships have restrictions on vegetation height, which would directly

translate into what you can plant in your yard. Some cities like in the city of New Ulm, that's restricted to certain areas. So I mentioned earlier it's the boulevard. So our boulevard for visibility and other reasons has to stay at six inches in height, and so that means there's limitation, right, to which species I can put in the boulevard as I diversify it. I also, before I did my native garden because it is I think Marissa, what did you say earlier? It's not as landscaped as others might be, that is what the hillsides look like. So to me, it's beautiful, but, you know, beauty is in the eye of the beholder, and to others, it might look messy or out of place. And so I made sure to call the city and say hey, this is what I'm planning to do because, you know, I've spent a couple hundred dollars on each section of my yard here, and it's not a small investment for me, and I want to make sure that I'm playing by the rules and knowing all the local laws so that it can stay. So it's something really important to do before you go no mo' is our new catchphrase. Know before you go no mo'. Too long but we're working on it. Okay, so let's start out with drawing your design and choosing your plants. We talked a lot about benefits of native plants and that's mostly what we're going to be recommending here today, but I think everybody said to remember this is your garden, like this is your pocket prairie. So I grew up in a household where my grandma collected hosta magazines, and she's had so many hosta magazines, and it was her goal to buy like every hosta known to man. And somehow this got filtered into me that now I have a love of hostas, which I don't understand why because they're not, there's nothing particularly exciting about them really compared to prairie, at least in my office. But so in my prairie, so in my woodland areas that I've made and some of my prairie areas, you might find a random hosta. While that's not strictly a native prairie or strictly a prairie reconstruction, it's my planting, and I like them, and so I can do that. So you just want to think about what you like, and sometimes we get in our own way of thinking. Well, it has to be only prairie plants, right? And it has to be only this, but it's your garden. And so maybe you also want to have an area that has vegetables or something else, and that's okay. So if you're going to do native plants, there are some basic considerations, and the first one is seed versus plants. So in general, if you use seeds, you have less control over plant placement. It can take a little bit longer, and often, it looks weedier in those first establishment years, which can be tough if you are in an area where your neighbors might be looking at it every day and they might have a lot of opinions about what's going on, on your property. So you just need to be prepared for that. I always recommend signs so people know what you're doing. And so that it just helps like no, I'm not intentionally just not mowing or not quote unquote taking care of my yard, I have a purpose for this and I am in transition to a prairie. We also use those signs quite a bit on DNR-managed lands at our stake parks or other places so that people know a prairie is in progress.

Mike: What are some examples of these signs, Megan, you know off the top of your head?

Megan: Like where you can get them?

Mike: Where you can get them, yeah, I guess that's mainly what I'm asking.

Megan: Oh, yeah. So you just do a search for prairie signs. Tallgrass Prairie Center has a nice list of places where you can get signs that are already made. There's also like if

you go to Etsy or some other online shops, there's places where you can get some nice signs.

Mike: Things that basically say like.

Megan: Prairie in progress.

Mike: Pollinator prairie or whatever.

Megan: Or no mow zone or this native planting benefits monarchs or this native planting benefits songbirds. I have a few that have pictures of different wildlife that say this native planting is benefitting me.

Sara: I've seen people even just, you know, print something off at home or write something out and laminate it and, you know, stick it on a post in the ground.

Megan: It's a great kids' activity, too. Yeah, if you want them to draw something, you know, some of the things that they're seeing. I know that, again, during the pandemic, I look out my window and there'd be lots of children in my yard just looking at things, and then a couple times there would be pictures on my doorstep of things that kids had seen in the prairie plantings that they want to share with me, so I thought that was pretty neat.

Mike: Yeah.

Megan: So the other thing other than signs is plants. When you use plants, you have more control over placement. It can be a little bit more expensive because obviously you're paying for a plant that's already been cared for, is a little bit older, and also has a better chance of survival in some cases. And so.

Mike: Megan, I was going to say that when it comes to cost, I think that's one of the biggest factors is seed versus plants.

Megan: Mm-hmm. Yep, seed is generally much more affordable.

Mike: I mean, I would say it's not a little more expensive, I would say there's a big difference there really in cost.

Megan: Yep, in plants. It ranges depending on where you get them from, but on average, you're looking at anywhere between $3 to $7 a plant just to give folks an idea. Whereas for a seed mix, like a 50-square-foot seed mix, you could get a seed mix for under $50 depending on how diverse you wanted to make it. Of course, the bigger your area, the more that that cost goes up, but it also depends what species you want in there because some are more expensive than others.

Marissa: And some species are maybe even less likely to establish from seed, and so there are some species that you might just have a lot more success from, even though they might be a little more expensive, you could buy the rarer plants, buy fewer of them, and make sure those get out there.

Megan: Absolutely. We call those restoration conservative species.

Sara: Plants like plant plugs we call them are probably a bit more accessible for most people, too than seeds, you know, especially if you wanted to have a really truly native

mix of seeds. You can buy wildflower packets. I've seen them around. But then if you look at the ingredient list, there's a lot of species that aren't native to Minnesota, and that's almost defeating the purpose of trying to support your native pollinators. So, you know, there's downsides of trying to just go with seeds as well.

Megan: Yeah. The benefit just you know, to play the flipside of that, the benefit is that we have a lot of native seed suppliers in the state of Minnesota who are well-versed in how to put together a seed mix that meets your goals and your budget, and so that's another thing that you don't have to be intimidated by. There are people who to help you navigate and do that. Same with plants if you're buying plants, too.

Sara: Yeah, and that just - - right, and I, that's when I was saying accessible, it just is, it's a little easier to find, you know, the odd echinacea at even a box store nursery than it might be the seeds, so but yeah, we have, will share a bunch of resources as we go along here of different places that you can get both advice, but then also plants, and seeds, and everything.

Megan: Absolutely. And so the number of plants to use comes up quite a bit, and the general rule of thumb is you need one plant for every square foot. So that makes quite a crowded garden, so you could also do one plant for every two square feet if you wanted things to be more spaced out or if you're planting a lot of grasses or sedges. So you want to think about that. One thing with seeds, I just want to give you these rules of thumb here because I think it's pretty important. So these are Megan Benage's golden rules of a seed mix. So if you are trying to create a seed mix to support pollinators or other wildlife in general, it's very, very important that you fulfill the guilds or functional groups. So that means cool season grasses, warm season grasses, legume forbs, nonlegume forbs, and sedges, and rushes. And I know it might sound surprising, sedges and rushes? But if you have even an upland site, there are many upland sedges that help fill that cool season or that early spring and late fall time periods. So it's really important to have those. And you want to think about having something that blooms and grows all season. This is true for both seeds and plants. You want to think about creating that habitat so that it lasts while all different kinds of insects and other wildlife are out. I usually shoot for a minimum seeding rate of 40 seeds per square foot. And if you're like I don't even know what that means, don't worry, the seed vendor will know what that means, and so you can give them this and tell them that's what you want. At least a 40% of the total seeding rate should be composed of perennial forbs, and that's if you want to have a lot of wildflowers, a lot of different colors, that is a good target. Seven or more native grass or sedge species with at least two species of bunchgrass. Mike might talk about this later, but bunchgrass tends to provide a lot of good habitat for a lot of insect species, and so you want to think about making sure that you have bunchgrass in there just because of how it forms. I'm trying to describe this with my hands, which is really great on a podcast, but it's bunchy. Like tight and then has some grass that sort of hangs down, so it provides this clumpy, clumpy, so it provides a little extra habitat and cover. 20 or more native forbs with at least five species in each bloom period, bloom periods are just early, mid, and late. And so early would be April to May, mid-June to August, and late is August October. So you can think about it most simply as spring, summer, and fall. We already talked about fulfilling the guilds and then

include species from different plant families to support the widest diversity of pollinator species and other wildlife. So those are sort of my general golden rules.

Mike: Hey, hey Megan, okay. I appreciate those rules. I will emphasize that this is an example of what can be intimidating to a person starting out, trying to keep all this stuff on their mind, and - -

Megan: And they don't have to. They don't have to keep it in their mind.

Mike: Okay, thank you, thank you.

Megan: The best part is that they can talk to a native seed supplier and they can help walk them through this, and then they can even play this part of the podcast to them and say this is what I want.

Mike: (Laughs) There you go.

Megan: I want a seed mix that does this.

Marissa: So I want to say also from my experience in my tiny space in the backyard, and I guess these are things I kind of knew already, but like, you know, get taught to you very clearly when it's like in your face in the backyard. Thinking about certain species and how aggressive they can be upfront, so for instance, I have some mint in the backyard. Mint, wild mint is great, it smells wonderful, and it is a very happy plant to grow wherever it wants, and can sort of take over a lot of other things. So thinking about that balancing some of those things when you're choosing your plants, too. Similar with some of the milkweed species, like swamp milkweed is now volunteering and all over the place in my yard, which is great, but also can start to take over some of the spaces. When you're dealing with a pocket prairie or a little space in your yard, you know, having a couple of species of plants that can be very dominant, you know, balancing that with some of the other species that are smaller may not compete quite as robustly in that tiny space is a good thing to think about, so anyway. Thinking about some of those upfront.

Megan: No, that's a really good thing to think about. And if like Mike said, if you're like I don't know what those species are, again, a native plant supplier or landscaping company can help you with that so that you don't have to slum. And there's also lots of books, too that will help explain some of these things.

Marissa: And you will learn over time - -

Megan: Yes.

Mike: Right, right.

Marissa: - - as your prairie will teach you, so.

Sara: Honestly, that's been one of the most fun things about having those little pocket prairies in our yard is oh, I should have known that is not a bunchgrass. It is going to spread everywhere, and I should know that. But you don't think about it again, not in the context of that full prairie plant community. Things are a little bit different. Things grow

taller than they maybe would in a more natural setting. And yeah, I think that's, it's sometimes frustrating but also kind of fun.

Marissa: It is.

Megan: Last thing I'll mention for this section is nesting space. Mike, this one's for you for birds, bees, and other pollinator species. So ground nesting bees in particular need barely or sparsely vegetated soil that's loose. So I have a home that's on sand, and so I have a lot of ground nesting bees because there's a lot of sound, sand, what am I trying to say, words are hard, a lot of sand around my house. And so that creates ideal nesting spaces. And for some people, like if my neighbor is listening to this, she will say you keep the bees on your side of the yard. I don't mind the flowers, but you keep the bees over there. And so I know that there can be some fear with stinging and other things, but the majority of our bees quite docile, they're not harmful, and they're really just looking to do their business of pollinating. They're not really interested in you.

Mike: I spent a good deal of the last few years literally chasing and getting as close as I can to bees and bumblebees, and I never once been stung. Knock on wood, I mean, and of course, it's fine if they do. Anyway, yeah.

Megan: They know you're friendly, Mike.

Mike: Yeah, so bare ground is important, but, you know, it's also important emphasize it's not just bare ground. A lot of species like some cover, they like things like leaves and brush piles, thatch, which I take to mean basically just, you know, dead grass. So yeah, and undisturbed is also important. You know, don't till up some ground thinking you're creating bee nesting habitat. You want to leave it alone. Yeah, bare ground is important along with for our cavity nesting bees, they like hollow stems, right? So this is, you know, we've all seen, I don't think we've all seen, but most of us have seen these nesting boxes that have the hollow spaces for bees to nest in. The best thing you can probably do for cavity nesting bees in your yard is to make sure there's natural vegetation there that they can use, and I can't name a species off the top of my head, maybe somebody who can, you other hosts. But if not, we'll post a resource online that lists these species, University of Minnesota website has these species on them. Yeah, you want a variety of heights, and for various species to use for nesting. It's also important that you only cut these stems when you lop off the heads of the plants, the flower heads, you do that in spring, and yeah, that's an important part for the cavity nesting bees.

Megan: I'm surprised at how tall you want to leave some of the leaves, 8 to 24 inches.

Mike: Yes.

Megan: That sort of goes against, you know, good gardening practice, quote unquote, and it's just a reshaping of how you garden that you have to think about, oh, I need to leave things higher and not take it down to the ground.

Mike: You know, they're dead, and so a lot of people their nature is to go in and cut those out just purely for aesthetics. But no, leave them.

Megan: Leave them. Mike, tell me just really quick a little bit about the importance of native shrubs.

Mike: Okay, yeah, shrubs are important. You know, we don't think of shrubs very often when we think about prairies, but they are important in prairies. But in our backyards, they're also important, especially for birds, of course. If you want bird diversity in your backyard, some native shrubs, and I emphasize native is a key thing with shrubs. There are certain species that can really cause a problem, certain non-native species. They are also important for many of our pollinators. So just a really good way to add diversity, wildlife habitat for wildlife diversity in your yard. You need at least a few shrubs scattered about.

Megan: I like it. Shrubs scattered about. Protection from insecticide and fungicides is another thing. This is one that's hard, right? Because we don't always think about it. Like we wouldn't intentionally spray a bumblebee or a butterfly, but if we're spraying some of the plants that they are nectaring on or collecting pollen from, there could be potential harm there. So we want to just be really, I'm going to use the word of the day, judicious about our use of these things, and both judicious in thinking about whether or not we need to use these things in our yard or not. You like that? That's my $5 word. Okay. Let's talk a little bit about design and then we'll move into some of these other sections. Design is arguably, so choosing plants and design is probably my favorite part of figuring out what we're going to plant because it's something that I do in winter, and when it's cold, it's just nice to imagine all of these green, growing, beautiful things that are going to be happening in my yard. So think about we have talked about how we have some formal gardens, some structured gardens, and then we also have some that are meant to be more wild intentionally. And so you want to think about do I want this to be that way, neat and orderly. In that case, you might want to use plants because you have more control over things. A typical rule of thumb is to group plants in threes and fives as a golden rule because it's generally more pleasing that way. And so when we say threes and fives, we mean each species. So if you had three pasqueflowers, you would group them together, and then five prairie smoke behind that. Think about the height of each individual plant. You don't want to put something that's very, very short behind, let's say, big bluestem, where then you're not going to be able to see it because it's just going to be tucked down and hidden by the grass. So that's something. Host plants is really important. Obviously, we talk about milkweed a lot for monarchs, but there are a variety of other ones, prairie violets for regal fritillaries, those sorts of things are important to sort of think about. We do have resources that we can post online so you know some of the host plants. And then think about borders. My word, a border can go a long way into helping people understand that this was intentional. So one of my favorite, favorite border plants is prairie dropseed because it's low, it looks like a fountain, and if you put it on the edge, you can use that and rocks, and then you can pretty much get away with anything that you plant behind that, even if it's a little bit messier or what have you, because that prairie dropseed is just so neat and orderly, it's just this perfect little fountain of grass. And so I love using that as a border because it makes it look really intentional. The one pro tip is that you're going to want to put it about a foot and a half to two feet back from the edge of your garden because as it does grow through time, it gets bigger and bigger, and that fountain of grass gets larger,

and so you don't want it necessarily hanging over the sidewalk or hanging over main traffic areas at least for me, that's one of the things I think about.

Mike: Just to reiterate there that the reason which you just said was important is if you have neighbors that may not be happy with a messy-looking prairie, even if it supports lots of wildlife, that border idea is important, and that can help people really like oh, intentional is the word you used.

Megan: Yeah. It lets them know that it's an intentional space. And I work from home most of the time with my windows open, and I hear a lot of comments about my yard as people are taking their daily walks. And some are amazing. You know, there's like little screams of excitement from children that are like a butterfly, you know, and then there's other people that I hear that walk by and are like this is a travesty. And so, I mean, public opinion varies, right? And so I also have, I talked individually with my neighbors, which I felt was really important, and they are all so amazing. They were all we're going to do this in our yards. They're just inspired and they're excited, and they like what they're seeing.

Marissa: Yeah, so I will say like site prep is really important. I think the keys to the two main keys to site prep are, especially if you're starting with a lawn, is removing the sod, like getting that layer of your sod grass off. Because what you need to do essentially is you want to reduce the weeds, quote unquote weeds, the lawn grasses that you've already got there, and you want to expose the soil so that either whether it's the plugs that you're planting or the seed that you're planting can contact with that soil. So those are kind of the two main goals. Reduce, get rid of the side grasses, and expose the soil for the prairie plants, whether that's seed or plugs. And so there are many ways to do that, and so this is where thinking about that size, how you're starting, where you're starting really comes in because actually, this is not a small amount of work, let me just say. My experience, in my yard, I have vegetable gardens like that I've put up, and we have prairie areas that we're playing with, and digging that sod up is a lot of work. So think about that ahead of time. There are a number of different ways to do that. You can literally dig and pull off the sod. One of the ways that is I think really successful is to actually cover it what's called like solarization. Essentially, covering it with plastic. I've used black plastic, I think clear plastic is sometimes been known to be better in terms of increasing basically you're trying to trap the heat and solarize or basically kill the vegetation underneath that plastic. So that then it makes it easier to remove and then expose the soil for planting into. There are a number of other methods that people have tried, including smother cropping, cover cropping, so planting something else on top, and then being able to something that's annual, something that will then die or and is easy to remove. One of the other things I think you have to think about in a like suburban setting in particular if you're in a housing development is that, you know, sometimes when they come in and building houses, they scrape off that topsoil. And so thinking about what it is that's in your yard, scraping, so when they build these houses, sometimes they scrape off that topsoil, and so it's really important to think about like what it is you're planting into. You can do soil testing, you can sort of, you can send I know here in the Fargo Moorhead area, you can send it to NDSU North Dakota State extension lab will test your soil. I think the University of Minnesota probably has a similar sort of thing to sort of get an idea of like what is your soil like, what are you

dealing with, what are you planting into, and that's important whether you're doing vegetables or prairies. Your prairie plants are probably going to be able to deal with it a little more than your vegetable plants, but that can be a useful thing to know. So yeah, those are some of the key things. You can also use herbicides to kill off the plants. I'll be a little careful with that because thinking about lingering effects sometimes can be important to consider. But yeah, essentially the main keys are trying to use some method of removing the vegetation that's there and exposing the soil for you to plant into.

Sara: I will say from personal experience this is a very important step. The next step of planting things is really my favorite. And so I have in the past been known to get a little carried away and start throwing stuff in the ground before I really fully prepped the site and like Marissa said, sometimes that can actually, it can sometimes take a couple of years even of having the mulch down or the solarization to really knock everything back underneath there. But if you don't do that step, you're just making a real headache for yourself down the road as far as additional weeding and trying to maintain, so.

Megan: Yeah. We should maintain so solarization is my favorite home method to doing this because I just think I got the best establishment on that hillside in my little home experiments that I did that with, but it takes a full season at least, so you would lay down your clear plastic in the spring, and then you're not planting until the fall, or you're not planting until the next spring.

Mike: In our yard, which has crummy, poor, sandy soil a couple of months does a pretty good job. Yeah, it'll vary by site, yeah.

Megan: Yeah, and you'll know. Yeah, you'll know because what you're looking for it actually turns to soil underneath, so you don't actually at least at my yard, I didn't have to take any sod off afterwards. It essentially composted the soil. I can't think of a better way to describe it. Where I looked under there and the only thing that was growing was moss, and where I before had had lawn, now I had nothing but just these huge areas of moss, and that's because I used black plastic and Mike and I had a really nerdy conversation about this, about which plastic do you use. It's all I could find, but black plastic reflects the sun and it doesn't quite absorb all of it, and so you really want clear plastic because it absorbs those rays and funnels them more directly into the soil, which you should be able to get at any local farm store, so anyway, just a note about that. I love solarization. It's a great method.

Marissa: It's very simple, and I do think yes, good point. It is a little more, it's a time investment. So if you're like Sara and me and you just really want to get things planted out there, you have to have a lot more patience, but it also requires less energy from you because you're using the energy from the sun instead, so I think that's great.

Sara: Something to remember about if you're just going to remove the sod or dig up any of the plants that are there right now that you don't want is a lot of our lawn grasses are, they're sod-forming grasses, and that's because they've got these underground stems called rhizomes that grow out, and a lot of those live in the soil for a very long time and can regrow new plants, and so you have to really dig and get every little tiny root fragment out to know that it's going to be ready, and so that's where that was my

mistake was I just dug up all the grass and thought I was ready to go, and then I ended up having a bunch of grass growing in my prairie planting not native grass that I didn't want there, and so yeah, I agree that that solarization route or any of those other kind of mulch smothery kind of approaches are great ways to go.

Megan: I like it.

Sara: All right. We're going to planting next, which I already said is my favorite part. It's the part where you get to your hands in the ground and play in the dirt a little bit, which is always a wonderful thing to be doing. So.

Megan: Sara, did you just call it dirt on a prairie podcast?

Sara: Soil. Sorry.

Megan: Wow. You think you know people and then you learn stuff about them every day. (Laughing)

Sara: Growing up, people would ask me what we I we need to do when I grew up, and I didn't know what it was called, I just would say I want to play in the dirt and get paid for it. So sometimes that's stuck in my head, that idea of playing in the dirt. You get to dig around in the soil. So we've already mentioned that we've got a couple options. We can use plant plugs, which are, you know, just like you would expect from any other vegetable or flower that you buy from a garden store, they come in a little container, and one thing that I love to do with those is if you go and buy a whole bunch at once, you can take those and actually just set some of the plants out in your garden how you were visualizing things or how you maybe had drawn a design, and see how you think it's going to look, think ahead a little bit, of course, because they're going to be little baby plants when you're doing that, and think a bit about how tall they might grow and how much space they might take. But that's a nice way to kind of get yourself started and not end up with everything all crowded on one end of your garden space when you're done. Again, speaking from experience. I usually like to give them a good glug of water, too, just to have a, I just usually have a hose or a bucket there with me and as I plant each one, I just give them a nice, good soak right as I stick them in the ground.

Megan: When you measure a glug, I'm just curious, and now is a glug (laughter) - -

Sara: It's a very tactical term.

Megan: - - a gallon? Is it 12 ounces? Is it a cup? Just, help me understand.

Sara: I honestly don't know. I would guess it's probably about two cups is what I end up dumping in there. What I'm usually looking for is does the soil look a little bit wet after I do it, and so it might depend on your site and what your soil moisture is at the moment when you're doing the planting, too, but a little bit of water right when you plant them helps them get over that stress of going from the pot to the ground. And then as far as putting seeds out on the ground, you know, there's a lot of things that you heard us talk about all these on the podcast before, but just thinking about when you're putting that seed out there, you can do your pocket prairie just like you would do any other prairie as far as throwing some seed out over the snow if you know that your site is ready, more commonly will be in more sort of structured setting where we've pulled off our

solarization and we've got nice, ready soil, and then we'll toss the seed on top of that. For what's really important if you're planting with seeds is to make sure that you're getting good contact with the soil. Some seeds like to actually be underground a little bit. And so if you've got individual plant seeds from different plants, there's great resources out there for you to know if they need to be planted deeply or when I'm saying deep, you know, a quarter inch under the ground, or there are some that really do a lot better if they're just scattered on the top of the soil surface. It varies by plant. But one of the ways that you can make sure they get really good soil contact is just to compact the soil after you plant it. In a small garden setting, that might just mean walking around. My kids had fun with that on one of ours. We just threw a little bit of seed out, and we all walked around, stomped around out there, and tried to make sure that it was kind of nice and packed down. But you can also rent like a little packer that you, you know, from like a garden store I think where you push it, and it's just sort of a heavy thing that rolls over the top just to help pack that soil down a little bit. And again, just a little bit of water initially can help things out, but you don't want to really put any fertilizer down like you might if you're planting a lawn. Most of our prairie plants actually do better in low-nutrient settings, so that's something you can avoid. And again, we mentioned that's one of the benefits of prairie plantings is you don't have to mess with fertilizers and all that. We think sometimes when we're planting, too, you know, we've talked about a little bit about thinking about your site and what the topography is, and if it's shady or not, all that kind of thing, so there are some considerations that you're going to want to have as far as, you know, if you do have a real hilly area, you might need to do some things to help with erosion control as that site is getting established. That might mean some kind of an erosion mat or some fabric to kind of help hold things in place. We've also just used rocks like almost becomes part of the landscape to have some rocks placed around or small boulders, what's in between a rock and a boulder, small boulders, large rocks, and you can arrange them around on some of those slopes, and that can help with some of the erosion as well. I don't know. You guys have anything else that you're thinking about when you're doing planting? Those are the main things that come to mind for me.

Megan: Well, I'll just tell you the one, the big mistake I made is that I used erosion control netting because I do have slopes, and that hillside is my least favorite, nobody tell it, but it is, because that plastic mesh it said that it was compostable, and that it would, you know, be gone in a season. It's still there where like four years later and it's still, and so what it means is that I mow my hillsides in the fall, not every fall, but I alternate as a way to do at-home maintenance, which Marissa is going to talk about next, and I can't mow that hillside because the netting, the mesh netting will get caught up in the mower, and so I have to use a scythe, and let me tell you how much fun that is. So I really, that was a big mistake that I made, and I wished that I had used something with more natural fibers or done a little more research, or done what I did on the other hillsides, which is I just used straw to stabilize the hillside, and that worked really, really well. And so I wish I had used a slightly different method.

Mike: Using a scythe is fun, though, pretend you're the grim reaper and.

Megan: Mike, you can come to my house any time and use a scythe on that hillside. It is in fact my gift to you for 2023 is to come and scythe the hillside. (Laughter)

Mike: You know, dad used to make me do that around the ditch back home. Yeah. Hey, hey, it's a deal as long as there's a cookie involved or a few cookies.

Megan: Hey Mike, it brings me great joy to provide for you these gift experiences.

Mike: Yeah, you got to replenish the calories that you use, you know.

Megan: Yes, there will definitely be cookies involved. I can't wait till you come scythe. We'll have some pictures. It'll be lovely.

Mike: All right.

Sara: One other thing I thought of, too we were talking about putting fabric down for erosion control purposes, but you also want to, you know, after you finish planting, some mulch over the top of that in and around the plants or over the, if you really would want to do that over the seed, but, you know, that can help with weed suppression initially. I generally recommend against using the actual that black plastic landscape fabric that you can buy in the store. People like to put that down commonly in gardens, but we usually recommend against that in more of a native plant garden or pollinator garden just because it doesn't ever breakdown, which is great if your goal is weed suppression and keeping it looking like a nice formal garden, but we talked about all those benefits for nest - - ground nesting bees and other little critters that might need to be able to get through the soil there, that is going to be in the way of them and causes problems for those guys, so.

Megan: Yeah, and leaves are a perfect natural mulch. So if you happen to have a yard that has trees, you can just in the fall of the year rake your leaves and I have been amazed. So I have put 15 feet of leaves into my flower bed, and I think to myself even being an ecologist, there's no way these leaves are going to break down because there's also, I have a lot of oak trees, which have a high tannin content, which means it takes longer for them to break down, and I tell you what, we get to spring every year, and it just a light couple inch mulch that's over there. I don't know what those microorganisms in my soil are doing, but it just gets faster and faster every year. So the more - -

Sara: That's healthy soil.

Megan: Yeah. The more native plants I've put in, the more microbial organisms that have colonized my soil, and then they're breaking down my leaves, but it's just a great really affordable mulch. And if you have neighbors that are like I don't want these leaves, go ask them if you can take their bags of leaves that are on the curb and use them for mulch. You might get a look or two, but it's fine. It's a great, affordable way to add some natural mulch to your landscape.

Marissa: Yeah, and that can be part of that maintenance phase of prairies, too, right? Mulching over time in the fall and thinking about how to do this, and the maintenance of your native plantings, one of the benefits for these native plantings, right, is that they are lower maintenance than sort of traditional formal, traditional but more formal gardens, right? However, there is some maintenance that can be useful, and especially in the beginning as these things are starting to get going, and I would say, you know, Sara,

planting is, I agree, one of my favorite parts, but I actually don't mind the maintenance piece either because I feel like that's a time when I really get to observe and like see how are things doing and what's going on out here. And so while I'm out there doing the things, like the weeding or just checking on, you know, how things are doing, you get to see how things are going, and so that's kind of one of my favorite parts, too is actually the maintenance, and partially I think that is because it is less intense than some of the maintenance that's required for like, say, my vegetable garden. But in general, the goal of the maintenance phase is to help get those plants established, particularly at the beginning, especially if you're starting from seed, trying to think about reducing the competition from some of those plants that were probably already established. I mean, even if you use solarization, some of the things in the seed bed are likely going to come back and start to try to grow again. And so really what maintenance is, is trying to keep that weed, quote unquote weed pressure down and reducing it so that the native plants that you planted have a chance to grow, and, you know, there are a number of ways to do this, some of which are very similar to, you know, your typical gardening activities in other areas, like literally weeding. If you've got a small area, I do, I actually do go out and weed my prairie garden because I enjoy, like I said, just getting out in there and seeing what the plants are doing and kind of pulling out the things I don't want that are starting to establish and kind of keeping some of those grasses out, so some of the native grasses can start growing and keep going. Initially, you probably want to do this somewhat often, even with the plugs I think to try to make sure that they're getting established in that first year, maybe that second year, going out once a week or so, check on your plants, pulling out some of the things you don't want. You can if you've got larger areas, you can try mowing. I wouldn't necessarily try that right away with your plugs. I think you want to, you know, keep up with some weeding at first because making sure that they really get their roots established. But if you've got large areas, and you know, and a year or two later, mowing can be a really good way to reduce some of that undesirable plants. I do actually know some people who have tried prescribed fires. So these are mowing and fire, like grazing and fire are the two natural disturbances, right, in our prairies, and so that's kind of what we're trying to mimic with this maintenance is, you know, that disturbance with the mowing kind of mimics some of the grazing, and I do know some people who have burned their prairies in suburban, urban areas. That is something you have to be very careful with if you're going to try that, and I'm not sure, you know, yeah, so just be very aware of, you know, the risks of trying to light things on fire in your garden. That's where the mowing can be much safer, the weeding much safer, less chance of burning something you don't want to burn. But essentially, what we're trying to do is kind of mimic those processes of disturbance and, you know, reducing in some ways what is also reducing is the dead vegetation. Because after a number of years, you start to get a lot of, you know, your sunflowers, your goldenrod, even some of your native grasses, they create a lot of biomass that will start to, you know, sort of create a big litter layer, and so something every once in a while to remove that biomass to increase the bare ground for bees and nesting, but also just to increase kind of the health and light availability for your plants to continue to grow. So those are just some of the things. I don't know if the rest of you would add anything to maintenance, but that's kind of how I think about maintenance in my prairie plantings.

Sara: One thing I was going to add is it's, it's easy to maybe over-tend your native garden. You know, again, we've mentioned this, but one of the benefits is it doesn't take a lot of maintenance, so, you know, and I do, like Megan, have some not-native plants. I really love petunias because they are, the hummingbirds seem to really like them, and so I've got some petunias in my garden, for example, which require some watering. You know, I live in a pretty dry, open area, windy area, and I have to do some pretty regular watering for some of those annual not-native wildflowers. That is not the case for the natives. And so you really want to be careful not to love your native plants to death.

Marissa: Yeah. Good advice.

Megan: Yeah. The only, okay, so three things I want to say. The only exception is that you have to pay attention to what's going on with the climate. And so last year in southern Minnesota in particular, well, these last two years, we've been in a drought, and so I had some very newly planted oak trees, and they're bur oak trees, so they're prairie oak trees, and they need a lot of water in those first seasons of their life, and they need even more water being in a drought. And so you do want to think about, you know, native plants are amazing and established and healthy native plants can withstand those climatic extremes. But if you're just starting out and we have a drought, they're going to need water in that year. I mean, it's just kind of a commonsense thinking. Like if everything else in your yard seems to be quite dry and dying, and you're just in those establishment phases, they're going to need a little sip of water. And even if you're in the maintenance phase, you know, years five and six and you've just moved into sort of that routine maintenance, they wouldn't mind a little bit of water if you're in a drought. So you just sort of have to gauge it and see how you think they're doing, and the plants will tell you. If they look very wilt-y or whatever, and, you know, you just sort of have to make those decisions. So that's one thing. The other thing about burning is you want to make sure that you check with your local ordinances and what can and can't be done within city limits, and you definitely want to make sure you're following all the applicable laws for that. The last thing that I was going to say about weeding, because I know Mike and I had this conversation, don't panic if you don't know what's a weed and what's the native plant. What you can do, and I do this sometimes, too because things look quite different when they're small, is let it grow out, and then once it produces a flower or a seed head and it's clear to you that it's not a prairie plant, doesn't look like anything that you planted on the seed package or on, you know, the pictures that you looked at online, or the research that you've done, then you can pull it out. So don't panic if at first when things are very small, you're like I don't know what is a weed and what isn't. I think Mike, I spent one day at your house just pointing out like this is a weed and this is a weed and this is a weed, and it can be hard because they were next to, Mike had little popsicle stick labels next to the native plants, and so he was like no, but I planted such and such there. And so that can be frustrating when whatever it is that you planted didn't come back or isn't there right now, it's a weed just taking up space. And so you can consult with people and you can also always just wait until it grows out, which is helpful. As you can tell, there's a lot to cover in planting a pocket prairie, and we're not trying to overwhelm you. That was Mike's biggest fear with this episode is we don't overwhelm you. We want to excite you, get you excited, and

empower you that you can do this, and there are so many resources online, and we're going to list some of those as we move into our next section.

(Music playing)

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 I'm just going to kick us off here. So Molly Tranel Nelson with Division of Parks and Trails here at DNR shared with me some amazing seed guides from Illinois, and we didn't talk about this today, but this is in case you're thinking about doing some seed collection instead of purchasing seed. And so again, you want to check and make sure that you're allowed to collect from certain areas. But these Illinois guides, they're from Lake County, and they show, I like them so much because they show the plant with the seed heads on it, and then a close-up picture with a ruler of the size of the individual seeds, so you can kind of see what you're collecting and how it's really nice and you can download them for free on the web. Of course, DNR has DNR's Landscaping with Native Plants website that you can check out that goes through some of the steps we talked about today, and covers even more detail. Doug Tallamy has an awesome book called *Bringing Nature Home*, which talks about this sort of ideology of what if, right, everybody planted a native prairie planting or a prairie planting in your backyard, we could have this cumulative, ginormous national park across all of our yards. And Mike mentioned earlier, Mike, what was the stat that you used for how many more lawns we have?

Mike: Oh, it's three times the area of irrigated, I think it was corn or all crops. Two or three times the area of irrigated corn I believe in the country, yeah.

Megan: Right. So that could be a very large connected space with native plants. It's not the same, obviously, as a native prairie, but it still would have some pretty big benefits I would think. And just to give you a frame, I don't know how much irrigated corn we have in Minnesota, but out of our, in Minnesota, we have 55.6 million acres of land, to give you some idea, and then just about half of that is farmland, so 25.4 million acres as of 2021. So when you think about that, I don't know what the breakdown of those acreages is for corn, but it could have a pretty large cumulative effect.

Mike: Yeah.

Megan: The last paper I'm going to mention is this one that you might know one of the authors, her name is Sara Vacek, you might have heard of her. It's *Persistence of Native and Exotic - -*

Sara: Hey, that's me?

Megan: - - Hey that's you! Wow, that was delayed. *Persistence of Native and Exotic Plants 10 Years After Prairie Reconstruction*. This was published in 2017 in *Restoration Ecology*, and what I love about it is they followed this prairie reconstruction project for 10 years, looking at, you know, planting method and maintenance and noxious weeds, and Sara could probably explain it far better than I am, but the long and short of it is, is

patience pays off. And so what they found is that with normal maintenance, and when I say normal maintenance, Marissa just talked about how the two main disturbance mechanisms for prairie are fire and grazing. So with in this case fire, they were able to see a huge decrease in noxious weeds by year five, and then they went down to pretty minimal number by year 10. So without herbicide treatment, without other more aggressive treatments, just diversity actually can help the natives can take over and become dominant, and then the weed population can go down, so pretty impressive research. Check it out.

Mike: My pick is a paper by Gabriella Pardee P-a-r-d-e-e and Stacy Philpott in the journal *Urban Ecosystems*, *Native Plants are the Bee's Knees: Local and Landscape Predictors of Bee Richness and Abundance in Backyard Gardens*. One thing I've discovered in prepping for this episode, I kind of knew this already, but it was reinforced that, well, you decided Sara's paper that she was involved with, there's more and more research now on reconstructions, and a lot of that can be extrapolated to these backyard gardens. Research that really focuses on backyard gardens I found to be pretty limited. And so given its potential importance, I mean, as pointed out in that book of yours, Megan, that you cited, I would like to see a lot more research really focus on these questions of what can be done in backyard gardens, and how can we do them in a way that really is most beneficial to prairie species. But I thought this was one paper that was in that niche, and that does provide some good tips. It takes place in northwestern Ohio. Bottom line is they were comparing really the main objective of the paper was comparing native to nonnative plants, and it's important to emphasize that nonnative plants can be great for pollinators and have a lot of important functions that can mimic native plants, native prairie species, so like Megan and Sara, I think both of you pointed out that you have some nonnative plants in your backyard, right? So we don't all have to be native plant snobs here, right? They can be important. And it can have big benefits for pollinators. This paper pointed out that the native plants tended to have a higher abundance of species and favored certain species of pollinators. One interesting thing they also pointed out was that gardens, when a garden was mixed with a native prairie planting in a yard, that was a factor for increasing diversity of pollinators and in this case bees. Diversity of bees and number of bee species. Overall numbers of bees, I'm sorry. So yeah, if you want to plant a garden, go for it. It's going to do nothing but help was the bottom line here.

Marissa: When you say garden, Mike, do you mean vegetable garden?

Mike: Thank you. I mean vegetable garden. That's what I meant. Yeah, right. That's my pick.

Megan: Well, and Mike, just I have to put this in there, right? Because we just learned this from Ferin Davis Anderson, but some prairie plants are also food sources. In fact, there are indigenous foods, so when we think about garden quote unquote, the garden could also be the prairie itself.

Mike: Oh wow, yeah. My mind is blown. Yeah.

Megan: You're welcome on behalf of Ferin really.

Sara: I have a couple picks. Two of them are resources that I think would be really helpful for anyone, especially if you're just getting started in this whole idea of planting a pocket prairie, and you might be feeling a bit overwhelmed by all the information that we've been sharing. One is a great little booklet that was published first in 1987, it's been reprinted a couple times, but it stands up, it was by Carol Henderson, who is a retired nongame biologist with the DNR, and it's called *Landscaping for Wildlife*, and it just goes through all of the different steps that we talked about as far as planning and thinking about which things are going to grow best in your area, it's got really long list at the back of various different plants and shrubs and grasses, which kinds of species they might support, what parts of the state they might grow best in. It's really the book that I have kind of the sentimental attachment to it, and I'm holding it up so that these guys can see how battered and ripped up it is and postmarked it is, but it's just a really good resource and still like I said, stands up with good guidance and information for folks as you're thinking through all these things. Another one that's very similar to that, but that's available online is the *Pollinator Toolbox* that the Board of Water and Soil Resources, they're a state agency in Minnesota, has. It's got just a huge amount of information about planting a site and thinking about what pollinators need, plants that you can pick, the whole nine yards, so that's really great resource online as well. And then I have one more science-y pick, which is a paper from *Conservation Biology* called *Planting Gardens to Support Insect Pollinators*, and it was published in 2018, I think. It was by Ania Majewska and Sonia Altizer, and this is what we call a meta analysis. So it's, again, analysis of a bunch of different research projects that were done to try to pull out some bigger picture themes and ideas that are consistent across lots of different scientific projects. And so they basically they were just trying to look at a lot of what Mike was talking about with his paper that he was discussing, just how much can garden settings fill some of those roles for pollinators and other wildlife species. And, you know, the answer that they got was they definitely can in some cases, and but the jury is still out on it, there's lots of things that we still need to learn, and maybe some best practices that could still be designed, but they talk about some of the things that worked pretty consistently across the board, which should be pretty easy for all of our podcast listeners, diversity, diversity, diversity, you know, lots of different plant species seem to attract lots of different pollinators, which makes a lot of sense. The size of a garden, a little bit bigger, tends to attract more, but it was interesting to me that one thing that they found, too was that the characteristics within a garden like diversity and size, and sun exposure, had more influence on what the pollinators that would be present there than the surrounding landscape. So I thought that was kind of interesting. So to me, that says yeah, that garden can really and how you design it can really make a difference. So I thought that was kind of interesting paper.

Marissa: Cool, yeah, that's great. I sort of cheated and I have one pick, but it's one pick that lists so many things. So my pick is really the Tallgrass Prairie Center's website that's out of the University of Northern Iowa. And they, if you haven't been to this website, it's just a plethora of resources around restoration. And, you know, a lot of this, some of it is more like largescale restoration, but one if - - if I've learned anything from my little prairie in the backyard, it's that like many of the same concepts apply, and so yes, if you're planting a pocket prairie, you're not going to be needing a Truax drill, but the website has so many videos on like how to plant prairies and how to prep prairies

and how to seed, and they have a lot of resources around species, they have resources around like technical guides, how to do things, and while some of the big-scale things may be different, I think a lot of the concepts are the same in terms of how to apply them to your small prairie plantings. You know, and in talking, Megan mentioned how it can be difficult to tell when plants are really little, like is it a weed or not. Like I have this problem, too in my backyard. And they actually have, there's a link to a book on their website, *Tallgrass Prairie Center's Guide to Seed and Seedling Identification*, which is actually really great, and I love to take out in my backyard, because that's one of the few places I actually get to see tiny little seedlings because in the field, often I'm not there when things are looking really tiny and little, so anyway, they have a lot of great resources from books to technical guides and field guides, and videos, so highly recommend visiting the site.

Mike: Hey everybody.

Megan: Yeah Mike.

Marissa: Yeah Mike.

Mike: I want you three to take a hike.

Megan: Wow.

(Laughter)

Marissa: You're tired of us already?

Mike: Take a hike.

Megan: I would love to. You know, if we're hiking, you're hiking with us, buddy. And where I want to go today is my favorite place that I visited this past season. And I visited at the end of the season, it's Ottawa Bluffs, which is managed by The Nature Conservancy, and I was really in need of a peaceful moment, and this prairie truly delivered for me, so I was having kind of a tough day, and I have always wanted to hike to the top of the hill, and on the TNC's website, it says that there's an Indian burial mound at the top, and so I've always just been curious and interested in going to the top, and having this experience. And so I hiked to the top, and there was a moment that I had where I was sitting there thinking to myself, I'm not sure where the burial mound is. Am I in the right spot? And I felt like all of a sudden as I just turned to the left, there was this little trail, and it led me out onto kind of a peak of the property, and I just had this very beautiful, quiet, reverent moment out there, and I knew that I had found the site, and it overlooks the river valley, and so you can see for miles and miles we talked about our prairie vista, there's amazing wetlands downslope in private land across the road, and so it was a wonderful experience that I finally got to have, and so that is my favorite prairie pick for the day.

Mike: Mine is in my hometown in Northfield. It's the Arboretum at Carlton College. Yeah, so it's not exactly, you know, it's not a backyard prairie. There are legit prairie reconstructions there, but it's open to the public, and it's, my wife and I walk there a lot, and it feels kind of like it's in my backyard. But yeah, they do lots of really, they're doing interesting work there, they're doing good work, and I recommend it as a place to see

reconstructions and pollinators, and birds for that matter, great birding there. They have a lower and an upper arb hiking trails, and yeah, it's a wonderful place.

Sara: I'm going to take us to Edwards Waterfowl Production Area. It's in Stevens County just a couple miles east of Morris, and this is the headquarters WPA for my office, so I get to go there almost every day. It's a nice, big WPA with all the things WPA have, lots of grassland and wetlands. It's got some really nice remnant prairie, actually, along the hiking trail. But one reason I picked this one today is that we have what we call a pollinator demonstration garden planted around the building, and so if you need some ideas of how different native plant gardens or pollinator gardens can look, we've got a couple of different things. One is that in all of the islands and the parking lot, you know, sort of those barriers that are in parking areas, they, we planted those to just sort of a native prairie mix, and so those have more of that sort of wild prairie messy quote look to them, and they're real fun because they look different every week when we come in and pull in and park next them, there's different things blooming. But then right around the building as well, we've got sort of more of a formal-looking garden with different species, and they've all got labels, little signs marking what species they are, and so it's a good chance to kind of see what some of those might look like when they're fully grown and how they might look next to some other plants, and that is a fun thing to be able to peak at and visit every time I walk into the building.

Marissa: Yeah, that's great. So I took a, I guess, well, in a way a similar theme. So my choice this time was thinking about it's basically the urban woods and prairies initiative that's been happening around the Fargo Moorhead area both on the Moorhead side and the Fargo side. And Audubon Dakotas has been working with the city in many places right along the river where a lot of places have been flooded out over time, the Red River. And so it's a lot of it is now city property, and they've been working to restore these areas as basically little urban pollinator gardens along the river. And so many of them are right along the bike trails and the bike paths that go along the river, and so they're really nice places to go and see like what restorations look like in an urban setting, and there is a lot of wildlife in these areas, including a lot of deer and turkeys and pollinators and, yeah, you name it, birds for sure. So they're great places. They are open to the public because there's bike trails, as I said, through there, they're great places also for just skiing or snowshoeing in the winter, hiking in the summer, so yeah. I take my daughters through there a lot on our bikes. It's a great place to go and see some urban prairie.

Megan: Perfect. Well, as you can already see, we can make this a five-part episode, but we squished it in to one. And next week, we'll be right back here on Prairie Tuesday on the Prairie Pod. We're going to be joined by some very special guests who are going to talk with us about some of the ways our prairie works to help mitigate climate change. Prairies are powerhouses of diversity, and that diversity on the landscape is vitally important to clean area, water, and healthy soils, which are things that we all depend on for survival. We'll learn about all the things that prairie is doing that helps us mitigate climate change impacts, and we know climate change can be a difficult topic, right? But hopefully, this episode will bring you some peace of mind about how the prairie is already making a difference in helping us to adapt. As always, you can find all of the resources for this episode on our website at mndnr.gov/prairiepod. This episode was

produced by the Minnesota Department of Natural Resources South Region under the Minnesota Prairie Conservation Partnership. It was edited by the fabulous Dan Ryder and audio engineered by the equally fantastic Bobby Booz. All right, everybody. Enjoy planting your pocket prairie.

Mike: I'm looking at it right now. It's beautiful. No, it actually needs a lot of work. Part of the fun. That's right.

Marissa: Lots of fun. Yes.

((sounds of birds chirping and wind blowing))