

Benefits of Reduced Summer Mowing

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SPEAKERS

Iowa State University Extension and Outreach, Christa Hartsook, Adam Janke

C Christa Hartsook 00:15

Hello, and welcome to the Small Farms Podcast, a production of the Small Farms Program at Iowa State University Extension and Outreach. Our podcast covers the opportunities and challenges associated with rural life. In this episode, I visit with Adam Janky, Assistant Professor and Extension Wildlife Specialist for Iowa State University Extension and Outreach. Today we are talking about the benefits of reduced summer mowing. I'm Christa Hartsook, Small Farms Program Coordinator and we hope you enjoy the show. Adam, welcome back. It's great to have you on again.

A Adam Janke 00:48

Yes, thanks for having me.

C Christa Hartsook 00:50

So we're talking about something different today, not necessarily a specific wildlife species, we're talking about mowing.

A Adam Janke 00:57

Yeah, we're talking about how we can help wildlife by maybe finding opportunity areas for new wildlife habitat, which is a lot of the focus of the education I try to do.

C Christa Hartsook 01:07

I like that. So you had a study that looked at the economic, and ecological, and aesthetic impacts of managing our laws differently. Can you tell me a little bit more about the study itself?

A

Adam Janke 01:18

Yeah, so the study that we're working on, this is still in peer review, and we're still working on sort of the final say, but that was some economic stuff. And then we're also trying to do some education just about what we know about alternative management practices for areas that are in lawns or turf grass. That's based on lots of different types of studies. Studies here in Iowa, studies, actually, in the UK, studies in the East Coast, I can think of some work out in Boston, and some others. And so, just kind of painting a picture for how animals, and especially insects, like pollinating insects, like native bees, honey bees, and butterflies, take advantage of, or don't take advantage of resources in turf grass or mowed areas. That's kind of what we want to talk about a little bit today. And we can share with you some of those initial findings, what we're finding with the economics and then I'm an ecologist, of course, so I'm really interested in talking about what we know about the plants and the animals.

C

Christa Hartsook 02:19

Perfect. That sounds great. So let's talk a little bit more in depth about each of the three treatments that maybe you had throughout this initial component of the study.

A

Adam Janke 02:28

Yeah, so we are, talking about this as like, basically, let's examine ways that we do manage our mowed areas or turfgrass areas, and then let's examine some alternatives. So the first treatment, essentially, is just typical mowing. And so what are we talking about? I always like to say, I'm not talking about a little league field. I'm not talking about, you know, your back door where you play bags, or you play soccer, football or whatever. I'm talking about big expanses of mowed grass that we mow, basically, because we don't have any better ideas for it. And so take a drive anywhere in Iowa, in city, urban or rural, and you will find these areas, just large contiguous tracts of just continuously mowed grass. And Wildlife Ecologist like me and people involved in doing education on water quality, or carbon sequestration, for climate change, and other things, we're always looking for places where we could have more wildlife habitat, in our rural landscapes and in our urban landscapes. And we look at these big expanses of mowed grass and think, maybe we can do better there, especially if, I always like to say, if you need a regulation size football field in your front yard, fine. But I can't imagine you need two regulation size football fields, and a regulation size football field is one acre. And so I don't know, give me the second, third, maybe fourth, sometimes we see people mowing huge areas in some rural areas or in like, you know, research parks, and industrial parks, and towns, or around grain elevators, or equipment dealers, and all, you know, places in rural communities. We see these really big, large areas that are mowed and we think, Oh, maybe we could do better by soil, water, and wildlife in those areas by thinking about alternatives to annual mowing. So the first treatment is just the mowing, the status quo. We estimated well, I'll talk a little bit about some financial work that we did. And we estimated that you mow those 26 times a year. You know, some people may say "no way, I don't know 26 times a year" and other people probably mow more. We pulled that number from an extension publication that said, in Iowa you're between something like 24 and 30 mowings a year, and that's one scenario. 26 times a year, early spring fertilizer and, you know, pesticide application for grubs or weeds, and then

just the mowing, the time mowing. So that's one treatment. The next treatment is not something that we've actually studied here in Iowa, the biological aspects of, but something that they've studied in other places, and they have a wonderfully catchy title for it, it's called the lazy lawnmower, I don't mean there to be a value judgment associated with it. But there is. So the lazy lawnmower is essentially saying park the mower a little bit more often, instead of mowing 26 times a year, cut that down by a third. That essentially means mowing once every three weeks. And I can talk about some of the research, I mean, the research generally says, as far as like insects are concerned, the less you mow the better. There's one study out there that says there's actually a benefit to bees, if you mow sort of an intermediate amount of time. So rather than like once a month, like twice a month, is actually better for bees. Twice a month. But I don't know that I found that those numbers are particularly compelling. I think the generalization about the less frequently you mow, particularly if it's not weekly, the better off your turf or grass areas are going to be for insects. And then of course, fewer inputs could help too, like if you if you allow broadleaf plants to grow in your yard that have a flower, that's all of a sudden a nectar resource that bees can use, butterflies, or a bunch of other insects. You can also lead up to building up a little bit more plant residue in the ground that could help other insects as well. So that's the lazy lawnmower method that's just like just mow less frequently. Anything you can do to just allow flowering plants to go or maybe allow a little more vegetation to grow up could be better than the frequent mowing treatment. The last treatment that we entertain is something of course, that we've done a lot of research on in Iowa and at Iowa State, and that's all motivated by our interest in helping the Monarch Butterfly Populations. And that is to convert some of these areas into pollinator habitats. And what we mean when we say pollinator habitat is establishing prairie that's rich in flowering plants that are available throughout the growing season. And so a typical pollinator planting would have something like one to one grass seeds to wildflower seeds per unit area at the time of establishment, and sometimes even more like something like one to three grass seeds to wildflower seeds. And so this is something where we're trying to get a lot of different native flowering prairie plants to establish. And we want to pay attention when we put those prairie plants out there, we want to pay attention to making sure that we have species like Golden Alexander, for example, that blooms this time of year in the spring in May, and we also have species like Golden Rods that bloom late in the fall like in August and September. And then everything in between, you always want to flowering plants on the ground. That's what makes it good pollinator planting. And so that scenario is, forget about it. Park the mower, sell the mower, we don't care what you do with the mower, but no actually we need the mower, we should talk about that, we need the mower to establish the pollinator habitat. We probably shouldn't sell it, but maybe you can share one with your neighbor or something like that. So it's convert turf grass into pollinator habitat. So completely change the land use. And in that, the benefits for that are just tremendous. One, it's beautiful. I mean, any place that we can have flowering plants, going from May to September, it's just going to be an aesthetically pleasing landscape. And so, pollinator habitat, prairie habitat is beautiful. So we improve the aesthetics of our property one and two, we know lots of wildlife taking advantage of this this. Wildlife of all shapes and sizes, stuff that lives in the ground, stuff that lives above the ground, stuff that nests in the vegetation, and then of course, insects. So it'd be really good for bees, and it would be really good for Monarchs, especially if that flower mix includes milkweeds. 17 different species of milkweeds native to Iowa, we have lots of options. The easy ones are Common Milkweed, Swamp Milkweed, Rural Milkweed and Butterfly Milkweed. They're commercially available, they grow well in a lot of our soils depending on, you know, the site conditions, and if you have milkweeds the Monarch will lay their eggs on the milkweeds and their young will forage on the milkweeds until they emerge as an adult I fly off to that mountainside and Mexico every fall. So we can do a lot of good for the Monarch in a pollinator planting. And then prairie plants have deep roots that cranks carbon down into the soil and builds organic matter. Those deep roots

also hold the soil, so there's less erosion, that improves water quality. They also can help us with flood control, because all of that prairie plant surface area creates a lot of evaporative surfaces. So less water just leaves the site, just more water is just kept right there and evaporated back into the air used by the plants. Prairie roots are like sponges that absorb water and prevent downstream flow. And then the water that does go downstream has less nitrogen in it, because the prairie plants are using the nitrogen and keeping it where they can take advantage. So benefits abound in pollinator habitat.

C Christa Hartsook 10:52
Sure.

A Adam Janke 10:53
And so what we wanted to evaluate is like, okay, well, we can clearly make the ecological case for either mowing less frequently, or completely converting to pollinator habitat. On the big parks, again, we're not talking, I'm not saying plant pollinator habitat outside your front door, I'm saying just plant it, you know, on the farm on the barn lot. So we can clearly make the ecological case. We can also I think, make the aesthetic case. I mean, I recognize like people have different ideas of what is aesthetically pleasing. But to me, a prairie is as aesthetically pleasing as it gets. And so, you know, and so I think we can make an aesthetic argument, at least to some people. And so then the question was, is like, well, what about the economics of all this? Like, what does it cost to mow our grass 26 times a year? What's it cost to establish pollinator habitat? I mean, there's it's technically challenging, and it requires, you know, the seed prices can be really expensive. And so what's the cost? So that was the next question. And so the economics of converting to pollinator habitat, when we compared the three, the mowing it yourself 26 times a year, herbicide, fertilizer applications, compare that to just doing all that stuff, but just a third less often, and then compared to pollinator habitat, we find that there's also an economic case to be made. And the economic case has to be made over a long, like a 10 year management period.

C Christa Hartsook 12:33
Okay.

A Adam Janke 12:35
In the first year, it's going to be expensive to establish pollinator habitat, because the seed is anywhere from \$100-200 per acre, gotta mow it in the first year, probably three times, you've got to plant it, most of the time you have to spray and get control over the weeds and other things. And so it's not an easy thing to do right away, but if you spread, all those expenses are up front, the first couple of years are all your expenses in pollinator habitat. If you spread those expenses out over 10 years, and you do some fancy stuff that economists do that ecologists don't understand, ecologist like me don't understand, either some stuff with present value and, I don't know, economists, you know..

C Christa Hartsook 13:17
Economists stuff, yep.

A Adam Janke 13:18
You find that a pollinator habitat can be half or even, even less than half, like 80%, potentially, as expensive as maintaining a lawn in turf grass where you have those annual expenses year over year, equipment depreciation, time, and inputs, and all these things every single year, never changing. The pollinator habitat that, after three years is established, and only requires a little bit of periodic management, can make a real compelling economic argument, in addition to all those economic arguments that I talked about.

C Christa Hartsook 13:57
Okay, so let's talk about each of these a little bit more in depth, Adam. So if we were to look at, you know, the traditional, we're gonna mow the lawn, we're gonna mow everything, we're maintaining that turf grass as it is, what did you kind of estimate that cost to be?

A Adam Janke 14:13
So we evaluated a couple of different scenarios. One of them was to do it all by yourself. That means you have to buy the tractor, you buy the chemicals, you buy the fertilizer, and then you put it all on, and you do the 26 months. In those scenarios, economists like to value people's time, and so this analysis, these numbers that I'll give you value, the person's time. And so, there's debate as to whether or not that's appropriate because I think people enjoy mowing, and so in that case, like there's almost like a willingness to pay actually like you're willing to do it because it's part of recreation. But anyway, if we say you value your time, and you maintain your own turf grass, our estimate is over a 10 year period, it cost about \$6,000, to have a lawn in turf grass that you just manage 26 mowings. We also evaluated a scenario, it's basically \$6,000, there was a range, there was a wide range. We evaluated a scenario where you contract it.

C Christa Hartsook 15:19
Okay.

A Adam Janke 15:19
The low end of our range estimate was \$2,600, over the 10 years in the high end was \$8,600. Average was right around \$6000 again. So still, we're in that \$5,000-6,000 over a 10 year period to keep, oh, I should say, one acre of grass, it's all priced at one acre. So, we in the economic analysis didn't do the evaluation of the lazy lawnmower thing. What we actually did, I just pulled an estimate, there was an estimate from Canada, that compared basically the

municipal budget. And they evaluated a scenario where a lazy lawnmower against just typical, whatever the park system was doing. And they reported in that study 36% cost savings. So we could do the math, whatever, here, let me do the math, we're gonna be doing some live math here.

C

Christa Hartsook 15:45

We can do that!

A

Adam Janke 15:56

What's -0.36 times 6000? About \$3,800, over the 10 years. And that's that net present value stuff. That's the stuff that the economist kind of like that accounts for the fact that today's dollars are worth a different amount in 10 years, eight years, nine years, 10 years down the road, you know, economists account for all that stuff to try to make for an easier one to one comparison of a number of different management options. And that is accounting for that. So we're at about \$6,000, to just put it in turf, and keep it that way and just mow it the white status quo. We're at about \$3,800 to do that for one acre with the lazy lawnmower approach, again, going off of another study, a literature estimate of 36% cost saving. So the last scenario is a pollinator habitat. And I mentioned pollinator habitat, we have these upfront expenses. But again, we spread that over 10 years. So we spend that money right now. But we want to account for what that investment now would mean for cost savings, 10 years into the future in our management, because although we have to buy the seed, we have to plant the seed, control the weeds on a site, mow it, and then five years or so we need to do some prescribed fire and some other management on pollinator habitat, we don't really have anything else to do on the site year to year. So we save a lot and labor. We save a lot of time, equipment depreciation, and so our estimates for total present value costs for a one acre holiday or habitat is over a 10 year period \$1,000. So it's, and again, those estimates range from \$485 to \$1,500. It depends on your seed mix depends on your site conditions and how much work you have to put into it. But we estimate over that 10 year period, and again, the total present value cost that accounts for how the value of \$1 changes over that period, we put it in about \$1,000. So, it's pretty serious economic incentive to have pollinator habitat.

C

Christa Hartsook 18:33

Significant savings for folks out there to put that in!

A

Adam Janke 18:36

Yeah. So and that actually ignores potential costs share that could be available. It kind of depends on how big of a property you're looking at, but if you have multiple acres, that you can be potentially putting into pollinator habitat, there are definitely programs through the Iowa Department of Natural Resources like the Prairie Partner Program, or the NRCS, like the Environmental Quality Incentives Program, or EQIP, that could cost share the establishment of some of these pollinator habitat patches on your farm and bring that per acre cost value down even further.

C

Christa Hartsook 19:11

Okay. Adam, you're kind of my wildlife guy. My go to there. So I'm assuming in addition to our pollinator friends, this pollinator habitat could be utilized for other forms of wildlife as well.

A

Adam Janke 19:26

Yeah, definitely. It could, and you know, like, cool stuff like grassland breeding birds and, you know, deer will have their young out in grassland environments. We could have declining species of mammals in Iowa use pollinator habitat as well. I mean, this, it's a really, it's a win win opportunity in terms of the wildlife benefits. I mean, there's no comparing the other two treatments in terms of potential for wildlife. Now, one question, and I don't know, maybe Christa, this is where you were gonna go with the question, and I'll just take it there is well, what if we don't want those wildlife?

C

Christa Hartsook 20:03

That was gonna be my follow up!

A

Adam Janke 20:04

Well, good. Okay. So it's a good question. To a person like me that's like, what? Why wouldn't everybody want all the wildlife? So first of all, we're not talking about attracting, like conflict prone species of wildlife. Like, you're not gonna all of a sudden have more raccoons getting into the barn because we have a pollinator planting. I think that's rather improbable. But there may be some questions about like, well, what about biosecurity? Like I do have, you know, like a sale, livestock, swine operation, say, I don't want to go planting a bunch of tall prairie around a swine operation and potentially increase the risk of small mammals come in and get into the feed or worse, you know, bring something into the barn that affects the pigs. That's a great concern to have those biosecurity concerns. And of course, we should be thinking about that. And so we're thinking on this. And we've talked to some experts, and we've also actually just talked to some pork producers that have done this, converted some land to pollinator habitat. And we think you just need to maintain some mowed areas around the barn, probably like 10-12 feet, something like that. What we know is that the, particularly we're thinking small mammals here, the small mammals that want to be in a barn don't really want to be in a prairie, and the small mammals that want to be in a prairie don't really want to be in the barn. The exception would be like during the wintertime and stuff like that. But generally, we don't think that this is going to increase issues with more wildlife coming into human dwellings, because those wildlife that tend to come into the human dwellings are there because of the dwellings themselves. The birds and things that would use a pollinator habitat, they're going to have no interest in going into because they like pollinator, you know, they like grasses and wildflowers and things and don't really care for a barn and European Starlings and House Sparrows, and like, they're going to always be there because there's a barn and they're not really going to care about the pollinator habitat, either. So it's a good concern to have, we do

suggest that people think about you know, biosecurity, particularly around livestock operation. And we think just some mowing, you know, as you would do anyway, adjacent to the buildings is going to be an important tool to fight against potential issues there.

C Christa Hartsook 22:19

That makes sense. So Adam, I guess my last real question or concern would be that, you know, this approach kind of goes a little bit against what our cultural norm is, right? Everybody is kind of conditioned, I guess, to go out there and mow their lawn and have it look real nice and neat and trim on a continual basis. What do you say to kind of combat that approach?

A Adam Janke 22:42

Yeah. It's a great question. I mean, I don't know, I hope that you would have called me on it, if any of my logic was wrong.

C Christa Hartsook 22:50

I would have, yeah! Yeah, I've made the economic argument, ecological argument, I think I can make an aesthetic argument. But here we are, you know, obviously, the prevailing practices to mow a lot, and what's up with that? It's a challenge, I think. The values surrounding the American lawn are very deeply entrenched. We do have a very, a rather narrow definition of what meets you know, an aesthetically clean farm or what meets, you know, expectations for the way that our farm should look, that we kind of have to work towards getting around that. Here's some thoughts on this. First of all, social scientists study this stuff. It's fascinating. There's a whole body of literature out there, and we wrote about this in the paper, actually. There's a whole body of work out there that's like, understanding why people are so attached to this one ideal of like a very homogenous stand of short grass. Like what's up with that? Instead of, you know, a prairie? And the findings are that one of the things that can help are what they call cues to care. And that is to say, like, this may look like weeds to you, but let me tell you why it's not weeds. Let me help you understand or help you care about what I'm doing on my land. Mhmm.

A Adam Janke 23:08

And there, it would be like sharing stories about well, this is my pollinator planting. This is where I grow Monarchs, you know, the back 40s, where I grow corn and soybeans, and that barn over there is where I grow hogs, and in this patch of pollinator habitat. That's where I grow my Monarchs. I think that's one thing, you know, kind of the cues to care. Help people understand why it is that a different management practice is good for the land and consistent with the landowners motivations. So that's one strategy. Another strategy is sort of a social contagion of adoption of anything that's different. Anything that's different. And we definitely see this with conservation practices. There's people out there that are like, "oh, cover crops? That sounds awesome! I'm there, like, give me the seed and tell me you know, I'll start tinkering with this and figure it out." We call those early adopters. And then they take some risks, and they start to figure stuff out. And they start to show their neighbors that it's working

for them. And then we get the next cohort of people that are like, "okay, well, if it worked for them, then it'll work for me." And then that's called the diffusion of innovation model. And we know that through time will go through different sequences of this having different levels of acceptance, until finally it becomes the norm. And everybody's like, "hey, what's up with Joe down there? He's mowing, like three acres of grass every week. Why don't you plant that stuff in a pollinator habitat?" So that's what we're trying to get to. And there's a really neat research on this kind of stuff. In Michigan, there was a study that was like, in neighborhoods where people were more inclined to adopt like a lazy lawn mower or a native landscaping approach, the neighbors were more accepting, like, the more prevalent it was in the neighborhood, the more accepting the neighbors were. And that's been repeated, I know, at least in Boston, there was another study in urban areas. And we know this is definitely true of soil and water conservation practices in the Corn Belt. So we need to get some early adopters out there, they need to be telling their stories about why it is that these things are cool parts of their farm and enriching their experience. And my last point is that this is the way to have a clean farm. You know, I've worked on farms all across the Corn Belt. I've worked in Ohio, I've worked I grew up in Indiana and worked there, I worked in Wisconsin, worked in South Dakota. And now I work in Iowa. I've been to every corner of the Corn Belt. I've met people and, I get it, right? Like, I've worked in these landscapes, and people like to have a clean farm. But I worry with the way we talk about a clean farm is one sort of that is aesthetically clean in a very narrow definition of aesthetics. And what I think is our inclination to have a clean farm is a really good one, like we should have clean farms. But we should define the cleanliness of a farm by how right that land is by soil, by water, by addressing big societal issues like climate change by embracing the local biological diversity of having like really cool native plants that are just found, say in Iowa, and hosting really cool species of insects, like our 200 plus species of native bees, and all have our, you know, Monarchs and other butterflies and birds. Like that's a clean farm, a farm that has clean water running off of it, healthy soils, sequestering carbon, like that's a clean farm. And so I think, I love this inclination to have a clean farm. Like we're right to have that we want to have a clean farm. But we need to think about what we mean, when we say clean farm, and I think having pollinator habitat on the farm is one of many ways that we can work to this ideal of having a farm that is really clean. So that's my sort of thinking on that. We have places, we need to grow in that arena, but I think we can get there.

C Christa Hartsook 28:02

I think so. I think so I appreciate that argument to Adam, it makes the case, I think, and sets the stage for what we want to do.

A Adam Janke 28:09

Yeah, and I think it's awesome! I mean, this is just gonna make, like to have all this different stuff on the farms, it's gonna make it even more exciting and interesting to live there and have the kids playing in pollinator habitat, and everything else, and learning how to manage prairie. And one other thing I wanted to mention was that we do have those early adopters out there. So we can drive you to farms all across Iowa that are putting pollinator habitat in areas where they used to mow, putting it in barn, lots of places where they just drive equipment a couple of times a year, just drive the equipment over the pollinator habitat. That's fine. Putting it around

livestock and climates and other places where, you know, we have these early adopters, and we just need to tell their stories, learn from their experiences, and their skill sets, and take this out on a large scale and really have some big impacts on things like Monarchs and others.

C Christa Hartsook 28:59

Yeah, important, very important. Adam, for looking for more information. Where can we go?

A Adam Janke 29:07

Yeah, good question. So establishing pollinator habitat has challenges. It's not like, you know, it will require some technical expertise. And so we want to point you to some resources. A couple places you can find them, Iowa State Extension Store has some nice articles from the Monarch Conservation Consortium. They have one about a seed mix for pollinator habitat. They also have one about establishing pollinator habitat on riparian buffers, that will translate really well to the barn lot as well. The other thing is the Prairie Strips Team. That's a project here at Iowa State that did a bunch of research on putting prairie out in the row crop landscapes. In there again, the practices are the same in terms of the process for establishing and maintaining pollinator habitat and prairie strips. And so the prairie strips team has a bunch of publications on that website, Extinction Store website as well, that can help you understand this process. The last thing if you go to our website, which is naturalresources.extension.iastate.edu. You can find an application there called Wildlife Contacts, and then click on Wildlife Habitat Consultation. And then select your county and you'll find contact information for professional Wildlife Biologists with the Iowa Department of Natural Resources, the Conservation Districts of Iowa, Pheasants Forever, Xerces Society and some others that have like sort of regional responsibilities for helping private landowners establish wildlife habitat on their land, and some of those people can help with programs, like cost share type stuff, like we mentioned earlier, but all of those people are experts in establishing and maintaining prairie and pollinator habitats. And they would be a really good local resource to pick up the phone and just talk through the process of establishing a pollinator habitat in your soon to be former yard.

C Christa Hartsook 30:59

I like it. I like it a lot. Adam, anything else that we need to cover today?

A Adam Janke 31:04

Well, I don't know. I think you got it all out of me this time! This is one that I get pretty excited about! Start small, you know, I always say this, you know, we don't need to solve all these things. And if you want to just experiment with pollinator habitat, just get enough seed to do a small piece and and see what happens and see if you like it. If you like the look and like the management and all that stuff. I think you're gonna find that you do like it and then you can grow from there. So don't let this stuff be intimidated. Just kind of get started and get going. And you know, we talked about at the very beginning, mowing is recreation like I definitely think people you know, enjoy mowing and that's great. Wait until you try prairie management is recreation you're never going to want to go back to mowing prairie recreation management is

way more fun. You identify plants, you find problem spots, you find opportunity areas, you find new plants that you didn't know you had and plan your burns and plan your management, and put up birdhouses and stuff like that prairie management can be really good recreation as well.

C Christa Hartsook 32:05

I can imagine that it would also be incredibly rewarding to see that increased diversity and increased wildlife on your property.

A Adam Janke 32:13

Right. Yeah, that's that's what I think.

C Christa Hartsook 32:16

Very cool. Adam, thanks for being on as always.

A Adam Janke 32:19

Thank you for having me. Have a great day!

C Christa Hartsook 32:21

You too!

I Iowa State University Extension and Outreach 32:22

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