



## Prairie Pod Podcast Transcript

### Episode 8: Pheasants, Feathers, and Guns

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#### Transcript:

((sounds of birds chirping and wind blowing))

Megan: Hey welcome to the Prairie Pod! This is Megan Benage, an Ecologist with the DNR, and I'm sitting here with my co-host Jessica Petersen. ((Jessica says name)) Jess what do you do for the DNR?

Jess: I am the Prairie Habitat Research Scientist.

Megan: A super smart one too. We have a packed room here today. We have a whole bunch of people huddled around our fancy ((sarcasm)) recording studio. We're in the Madelia recording studio today, also known as the Madelia library.

Jess: Taking it on the road.

Megan: Taking it on the road! We're sitting here with some talented and awesome guest speakers. Who do we have here today?

Lindsey: I'm Lindsey Messinger, I'm a Wildlife Research Biologist with the Farmland Wildlife and Populations Research Group.

Mike: Mike Worland, I'm a Nongame Wildlife Biologist with the DNR based out of Hutchinson.

Nicole: I'm Nicole Davros, Group Leader of the Farmland Wildlife and Populations Research Group. Formerly Upland Game Project Leader for the same group.

Megan: We have all these talented folks in here with us today because it's the last podcast episode. All good things have to come to an end. I know it's upsetting, but true. This is our last one so we brought in the big guns. We brought in some of our favorite scientists. Mike is laughing at me because he's not sure if he's a big gun, but he is!

Mike: I know you're sincere.

Megan: Yeah it's legit. Today's podcast topic, what we're going to talk about today... This is my all-time favorite episode title, which kind of sounds like I'm giving myself a compliment because I came up with these, but Jess stamped an approval on these. It's called pheasants, feathers, and guns. We already had some sass earlier where I was notified by email that pheasants also have feathers... so that's good. We do know that.

((Laughs)) The alliteration, I couldn't resist it. So today we're going to talk a little bit about pheasants. We're going to talk a little bit about fall hunting season. Then the "feathers" part are the grassland birds. Yeah... we already talked about what the guns part was...

Jess: A little nod to Jared Diamond; guns, germs and steel

Mike: That's what she meant right?

Megan: Yup, obviously. Um-hum yup, that's definitely what I meant. Jess is just right in my head. I was like what are we talking about? So we're just going to jump...

Jess: So you didn't even know?

Megan: No! I didn't even know!

Jess: You made this amazing connection.

Megan: I made this amazing connection... What is it? What is this guns, germs, and steel? What is it about?

Jess: It's a book. It's about the fate of human societies.

Mike: Kind of important.

Megan: Is it fiction or is it non-fiction?

Jess: It's non-fiction.

Megan: Oh, I don't read non-fiction. ((Laughs)) I'm a scientist, I don't read non-fiction off the clock! I only like to watch Disney movies off the clock, daily life is a struggle. Okay!! Now we know way more information about my personal life than we needed to know. I should ask Jess some questions about hers...

Jess: Nope!

Megan: Nope, alright. We're jumping right in for our last episode. We're going to start with Nicole Davros and we're going to talk a little bit about the pheasant research that's going on in the DNR. We're going to get all the details from her. So Nicole, you told us who you are and your job title, but tell us a little bit about the work you do as group leader.

Nicole. As group leader, my job is to lead the group and help coordinate the activities of our entire group, which is both feathers and fur in our office. On the feather side, we cover both pheasants and turkeys. On the fur side, we cover deer and elk out of our office. My job as group leader is to help manage the workloads of our staff scientists and biologists, help get those research projects developed and up through the chain for approval and funding. Then a lot of what I do is I try to run a lot of interference on the administrative tasks so that they can just focus on science and do sciencing. As the project leader, previous to this I developed two research projects that were related to pheasants. The first is a pheasant habitat selection and demography project looking at pheasant survival rates in various patches of habitat, trying to look at how diversity

impacts pheasant survival and reproduction. The other research project is looking at the potential for insecticide drift to impact our grassland wildlife, including pheasants.

Megan: We talked about diversity... Back up for a second so I make sure I understand. What kind of diversity are you talking about?

Nicole: The diversity we're looking at for that project is trying to springboard off of a previous project our manager spent a lot of time and money trying to get more plant diversity into our prairie reconstructions. Some of the techniques they've used have good results, sometimes they don't have great results. Part of that is because when they try to plant into [existing] warm season grass mixtures, it is pretty tough to get forbs to establish. We had a project that when I came onboard was kind of wrapping up, it didn't have great results. I want to take a step back from the project and look at how much diversity really matters for pheasants. Being one of the many species that we try to manage for and a group that a lot of people are interested in--making sure there are a lot of pheasants on the landscape. We wanted to focus on when we do a reconstruction, how many forbs do we need in that seeding mixture and do we see differences in survival rates? Does putting more money into a highly diverse forb mix, which we know is going to be good for pollinators and some of the other critters out there, do we really see better pheasant recruitment and survival when we do that? It's a very pheasant centric project, but one that a lot of people are interested in.

Megan: I like it.

Jess: Tell me more about pheasant biology and maybe what the mechanisms are that you're thinking about. How increasing forbs in our plantings might help pheasants?

Nicole: So pheasants, for anyone who's not aware, are not native to Minnesota and to the U.S. They were established and you could probably argue now that they're a naturalized species. They're here to stay, but being non-native they don't have some of the same adaptations that our native grouse do. In Minnesota they're reaching the upper limits of their range, in terms of winter survival, they don't have the feathered tarsi like native grouse would have.

Megan: What's the tarsi?

Nicole: Tarsi is basically a feathered leg/foot part.

Megan: I like it, it's so fancy! Like have you seen my tarsi? Look at that! ((Laughs))

Nicole: Next time you see a picture of something like an owl or a grouse, look at their legs and they have feathering that extends farther down. Pheasants don't have that so they're more prone to getting exposed to the cold. They're also non-migratory unlike prairie chickens that are short distance migrants, they kind of have different winter and summer habitat use. Pheasants basically live in the same half mile or square mile, if they're really adventurous, for their entire life, which is pretty short. It could be a year, year and a half up to three years. They don't really move very far in their life. They're non-migratory. Where they're born is pretty much where they're going to be raised and stay to nest. They need everything that they need to survive in that little area. That includes both summer habitat, fall habitat, winter habitat, and spring habitat. You can

kind of think about it the breeding season, which would be spring and summer and then the non-breeding season which would be fall and winter. Everything they need, needs to be there [in that patch]. Pheasants are pretty basic, they don't go far and they need everything they need right there.

Megan: So they're a basic bird?

Nicole: Basic bird. I guess in terms of other biology, being a gamebird, they're pretty prolific if you give them the right conditions. They lay a lot of eggs, they have kind of a live fast, die young strategy like I said. They're lucky if they live three years. They actually don't put all their eggs in one basket, they actually do parasitize other birds, other pheasants and some other species. For the most part they put a lot of eggs in one basket when they do breed, so large clutch size (try to produce a lot of kids) because they don't know if they'll make it to the next year to breed.

Megan: Talk to us a little bit more, you mentioned that you have these two research projects, main ones, I'm sure that there are others going on. Talk to us a little bit about how you assess the things that you're trying to assess, like how do you look at what clutch of eggs they have, whether or not pheasants are surviving from year to year, like how do you actually do that work? What're you doing and how many pictures of their non-feathered tarsi do you have?

Nicole: A few. A few have missing toes too, do you want to see those? ((laughs))

Megan: It's always a good time on the podcast. ((laughs)) I can't answer that question.

Nicole: They get into fights and lose a few toes, that's all. Pheasants are really hard to detect and monitor, that is something that is really important to keep in mind. When I developed the project, pretty much off the bat I knew that if I wanted to find some nests and look at reproduction that we probably had to radio tag some birds. Our hens are radio collared, it's old fashioned technology, and it's the old VHF radio collars. A crew of technicians go out and track them down using antennas. We basically, through the use of radio telemetry, know where our birds are and then monitor them that way.

Megan: You have to be on site though right? With the type of radio telemetry you're using? Physically out there, you don't know where they are when you're just sitting in the office?

Nicole: Correct. I don't know if Lindsey wants to contribute some thoughts there. In Nebraska they actually tried to use some of the GPS technology and they had a really rough go of it. My understanding is that the technology just isn't there yet for pheasants.

Lindsey: Yeah, it's not so much the technology really, it's the battery size mostly. Batteries are heavy and when you're putting things on animals you want to stay pretty light. The general rule of thumb is that it should be less than 5% of their body weight and 5% is really the high edge. You should try to stay around 3% of their body weight for something that you put on an animal. For a pheasant, if you wanted to monitor something for an entire year you would have to have a battery that last the entire year to collect GPS points. Pheasants are just on the cusp of being heavy enough to support

that. GPS stuff hasn't worked yet. We can't be arm-chair, office, 'computer monitors' quite like the deer crew. ((Laughs))

Mike: Darn, you still have to go in the field.

Lindsey: That's right!

Megan: Oh... we have to be outside! ((Laughs))

Nicole: Our deer people just get to sit back and download the data from their chairs.

Megan: Oh the deer people... There's a little bit of a rivalry going on in the DNR between the game species. ((Laughs))

Nicole: We have fun with it. On prairie chickens they've been able to use solar powered GPS transmitters and for pheasants they're just a little bit thicker grass, taller grass, and when they sit on their nests they sit for a very long period of time. They maybe take one or two breaks during the day, it's called a recess.

Mike: They call their break a recess?

Nicole: They call their break a recess. They have to go take recess.

Megan: How many games of tag do they play during their recess?

Nicole: It is all about staying alive. Incubation is really energetically costly. They need to get out there and feed and get back on those eggs. The solar powered GPS transmitters in Nebraska did not have enough time to recharge. When they were in the grass they were searching for a signal that basically died right away. The technology just isn't there yet. Going back to your original question, we use old fashioned VHF radio telemetry to track our birds and get some of the vital rate information that we have.

Jess: So you're just wrapping this up, this main project that you have, what are some of the interesting things that you are starting to find?

Nicole: That's what Lindsey and I are working on hard over the next couple of months. So far the little bit of data that we've been able to dig into is showing a pattern that hens aren't necessarily selecting nest sites. We're looking at several different pieces of information. The first part that we looked at was nesting information, nest site selection and nest site survival. The data is showing so far that hens aren't necessarily selecting nest sites with more forb cover, but when they do they are more likely to be successful. That right there shows that diversity might matter. Having more forbs from a pheasant nesting perspective might mean that your nest is more likely to be successful, not be detected by predators, and that you're more likely to hatch those chicks out.

Megan: Does it also mean...? I know you guys haven't studied this exactly, but does it also mean when you have little bitty fluffy pheasants out there they have to eat so if there're forbs on the landscape then usually that means that there are insects that they can eat. Is there a link there? How is that working? Or do we not know?

Nicole: That is the next piece of the data that we're going to break into. So we don't have any results for that yet, but what I would throw out as a caveat, we always think

food is a limiting factor. I know we're dealing with a gamebird who grows pretty quickly and you certainly can have starvation especially if it is interacting with something like weather, if you have a severe storm and it rains for three days, those chicks need to be kept warm especially when they're pretty young by the hen so they're not getting out to feed. What's just as important as having enough food to eat is being able to catch that food. That habitat structure and maybe that diversity leads to a structure that allows those chicks to run and catch food. It does no good to have a bunch of caterpillars to feed on if you can't run and catch them. Caterpillars are probably a bad example, caterpillars they should be able to catch. ((Laughter))

Lindsey: You just picked the sloth of insects ((laughs))

Megan: I wasn't going to flag you on it but I was thinking, "Man those are some real slow pheasant chicks if they can't get a caterpillar!"

Jess: Grasshoppers. Beetles.

Nicole: Grasshoppers. You not only need to have some really tasty grasshoppers, but you need to be able to run and catch them. That's where things like management actions like prescribed burns, or grazing, or haying could be really helpful because it's going to reduce that litter layer and help them be able to run and catch those things. It's one thing to have enough food, it's another thing to actually be able to catch the food.

Megan: Sorry, I got so into what you were saying that I forgot that I was supposed to ask you a question. Talk to me a little bit about what you think the future holds for pheasants in Minnesota. I want to elaborate on this a little bit. We had a pheasant summit a while back when Governor Dayton called a pheasant summit and we're concerned. We're concerned about what pheasant hunting is going to look like in Minnesota as we keep losing grassland and things like this are happening and we're losing some habitat. We want to know what we can do so we can keep having these hunter experiences so that we can keep grass on the landscape so that we can keep this part of Minnesota with all the opportunities that we're able to experience here. I mean I love hunting. I'm terrible at pheasant hunting but I do enjoy it, especially with Lindsey. If I go with Lindsey, I know that both of us are going to miss and so it makes me feel better from the onset. ((Laughter))

Lindsey: I'm only missing because my pants are stuck on the barbed-wire, it always happens to me. ((Laughs))

Megan: There's just less pressure and more laughter and I like it because I'm always the person that walks out and the pheasant flushes in front of me and I'm still busy going, "Son-of-a-biscuit!" cause it's so terrifying. I want to make sure that people can have those son-of-a-biscuit moments in Minnesota. Tell me a little bit, what're you thinking? What does the future holds for pheasants?

Nicole: I think a lot of people have those son-of-a-biscuit moments. If I can generalize, we always talk about two things that are important for pheasants, habitat and weather. We can't really do anything to control weather so we need habitat to buffer everything else that happens to our population. Habitat really is key. For our current research project we're not even focusing on like landscape stuff necessarily because we know

that having grass on the landscape matters. That work has already been done. Pheasants in an agriculturally dominated state like Minnesota, that's conservation reserve program (CRP). I think in a state like Minnesota the future of pheasants really is really tied to what happens on our private lands and conservation reserve program, and other farm bill programs as well as finding win-win solutions to work with producers.

Jess: Well thanks Nicole that was really helpful. I think we're going to switch gears here a little bit and talk about roadside surveys. Lindsey tell us a little about the roadside survey, every August the DNR conducts this survey and what is it? How is it done?

Lindsey: So the August roadside surveys are actually kind of a cool dataset that we have. I think one of the coolest things about them is that we've been doing it since 1955. It's a survey that we do the first two weeks of August and we do them every year. It is primarily done in the farmland zone of Minnesota. Our wildlife managers and DNR law enforcement staff are the ones who are actually the boots on the ground data collectors this. So what it is it they wake up and go out relatively early in the morning. They'll drive a 25 mile route, the routes we've tried to remain as consistent over time as possible. That's important for comparing data as time goes. We've had to adjust some of these routes to keep them more out in the country. We try to get them off pavement. As things have become a little bit more organized, we've tried to adjust them a little and drop a few routes entirely. They'll drive the 25 mile route and record sightings of wildlife that we're interested in. In the context here of course they're recording pheasants that they see out near the road. We do have other critters on the survey too though. We have things like doves, cottontail rabbits, jackrabbits, sandhill cranes, partridge, and deer too. So yeah, they just drive along and as they see things they'll stop and record the segment of the route where they found it, what they saw, and how many.

Megan: They're just alive things? Nothing that's dead?

Lindsey: Yeah, we don't record roadkill.

Megan: Right... because I could have been winning at this survey if I did it.

Lindsey: This is not a roadkill survey, these are living things.

Megan: Just checking.

Nicole: We want to know who is still in the population. Not who's been taken out of it.

Lindsey: Okay, right right.

Megan: Good to know. So how do you compile the data and what have the results been showing?

Lindsey: So like I said, there's a lot of routes, last year there was 171 routes. We'll get all the paper datasheets from the staff, we'll enter them into our database. Then we have certain statistics that will run those, just kind of summarize data within different zones. They work to give us an index of what the population is. Then we'll compare our number from a certain year of running the routes to shorter and long-term averages, like what have they been doing over the last five years versus ten years versus the entire life of the survey. That gives us an idea roughly of trends in populations. It is not saying

how many pheasants we have out there, it's just saying what the population trend has been over time.

Jess: So Lindsey, you talked a little bit about trends over time, can you expand on that a little bit more and talk about how pheasant populations have changed through time since this survey route has been happening?

Lindsey: I guess when I say "changed through time" a lot of that has to do with what has happened to our habitat over time. If you think back to the mid 1950's when this survey route started, we had more diversified farming practices. You can think of that as smaller fields, more field edges, we had pasture out there, we had small grains, we just had a lot more diversity in the farming and ranching communities. Our pheasant populations really did well with that type of landscape. Then over time as we moved into the 'feed the world' programs and mindsets, our field sizes got bigger. We lost a lot of that diversity in our farm plantings and our pheasant populations responded to that as well. The trend for populations went down. In the mid-to-late 80's, we had the CRP program initiated through the farm bill. It took a few years between when that program was given funding to when we actually had habitat on the ground that pheasants could respond to. Since the mid 80's all the way up to 2007 when we had our peak CRP, we really saw increases in pheasant abundance when we got more grass on the landscape. Since 2007, we've been losing CRP acres and we've seen our pheasant indexes go down along with that trend as well. That's how the populations have changed over time.

Megan: That's kind of a sad story. We're just going down, I don't like it!

Lindsey: We can do something about it.

Megan: It's a happy story too because we have the ability to have more CRP acres and so it kind of goes back to what Nicole was saying earlier that what we do on public lands and private lands is really going to matter in terms of the future of pheasants in Minnesota. See what I did there? Future of pheasants, it's not my first rodeo. ((laughs)) Alright, speaking of alliteration, we're just going to switch gears here and we're going to jump right into the feathers section of the podcast. Mike, you've been awfully quiet. It's weird to me when you're this quiet in a room. Do you feel outnumbered?

Mike: Absolutely, I'm intimidated. ((laughs))

Megan: A bunch of strong female scientists up in here with you.

Mike: I like it...

Megan: Okay.

Mike: It is intimidating, that's absolutely true.

Megan: Good, it should. ((laughs))

Nicole: I just want to point out that you did it again, you said we're going to switch into the feathers portion of the podcast...

Megan: I know, I did it again.



Mike: Can pheasants fly, really?

Jess: Not well. I hit one with a car.

Lindsey: They can fly incredibly well. They can just also run really well as well.

Nicole: They just don't want to fly.

Megan: I mean what I really think I meant was that I was already channeling what Nicole said about their lack of feathered legs and so they're just not as feathered tarsi as other things...

Mike: You didn't even know that!

Megan: I didn't know until she said it, but I'm going to use it right now. Let's talk about some things with feathers on their tarsi and otherwise. Mike, your specialty, you're a non-game specialist for the DNR, and your specialty is grassland birds. Anybody who knows Mike, you've seen him on the prairie, binoculars in hand, don't worry he's not looking at you he's looking at the bird behind you.

Mike: I might be, I might be...

Megan: Way to make it weird ((laughs)). So, tell me a little bit, what are grassland birds?

Mike: No reason to make it complicated, grassland birds need grass for some part of their life cycle. Here in North America, it usually means that they breed or nest in grass. Bear in mind if you're walking through a grassland you might hear birds that aren't necessarily grassland birds. If they specialize in wetlands or shrubs, for example a red-winged blackbird, you might hear a lot of them walking through the grass but they're not a grassland bird. They breed in wetlands and shrubs around wetlands. A meadowlark is a grassland bird, upland sandpiper is a grassland bird, just things that specialize in grasses.

Jess: Cool. So why should we care about these things?

Mike: Well... how long do we have on this? ((laughter))

Jess: 10 minutes. You have 10 minutes.

Megan: You have 10 min to talk about why we should care.

Mike: That's the wrong course on that question, but I'll make it easy for you. I'll break it down to two different reasons. You can care about them because they're really cool because our lives are enriched, in fact our lives would be all the poorer because of their absence. You walk out into a prairie, everybody here knows this. Well... maybe you don't. You have to get there like before 8 AM... Megan. ((laughs))

Megan: It got shady in this office all the sudden, it got real shady in here.

Mike: If you can get there before 8 AM, the meadowlarks are singing it's beautiful. Imagine that without the grassland birds there.

Megan: It'd be quiet. It'd be peaceful. ((laughs))

Mike: You're missing my point.

Jess: We have a lot of awe inspiring moments on the podcast like this where people are describing beautiful scenes out on the prairie.

Mike: Awe inspiring might be a little bit of a stretch I guess...

Jess: It is!

Megan: It is awe inspiring. Beautiful moments happen on the prairie.

Jess: Heck yeah, you hear all these birds out there on the prairie.

Mike: Yeah that's awe inspiring, but my description of it is not awe inspiring.

Jess: It was, I disagree with you.

Megan: It was good.

Mike: Ok, so that's one reason. Now, a lot of people aren't going to be convinced by that so then you go to another reason which is that we don't want these species to become endangered—federally-listed endangered species. That's a lose-lose for everybody. So, even if you don't necessarily care that much about grassland birds per se, I guess this is a third reason. Something is causing those birds to decline and those things are going to have repercussions on everything else—pheasants, of course they are a grassland bird, we can't separate them from this discussion about grassland birds. Water quality—if habitat is being lost—it will affect water quality as just one example.

Nicole: We'd be overwhelmed with grasshoppers. The prairie would be even noisier than you think it would be.

Megan: No, it wouldn't be peaceful.

Jess: They provide an important ecosystem service—eating grasshoppers.

Mike: Eating grasshoppers, yes, that's a good example.

Jess: And mosquitos. Minnesota's state bird, the mosquito.

Mike: Very true, very true.

Megan: I've heard that a time or two. The good part about working in the prairie is that mosquitos are less, which is also why I love prairies.

Jess: It's true.

Megan: But, we digress. So, you mentioned that we don't want them to become endangered, aren't there some grassland birds right now that are endangered? Talk to me a little bit more about the group as a whole and what's been happening to them because aren't they declining?

Mike: They are the most declining guild in North America.

Megan: What's a guild?

Mike: A wildlife grouping based on some criteria. As far as a habitat guild like compared to forest birds, compared to ocean birds, compared to all those different kinds of habitat guilds, grassland birds are declining at a steeper rate than any of them. Their habitat has been converted into agricultural lands or converted to urban habitat and developed. Overall, they've lost their habitat for the most part that they had, that was covering this landscape, pre-European settlement. We've got isolated little patches of habitat that remain for them and are supporting them right now. Well, I should rephrase that, we have some admittedly depressing evidence that that habitat is not doing a good job of supporting them. The project I'm working on with the DNR is a long-term prairie monitoring project and we're finding that in these intact, protected remnants [of prairie], their populations are still declining within them. Even though that habitat is not being lost within that remnant, and they're protected, their numbers are still going down. Obviously that means that something is going on in the surrounding landscape that is affecting those birds. We know they're affected by habitat in the surrounding landscapes as Nicole and Lindsey talked about for pheasants. We know they might be affected by pesticide use in the surrounding landscapes and we know there are other factors going on in their wintering grounds that are probably affecting them. Climate is probably playing a role [as well]. The thing we can do something about right now is probably habitat. We can restore their habitat. Maybe I'm going too far down the road.

Jess: Nope, that was our next question. What can we do to help these guys?

Mike: I'll talk about it at a small level, well not at a small level, but at an individual person-level of what we can do. Ok. The easiest, most straight forward thing is to buy grass-fed beef. Lindsey and Nicole both touched on this—making win-win situations on private property in our agricultural sector so that they are developing habitat for pheasants and these other grassland bird species. A very simple, straight forward way of doing that is to grow our cattle on grass. At the same time do that in a way that provides some habitat for these birds. For me that is one thing that provides some hope for these grassland bird species.

Megan: Did you just say that you feel hopeful when you get to eat meat? Is that what I heard you say?

Mike: Absolutely.

Megan: Like the future of grassland birds in Minnesota is based on how much meat Mike can consume?

Mike: Yes, yes. ((Laughter)).

Mike: I was tempted, I should have done it. I should have brought a bowl of soup for each of us filled with grass-fed beef. I've been preparing every week-- because I'm lazy and I can't cook food in the evenings--so on Sunday I make this giant batch of chili with grass-fed beef and then eat it throughout the week.

Megan: Are you telling me that every week all you're eating are bowls of chili? ((Laughter)).

Mike: Yes.

Megan: For the birds! This is dedication for all of our listener's right here.

Mike: I do it for the birds.

Jess: For the birds!

Megan: For the birds!

Nicole: Do you know what would make it even better for the birds? Occasionally make it vegetarian chili.

Mike: I can't even comment on that.

Jess: Mike's not even willing to go there.

Megan: That's not in his moral code. He eats the meats. He's doing it for the birds. This is the power of conservation right here—bowls of chili, brought to you by Mike Worland—saving one grassland bird at a time through each supper bowl.

Mike: Now, I'm serious about that. Grass-fed beef. In addition, everything in this world revolves around money. There's two things I want to say about money: 1. The Legacy Amendment means a lot to us as far as conservation. So, I want to thank the citizens of Minnesota for voting the Legacy Amendment in—it's a big help. 2. This is my shameless, well I shouldn't say it's shameless, but I want to promote my program, the nongame wildlife program that I work in. SO, the only reason I can do what I'm doing—the only reason I can monitor prairie wildlife and help conserve them is because of donations given by Minnesota citizens to the nongame wildlife program. Especially on your income taxes when you donate to that loon checkoff, that goes to us. That's all I got—those simple things. Those simple steps for conserving grassland birds.

Megan: I like it. Thanks Mike.

Mike: Mm Hm.

Jess: Alright. It's time.

Megan: I know I'm ready. Are you ready Jess?

Jess: Yep, I'm ready.

Megan and Jess Together: Let's Science! To the literature!

Megan: Alright, this is the part of the podcast where Jess and I recommend a book, a blog, or a paper. And today we made our guests work extra hard and they gave us their favorite papers based on all the fun pheasants, feathers, and guns things that we've been talking about today. So, we're going to just round robin it with y'all. And you are just going to give us the highlights of the paper that you recommend. Nicole, we'll start with you.

Nicole: So, I'm going to recommend two things. One is the Benson, Chiavacci, and Ward paper from 2013. They did a meta-analysis of looking at nest survival and bird parasitism of grassland birds. The other is an entire studies in Avian Biology which looks at using video surveillance to determine who the nest predators are. The short

answer is it's not always the suspects as usual. Nest predation varies by region and by landscape so there are a lot of different nest predators out there. The reason this is important is because predation is by far the biggest factor impacting grassland bird productivity—whether we're talking about pheasants or other grassland birds. A lot of nests fail due to nest predation. That's a major cause of failure. Which inevitably leads to the question: why not just control all the predators? Which leads to my response of predators are people too and they want a good meal just like the rest of us, but also it's just ecologically inappropriate on a large scale. It takes a lot of time and money to manager for predators and you can remove one predator and because it's not the suspects as usual, you just open the door to another predator moving in. I really like to geek out, talking about nest predation in grassland birds so those are ones that I'm recommending.

Jess: Lindsey, you're up!

Lindsey: Alright, well I'm going to do a little sort of shameless self-promotion. I want to talk about a paper that I'm actually a co-author on—one of many. I don't know if you want the name of it or what, but it's Wszola et al. and it's called: Translating statistical species-habitat models to interactive decision support tools. IN a nutshell, the reason why I really like this paper is oftentimes we as scientists or researchers will make these models, complicated models and for instance this paper talks about a pheasant abundance model that we created in Nebraska, which is great. We can do that, but then managers often say what does this model mean to me and how can I use it? Oftentimes, they care about pheasant abundance, but they also care about what it costs to put habitat on the landscape and how much do they [pheasants] need to make a difference? This paper talks about a package, a computer package that we designed to help visualize this and be interactive with managers. So, they can pull up a county and look at the land cover and then they can say well if I add a certain percentage of grassland how is this going to affect pheasant abundance. I think it's important that we as researchers think about how managers can use information and this is a cool paper that talks about that.

Nicole: I'll just add that Lindsey might think it's a shameless plug, but I think it's an important one because everything I just talked about is that mechanism—it's that really science-y part. But it doesn't translate for managers. When people come to me and say will which patch of land has more value for pheasants, I always like to say well there's not a one-size fits all approach and it doesn't matter. The work that Lindsey and her colleagues did takes that mechanistic approach and scales it up to a usable tool for managers. Some of our DNR managers here in Minnesota have already looked at the tool and they thought it was an amazing resource. So, they should be pretty proud of that work even though it's Nebraska-specific.

Lindsey: Well, it's Nebraska-specific, but actually this paper talks about how to—I mean the code is all available for designing this package so you could literally take any model

and put it into this and make an interactive tool. That's what I think is really cool about this paper.

Jess: That's cool.

Nicole: Yeah.

Megan: That is cool.

Nicole: So, all that nerdy stuff I talked about in terms of nest predation—it scales it up and makes it a usable tool, which is great.

Megan: I like it. Mike, can you top that? What do you got?

Mike: Absolutely. No I can't.

Megan: Way to set the bar low.

Mike: In fact this paper doesn't have anything to do with me per se, but [it's by] Brennan Kuvlesky. In fact, you know why it has nothing to do with me is because I can't pronounce the second author's name: Kuvlesky. They do a nice job of summarizing the status of grassland birds and their threats—bearing in mind that this is already somewhat dated because it's 2005 and there's a southern and western bias because they're from Texas. What I really like about this paper...ok I'm going to start by saying my one criticism is that it's [titled]: North American Grassland Birds: an unfolding conservation crisis?

Jess: Question?

Mike: Question mark. And it's not a question, it IS an unfolding conservation crisis at this point. It's not an opinion, it is. They have some real reasons to be optimistic, some potential solutions. They talk about the North American Model of Wildlife Management. This is what we did for game species especially in the early 20<sup>th</sup> century when their populations were plummeting. There's reason to assume we can use some of those same tools to help out grassland birds. They talk about using game species, which of course have a lot of funding and a lot of people care about them. Pheasants are a prime example. Using them as the keystone species or the umbrella species or whatever you want to call it and under them you can provide habitat for all of these other grassland birds that are in trouble.

Jess: Awesome. I feel smarter already.

Megan: I do too.

Jess: Hey Megan. Take a hike.

Megan: I think I will, Jess. I think I will. This is the part of the podcast where we encourage you to take a hike and go out to the prairie somewhere near you, and explore public lands. These are your properties and we want you to get the most out of them and so again, we put extra work onto our guest speakers and we're going to

highlight their top picks for prairies. So, this is not to slight any other prairies, this is just their preference for where they like to recreate. Nicole, we'll start again with you. What is your pick for today's take a hike?

Nicole: Well my pick is not one that I necessarily go to recreate in, but it's more that this is one I've spent a lot of time in for our research. I picked the entire project area south of Worthington—known as the Worthington-Wells project area. It's in the Okabena-Ocheda watershed district and in particular there are is a complex of WMA's [Wildlife Management Areas] down there including: Peterson WMA, Lake Bella WMA, and Wachter WMA. I don't necessarily go out of my way to drive there on my weekend off, but during our research I spend a lot of time there. There are some really scenic views. It's a great mix of upland grassland habitat as well as wetlands and some really scenic overlooks depending on what time of day you're out there.

Jess: Nice. Lindsey?

Lindsey: Yeah so, I'm going to pick a prairie right here close to home. We're here recording in the Madelia research office and we're actually located on the W.R. Taylor Memorial WMA. I picked this WMA because I spend a lot of time in it. I look at it every day when I come to work and I also spend a lot of time with my dog out on this WMA. For me, I like it. It's scenic and it gets me out of my head and destressed on a daily basis. Sometimes you don't have to go far to have a good place to just do a little nature detox kind of thing.

Megan: I love that. Sometimes you don't have to go far... We're blessed in Minnesota that our public lands are nearby.

Jess: Accessible.

Megan: And accessible. I like it. Mike, what's your pick?

Mike: Glacial Lakes State Park.

((Megan and Jess snicker))

Mike: I love Glacial Lakes State Park because it's big so it's one of the few places remaining where you can walk into the middle of the Park and look around and all you see is prairie. That's a rarity. It's a rarity nowadays. It's got some really interesting topography. It's got lots of wetlands and lakes imbedded into it so it's got interesting and diverse wildlife communities there. It's beautiful. That's my favorite.

Jess: Some really cool geology in that area too.

Mike: Yeah, Ok. Yet another reason. I really didn't know anything about the geology.

Jess: The potholes. Just all of the potholes and glacial lakes. Lakes caused by glaciers.

Megan: Jess and I, you might have heard us giggling in the background when Mike mentioned Glacial Lakes State Park and that has nothing to do with the state park being good or not good.

Jess: It's an absolutely beautiful place that I will never again visit.

Mike: What?!

Megan: Yup. ((Laughter)). I feel like because it's our last episode, we're going to have to tell this story to our listeners just so that you can understand and appreciate why Jess and I have an aversion of this. We thought that Mike picked it just to poke the bear a little bit at us.

Jess: Yeah.

Mike: I don't know this story.

Megan: He didn't know so we're going to tell this story. So, some of you know who are listening that we do these native plant community trainings every year. Jess is out on the prairie with a net and she's catching things for you to look at. She's getting super excited. I'm showing you plants and making up ridiculous names for them. It's a good time. We are teaching you about all of the remnant prairie in Minnesota. Well, when we do that we like to camp.

Jess: We like to explore our State Parks.

Megan: We like to see new places and Minnesota State Parks are beautiful. They are some of the best State Parks in the Nation. I'm going to say they ARE the best in the Nation. I'm just going to say it. I said it.

Mike: No Bias.

Megan: yep, no bias, I just work for the DNR. I love them, but unfortunately Jess and I were camping. We were tent camping and we'd had a late night, you know.

Jess: Separate tents. We had separate tents. Set the scene up.

Megan: Oh yeah.

Jess: We had this beautiful—the most beautiful campsite in all of Glacial Lakes State Park and we had the entire park to ourselves because it was a Monday, I believe. Monday or Tuesday.

Megan: Yeah. I think it was Tuesday, but that's not important.

Jess: And we were on top of this mound in our separate tents. The sun has set and we're sleeping soundly.

Megan: All of a sudden we're just in the tent and every camper's worst nightmare, you just start hearing ((Megan imitates low growling and huffing)).



((Laughter)).

Mike: Was that Jess or...?

Megan: There was some real loud running. Like really loud running. ((Hits table to mimic running))

Jess: I really felt the whole ground shaking. The. Whole. Ground.

Megan: Yeah, you could feel the ground shaking and then all of a sudden in the corner you just hear ((Megan screams)) like real loud. I'm in the tent and I'm just—

Mike: I hear ringing in my ears.

Jess: Yeah, that's loud. It was loud.

Megan: It's real loud. It sounded like a kid screaming and I'm thinking to myself when I wake up, somebody needs to pick that baby up! It's like crying and it's 3 in the morning.

Jess: Oh wait....there's no one else in the campground.

Megan: Then your brain, you know as you're waking up starts to process.

Mike: That sounds terrifying.

Megan: Yeah so you're thinking well why would a baby be screaming when we're back in the other campground and there aren't any families back here? There's nobody here.

Jess: Nobody.

Megan: So, then all of a sudden, you know, you're freaking out basically. We're freaking out.

Jess: I was sweating. I was just sweating buckets.

Megan: It's getting closer [and we've got] just cold sweats. And I finally go ((whispers)), "Jess?"

Jess: ((in a high-pitched, scared voice)) Yeah?

((Mike laughing))

Megan: Real quiet from the next tent, ((Imitates Jess's scared voice)) "Yeah?" "You hear that?"

Jess and Megan: ((terrified voices)) Yeah, I hear it.

Megan: So, I'm like, what is it? ((Imitates jess)), I don't know! So, we're freaking out and I'm like, "Want to get in the van?" She's like, "Yeah!!!" So, then you just have the panic you know. This thing is running around and you can still hear it breathing. And I cannot get my sleeping bag [unzipped]. I can't get out of my sleeping bag. My zipper is stuck. I'm unzipping it and all I remember saying is, "Don't leave me in here, Jessica. Don't

you leave me in here, Jessica!!!" So, then we're trying to call Nancy who is our other coworker and friend. She's sleeping in the van because she forgot her tent poles. Classic mistake. Never do that. Hard to put a tent up without them.

Jess: In this case, it may have saved her.

Megan: It may have saved her though, probably great. So, we call Nancy. Let's keep in mind it's like 2 in the morning. I'm calling her because we want her to turn the headlights on to spook whatever this is. You know because it sounds loud. It sounds heavy. It sounds loud. So, you call Nancy at 2:30 in the morning. ((Imitates Nancy being very composed)) "Hello, this is Nancy." ((Laughter)). It's like the most professional-sounding. You know somebody has children when they answer the phone at 2:30 in the morning ((imitates composed phone call answering again)). What's she doing in that van? Is she awake? Was she playing cards? So, then we're like, "Nancy! We're going to need you to unlock the van! And turn the headlights on! Turn the headlights on!" She's like ((Megan imitates Nancy's composed voice again)) "Just a minute, please." It's like the best customer service ever. So, she can't find the headlights because it's 2:30 in the morning. So, she just starts...what did she do hit the panic button?

Jess: You hit the panic button on your car!

Megan: Oh I hit the panic button on my car.

Jess: It did absolutely nothing for this critter.

Megan: Because this is what the panic button sounded like ((Megan imitates very quiet horn beeping)).

Jess: It was kind of sad.

Megan: I go, is that it?! Is that all it does?! Because this is a serious panic moment! So, Nancy shines the headlights on, and I'm still trying to get out of my sleeping bag. Jess is out of hers, 10 points. I would have already been eaten.

Jess: You were panicking.

Megan: I would have been eaten. Jess was already ready to go! So, then we just do this scramble and we literally dive into the van and then 10 seconds later we're like, my sleeping bag! Because we're going to sleep in this van now. So, I grab my sleeping bag. I had to go back to the tent like 16 times. So, then we slam the van door and Nancy is like are you guys going to sleep in here?

Jess: ((Matter-of-factly)) Yeah. Move over.

((Laughter))

Megan: Jess is in the front seat, she's already got it reclined and she's like uh huh, we're sleeping in here! So, the next day we're looking for tracks of this thing. We definitely slept in the van. It took us about an hour to settle down. Nancy finally had to

tell us to chill out. We settled down and we call the Park Manager and she comes down. She's real good. They're trained. They are trained for any kind of emergency.

Jess: ((laughing)) Biologists and non-Biologists alike.

Megan: They are trained for any kind of freak-out moment that you might have. You are never safer than in a Minnesota State Park. So, she starts playing us calls. We show her footprints and the footprint was big!

Jess: They were huge!

Megan: It was a huge footprint. We had pictures of it and we were like, see we did NOT make this up! This happened! So, she plays a call and she goes, was that it? And we're like, yeah, yeah that sounds like it. So, she goes well let me play this other call. She plays the second call. And we're like, no that's it! It's definitely that one! Because it was a haunting scream.

Mike: Haunting.

Megan: Yes, it was very haunting, like this eerie sound. We're telling her we think it's a mountain lion. We don't know. We don't know anything that screams like that. So, when she plays the second call, she's like yeah that's a fisher.

Jess: She even said something like, they're 8 pounds.

Megan: Yeah she did! Let me give you a biology lesson. They're 8 pounds. Let's be clear they are ferocious. Not to people, but they are a medium-sized predator.

Jess: Other park visitors thought it was a baby cub—a baby bear.

Mike: They have a lot of hair and a lot of fur. They are not big.

Megan: They are very furry. Very cute. They look like a really furry weasel.

Jess: Until they open their mouths.

Mike: They are in fact a weasel.

Megan: Yeah, they are in the weasel family. Yes, they are. So, they are with badgers and minks and other things like this. Otters. They are in the same family as otters.

Mike: They are in the same family as wolverines.

Megan: Yes.

Jess: So, this is why Glacial Lakes State Park is cool because it's at this interface of prairie and forest.

Megan: And savanna. It's a transition zone. So, you have this cool thing happening...

Jess: Cool critters.

Megan: Where you've got Pope County and Kandiyohi County and fishers are actually making a comeback even though they're a woodland species. But because of that transition zone and the savanna, they are actually coming down into Kandiyohi County and expanding their range. So, it's really cool. Not cool at 2:30 in the morning when you think you're going to be eaten. That is not cool. It was the worst.

Mike: That was a memorable moment for you.

Jess: It was.

Megan: It was memorable. It was terrifying. I'm still terrified. I have PTSD.

Nicole: But no longer your favorite park.

Jess: It's beautiful.

Megan: It's beautiful. We can't go back there.

Nicole: No longer your favorite park to camp in.

((Laughter))

Megan: Yeah, we can't camp there.

((Laughter))

Jess: I'll visit—in the daylight.

Megan: In the daylight, it's great. So, we're at the end.

Jess: It's been great. This has just been wonderful.

Megan: I know, but I'm sad.

Jess: I know. I know.

Megan: We're not just done with our episode today on the podcast. We want to thank all of our guests for being here. You all did a fantastic job. I feel a lot smarter.

Jess: I do too, yep.

Megan: I know, but we are at the end of our Podcast series for this year. So, time flies when you're having fun.

Jess: Yep, we've learned a lot.

Megan: When you're running from fishers, time flies. So, our season may be over, but there are many good seasons just beginning in Minnesota. You've got pheasant, deer, waterfowl ((pronounced waterfall)) hunting as we say in Minnesota. ((Jess laughs)). Not to mention the glorious Minnesota fall and the first snowflakes of winter. Get out there and explore a prairie near you. Jess, want to do this again next year?

Jess: Yeah. Of course.

Megan: I'll see you right here next year.

Jess: Alright. Sound good.

Megan: Catch us on the Prairie Pod.

((sounds of birds chirping and wind blowing))