

Field Day Podcast Ep. 8 Dr. Jessica D'Ambrosio.mp3

Jordan: Welcome to episode 8 of the field day podcast brought to you by the Ohio Farm Bureau Federation. Today's episode is Dr. Jessica D'Ambrosio from the Nature Conservancy. Jessica and TNC kind of round out the field that we've had so far this year, you know we've talked water, energy, economics and manure. All these things that you know you can kind of put on a farm and kind of see where they fit in, well, this is another thing that fits in where maybe you want to put a two stage ditch in on your farm, maybe have some questions about a certain tactic and to conserve some water or some nutrients. The Nature Conservancy is a resource for that. They are a resource for funding, they are a resource for information and expertise and Jessica is one of those people for them. I hope you like the conversation and please use TNC and all of these resources available to open your mind on some of the conservation practices you can have on your farm. Enjoy.

Jordan: All right we'll get started here. Who are you? What do you do? Where do you come from? Where are you going? All that fun stuff.

Jessica: Okay, I'm Jessica D'Ambrosio. I am the western Lake Erie Basin agriculture project director for The Nature Conservancy. I've been with the Nature Conservancy just about two years now based out of Defiance, Ohio. Before that, I had a windy path. I have a background in wildlife and fishery science, a background in environmental science and hydrology. I did my graduate work at Ohio State University in environmental science and agriculture engineering and I got into agriculture mainly through agricultural drainage ditches and trying to reconfigure them or rethink them to provide drainage function, but also a better ecological function.

Jordan: Yes so what brought you (to Ohio)? I don't know if you were in Ohio originally but what brought you into this position. What was the driver?

Jessica: That's a good question. I am originally from Pennsylvania, I grew up in Pittsburgh and I moved all around the country. I was interested in this position because I had worked with The Nature Conservancy in the past doing graduate work, on the two stage ditches in the western Lake Erie Basin. It was an organization that was passionate about what they were doing, delivered real on the ground results and was engaged with the farming community which was a little unique for an environmental organization.

Jordan: Yeah, we'll talk about the ditch stuff here in a little bit. Tell me about the Nature Conservancy. You know we refer to them as TNC. A lot of times I'm kind of unfamiliar with them to a certain degree, I mean I've worked with you on the demo farm projects and other things. Just give us the overview of who is TNC.

Jessica: Okay, well we're the largest conservation organization in the world. We've got offices in all 50 states in the U.S. and in more than 60 countries across the world. It's our mission to preserve the land and water upon which all life depends. We probably got our start and are probably most famously known for purchasing and protecting rare and unique places all over the world. Over our history, we've kind of evolved our thinking and realize that humans are as much a part of nature as nature is. And so you know our evolving vision is really trying to come up with strategies that solve big global problems that benefit both people and nature.

Jordan: That's a so good mission. So I guess not to get in too deep here, how you think that fits you know with farmers or you know agriculture. Sometimes we get painted in a certain corner sometimes environmentalists get painted into a certain corner. You guys seem to play the middle a little bit more than some, is that strategic or is it just kind of where your mission falls in, or how would you explain it?

Jessica: That's a good question, it's probably a little bit of all of that. In this area of the world the, the Western Lake Erie Basin, we learned early on we are trying to protect a endangered mussel species in the St. Joseph River and we realized really early on that we weren't able to do the work we needed to do to protect that species without involving the landowners, and the landowners in that watershed were predominantly farmers. Once we started talking to them instead of ignoring them or not incorporating them in the solutions we found that they were many times more interested and more excited about what we were doing, sometimes more than we were. They really got involved and really were interested in protecting this species that was founded. They maybe didn't know it was in the waterways and in their ditches. So that was a really great experience to have and that, you know, that was more than 20 years ago, 25 years ago. That relationship building just sort of evolved and realizing that you know the adage is true, you catch more flies with honey than with vinegar and just saying, hey let's sit down at the table and let's come up with some solutions for nature to protect water quality that work for you and work for us.

Jordan: That's one of the points that is hard for us to talk about it because they are going to be like, oh yeah, because you're Farm Bureau. But one of the things that's lost in the whole conservation, water quality nutrient management discussion, is the love of the land from the farmers. I mean they obviously make a living from it, but you know a lot of hunting, fishing, all sorts of things that you can think of from our ag sector, so it makes sense that you could garner some sort of enthusiasm for conservation out of the farmers.

Jessica: Right. And they are out in nature every day and a lot of times we think of agriculture as the big capital A, agriculture, but we have to remember that what supports agriculture is an underlying ecosystem, a soil ecosystem, water based. So these are all natural pieces of the environment that we do manipulate to grow crops but they are pieces of how we make our decisions and they affect how we make our decisions. And we know that farmers are of course they are business owners. They're trying to protect their business interests and keep their crops growing but they also have to make sure that environmental resource, that soil and that water are good enough that a crop can grow. So they're constantly trying to find the balance and it becomes difficult, sometimes easier when we have technology, but sometimes more difficult because sometimes technology can make our jobs easier but it can also remove us a little bit from that natural environment.

Jordan: Yeah that's a good point, and you talk about manipulating the environment. Talk about, where you've come from the two stage ditch just water management, ditch work altogether because that seems to be your backbone in this realm.

Jessica: Right, it's part of a spectrum of streams and river and hydrology in a watershed. And so it is manipulating a landscape and an ecosystem in an already modified and manipulated way. So when we can have a natural stream channel and stream river ecosystem with a riparian floodplain, of course we would want to choose that, but we know that we have a long history of land modification especially in this part of the world with drainage, draining wetlands, removing riparian areas, removing trees. We have a land use

that is not going away anytime soon and it is really a foundational land use for our state's economy. So how do we find ways to balance that need or that current land use with the needs of nature? And so that's the million dollar question and I think that really speaks to our mission and vision, too. A two stage ditch is a perfect example of that. So a two stage ditch is an engineering design, it's a structural design for a drainage way that makes sure that the drainage function is still there which we need to grow crops and even build houses in this landscape, but it also puts in some of those natural habitat, natural nutrient cycling mechanisms or processes back into the system that might have been lost before.

Jordan: So, I guess explain, how does that happen? What is the mechanism for which you can have more ecosystem diversity or I guess for lack of better terms, animals in there?

Jessica: Well hydrologically speaking or geomorphically speaking, those are the technical words that we use. So basically a stream channel, a good functioning stream channel system and we think about them as systems. All the components that we can think of it's the channel itself that we think of as where the water's flowing, but it's also the attached land next to it that we might call a floodplain or a riparian zone. In order for a system to function like it's supposed to it needs both of those and they both have to be well connected and functioning together. The premise is, is that can we put that same type of system maybe in a smaller or a shrunken down version within the confines of the ditch itself. So can we put a little mini floodplain in there? Can we vegetate it? Does it keep the ditch bank stable so we can get the drainage function and does it do all the processing that a natural channel would want to do? So, moving sediments, moving water through the system in a balanced way.

Jordan: So how's the adoption rate for something like this? From my experience with them, you know, you guys have one on one demonstration farms previous to when we started the project and I understand it takes a little bit more of a footprint in the middle of the field than the normal ditch. How is the adoption rate been for farmers?

Jessica: Well, it's been mixed. So of course you hit the nail on the head with the downside. The main downside of the practice is it is a long term permanent practice and that it does take some land out of production because to put the floodplains within the ditch you have to make the ditch wider, which means you have to go out into the farm field a little bit more. And of course nobody likes to lose a little bit of extra farm field. On average, for about one mile of two stage constructed ditch, you might lose about an acre of farm field. There's been a couple of cases where we've been able to either have a net zero loss of farm fields or maybe even a slight gain if we've had areas that we've had sloping ground, low ground or fields that we could square off. But the biggest hindrance, well the two are, losing some land and it's a permanent loss. It's not that you can just put it back once you're done with it or once you don't want it and they tend to be a little more expensive. So they average about somewhere in that \$10 to \$12 dollar linear foot range, which is an expensive practice. It's expensive because it provides, it may provide a public benefit in treating sediment and nutrients and more natural function into the watershed, but it doesn't directly provide a benefit to the farmer, unless they're having a major problem with their ditch and that would be chronically failing ditch banks or chronic sedimentation that's threatening the drainage tile.

Jordan: You don't really have a lot of maintenance with the two stage ditch as opposed to the regular one?

Jessica: The goal is that we want to stop that traditional ditch maintenance or dipping out practice because it's very disruptive to the biology and to the stability of the ditch itself. And so we've found that these little benches act as really good anchors in the ditch bottom itself to keep the banks stable and because the low flows are moving faster through the system and as the natural regime of sediment and water flow is restored, we don't see a lot of sedimentation happening for the most part. Of the ditches we have constructed and been involved with designing which is probably a multiple dozen, we haven't had to go back and do the traditional clean out or dip out and in some cases where a farmer might have been having to do that every couple of years because of excessive sedimentation, they haven't had to do it since. The oldest ditch that we've been involved in is going on 20 years old now. So that's a pretty long time. Pretty good assurance but we've had in places where we've put them they've been really well received and the farmers have loved them. They realize the drainage benefit when we do get really high rains and high flood flows because you have a bigger area for that water to move through, you tend to get a lower flood stage or less flooding out into the farm fields and so that's been a benefit that farmers have recognized right away. And one of the things that we've heard multiple farmers say that didn't know each other which is really interesting, say I've never heard my ditch flow so quiet after they've had a two stage put in, so meaning that the water is slowing down, it's not allowing things to drop out it's not as erosive on this side slopes. So those who have them have generally liked them. Convincing folks to put them in unless they have a resource concern or ditch concern, it may not be the best option for them.

Jordan: Yeah, good points. You talked about heavy rainfall and things like that. I know climate change is kind of a marked word for other people, but just going from the fact that the stats say that we are getting heavier rain events more often than we ever have or at least in the last 20 years, 15, 20 years. How do you see that playing a role in water management and ditch maintenance and how does that play a role in all of this?

Jessica: Yeah, I think the evidence of more intense and frequent rain events is not just anecdotal anymore. And usually when I talk about this issue with the farm community, I say you know that weather has been really wacky recently hasn't it. And I think everyone can agree that the weather has been a little wacky lately. And yeah, we do have some evidence. We do have some data to show that in this region that we indeed are getting more frequent and more intense rain events. And that's going to be the trend as we go forward. Whether you can attribute that to climate change, you can attribute it to a lot of things, but the fact of the matter is that that's happening right now and we're living in it right now. How does it affect what's happening in our drainage ditches and how do we manage it? Well it leads to potentially more flooding, leads to more erosion. So those are all things we've done a really good job in our agriculture watersheds of putting practices on the landscape that reduce erosion, but we're going to need to be thinking a lot more grander scale, larger scale of where do we put structures or build in that resiliency to these flood events to these rain events? So resiliency is being able to withstand large storm events, large flood events with minimal damage. Right. Where in the landscape can we put those back in? We look at nature-based solutions. So we look at wetlands, we look at floodplains, we look at riparian zones, we look at vegetation as part of the nature based solutions. Where do we capture the water, where can we slow it down and then where we can slowly release it back to the watershed.

Jordan: Yeah I mean so if you to ala cart you know with no resource constraints or anything like that like, what would you want to do, what would be your ideal situation to

kind of control the quantity and quality of water?

Jessica: Yeah I think that very clearly I would be looking at places throughout the landscape at a large scale or at a range of scale so within a farm field, at the edge of a farm field, within a subdivision, doesn't have to just be an agriculture area or land use but looking for places that make sense to put these structures or these practices that slow down, capture and slowly release the water. And those are making sure floodplains are protected and connected to the stream channel and they're well vegetated, making sure that we have wetlands or wet ponds or storage ponds on the landscape, even if we use some of those ponds to recycle water back to the farm field that that works, too. So places where we can store the water on the landscape. In the Western Lake Erie Basin specifically that used to be the great black swamp. So it was once a giant wetland. And so we know we can't go back to that. We're not trying to go back to that but where can we put those places. We have a goal of restoring about 1 percent of the acreage in the Western Lake Erie Basin back to this nature based practices. It's an ambitious goal but it doesn't mean taking farmland away, it doesn't mean taking prime development land away but it means looking at the places where we can find the best wins for everybody involved.

Jordan: What is TNC's goal for the future of water quality and future nutrient management? I know it's a very overarching question, but how do you think you fit in is we keep chugging along trying to chip away at conservation practices, do you have anything different or bigger in mind. What do you think you see yourselves in the medium future of this whole thing?

Jessica: Yeah, I think we've had a lot of success on the ground and working with partners doing educational outreach field days bringing awareness to these problems in these situations and some of the solutions. I think we're always looking for strategies and work that can be applied across a greater landscape so not just good enough for Ohio or the Western Lake Erie Basin but also programs, practices, strategies that can be adopted all over to help everyone facing these issues. We think a combination of voluntary and regulatory measures probably will have to be part of the solution to get to the place where we need to get to. And I'd say in the medium term helping to direct funding to align with certain policies we might want to come up with making sure those policies are flexible and constructive in nature and inclusive as well as making sure that we have the right science in place where we're very heavily rooted in science and science drives our decision making and our own strategies to make sure that we know what the best science is to tell us what's the most effective.

Jordan: You talked about a combination of voluntary and regulatory. What's your opinion on proposed or rumored future legislation on water quality or farming as a whole? Do you have any thoughts on that?

Jessica: Let me first start by saying in mass balance study that was recently done by Ohio EPA, we saw a lot of headlines that said a lot of money has been spent. Nothing's been done or we didn't fix it and that's unfortunate but if you read the actual document you'll see that it does state that the voluntary measures that are in place now and continue to be in place have done a really good job of, I am going to use an analogy here, they've been in a really good job of stabilizing the patient, right? So we have a patient, Lake Erie and Lake Erie watershed, who's sick and those voluntary practices without those in play, we wouldn't be able to debate these ideas and these decisions about what we should do next and who we should involve, but more needs to be done. And so I think regulatory measures and

policies need to be on the table as part of the solutions. Continued voluntary action does too. But really anything that is aimed at treating the root causes of the problem. So we stabilize the patient with our voluntary practices right. But we still need to fix the illness or fix the disease. So, can we take next steps, voluntary or regulatory, that help treat the root causes and then can that lead us towards really getting rid of the disease that Lake Erie has which is these chronic algal blooms.

Jordan: Yeah it's tough. You know it's a problem that has been increasing kind of bit by bit over the years and I think it's pretty unrealistic to think it's just going to happen overnight but it's nice to see that there some sort of leveling out or a decrease in some areas.

Jessica: And this is a long term plan. We have to be in this for the long term. We're not going to fix it overnight, unfortunately. I wish, I wish I could say we could do that. I think everybody wishes that. But I think coming at it from both ends with voluntary measures and doing what we can diagnostically. So can we soil tests in our field? Can we understand what our phosphorous loss risk is and how do we drive that towards helping people make constructive and flexible decisions about how they can meet a nutrient reduction goal that we have? So doing that and then also aligning that at the same time with some of those larger scale practices those nature based practices that I talked about earlier to really help with that acute problem that we're having, year to year, day to day as we do the work we need to do in the fields and locally and then aligning our funding to kind of be flexible enough to allow for both of those.

Jordan: Yeah it's tough because with farmers, it's easy to generalize a whole segment of people but I wish we could focus on solutions and not so much who's at fault or who's to blame because the issue is the issue. There needs to be less nutrients are going into you into Lake Erie and other bodies of water. Regardless of who's at fault and I'm hoping we can continue to push people to focus on possible solutions instead of trying to deflect or even just take on that blame.

Jessica: I think that's where The Nature Conservancy has had a lot of success in working with the ag community as we've sat down and we've said, 'hey let's talk about how we can work on this together and what are real solutions you can implement as an industry' rather than saying it your 'it's your fault, you better fix it or else.' So, again catching more flies with honey than with vinegar and real solutions that are practicable and that are cost effective that makes sense. And then using some of the some of our public funding to pay for the bigger ticket items that are long term and permanent makes a lot of sense. I think we've been able to learn from other communities like the Chesapeake Bay about what happens when you only point the finger and you become a very litigious society and you have a lot of folks that don't want to work together. And I think we have a really good partnership in place in the Western Lake Erie Basin that I hope can continue through this transition period that we're having now where we do have to do more. But figuring out what the more is together rather than having one or two people decide what that is.

Jordan: Yeah that's an interesting point. That's a good point. I don't think Ohio gets enough credit for how well people do get along to a certain degree. All the commodity groups and all the people at stake, you know everyone has is trying to get a piece of the membership pie so to speak. But really, everyone seemingly has an overall goal in mind and that's to make sure that farming and crop production, water quality and nutrient management and land use, all those things are balanced out and not tipping to one side or the other. It is encouraging to some degree, because I know we all sit down with you guys

and other I'd say NGO's or environmentalists or whatever you want to call your segment. I think we come together as a as a farming group pretty well there for the most part.

Jessica: That's been our experience and it's just been a matter of being practical and being realistic about what the solutions can be and should be and in pushing where we need to push and knowing when it's when we need to not push as hard, but constantly saying what can we do more and what's next for us.

Jordan: So how can how can farmers get involved with TNC? What would be the best way for them to get some get some questions answered about a two stage ditch any other projects or what would be the best way for them to get involved?

Jessica: Yes, so they can get involved in a number of different ways. They can contact our Defiance office directly. We're right in downtown Defiance, Ohio. They can come to some field days. We host field days with our partners and lots of folks around the watershed host workshops and field days to learn more about specific practices or understand what the current issues are related to the science of Lake Erie. We have one coming up on August 7th. Shameless plug, I'll put it in there, in Defiance County. We've got multiple counties as partners along with the Lake Erie CAP program and a four R certified retailer co-op. So multiple partners there. John Deere Company or Deering Company I think they're called now, they've been a longtime supporter and partner in the Western Lake Erie Basin. So coming to that field day on August 7th or others that they might see around the Western Lake Erie Basin getting involved in the four R nutrient stewardship certification program. So that's it's not a program for farmers but it's a program for those advisers to farmers. They could be retailers, they could be co-ops, they could be independent crop advisers. Asking if they're four R certified or understanding what the four R's are. Right nutrient source at the right rate, right time, and right place. So making sure that they understand that they're looking at a soil test and helping to make decisions about when and where to apply the nutrient that they need for the growing crop. There are a number of different ways to plug in. We work a lot with the local soil and water conservation districts and those are the boots on the ground. Those are the trusted advisers. So going in and having a conversation with your local soil and water conservation district is always a good way to plug in and the opportunities are probably endless.

Jordan: That's good. Is there anything else that you'd like to talk about, anything that we've missed anything?

Jessica: Oh probably, I'm sure after I leave here I'll think of something. I just wanted to say that we've really enjoyed and learned a lot by working with the Ohio Farm Bureau and they have been partners with us on promoting a range of things related to both aligning policy with funding so a statewide water bond for example is something that we've partnered with for a couple of years now that that we've seen recently proposed. So we're excited about that. Looking at soil testing nutrient management plan and of course, working together at the demo farms has been a really great experience. I just wanted to say thank you for that opportunity and looking forward to continuing to work with you guys.

Jordan: We appreciate that. I think that's the best way to end this thing is yeah let's compliment the Farm Bureau.

Jessica: Yeah, and we can share a good story about agriculture together!

Jordan: I appreciate your time and that's all we have for today.

Jessica: Okay thanks I appreciate it.

Jordan: That was episode eight of the field day podcast brought to you by the Ohio Farm Bureau Federation. If you have any more questions about water quality, nutrient management or anything that involves Farm Bureau please visit ofbf.org. Thank you.