A New Angle

Episode 92

April 13, 2023

Justin Angle: This is A New Angle, a show about cool people doing awesome things in and around Montana. I'm your host, Justin Angle. This show is supported by First Security Bank, Blackfoot Communications and the University of Montana College of Business.

Justin Angle: Hey, folks, welcome back and thanks for tuning in. Today's guest is Wendy Weaver, executive director of Montana Freshwater Partners, an organization dedicated to restoring, enhancing and preserving Montana's freshwater ecosystems.

Wendy Weaver: We're seeing these more extreme, intense weather events happening, and that is really taking a toll on our rivers and our wetlands and our streams.

Justin Angle: This team of five women based in Livingston includes a broad array of skills and capabilities, all focused on protecting Montana's aquatic resources. Wendy, thanks for coming on the show.

Wendy Weaver: Thanks for having me, Justin.

Justin Angle: So, tell us, where did you grow up and what did your parents do?

Wendy Weaver: I grew up in Missoula. I was born in Helena and moved to Missoula when I was in kindergarten. So, I grew up on the west side of town there. And my parents, my dad was a highway engineer for the Department of Transportation, and my mom was a teacher and then ended up staying home to raise kids and help in other various ways.

Justin Angle: Indeed. So how did you get interested in water?

Wendy Weaver: We grew up outside, so from when we were really little, we spent all of our time outside recreating on rivers and the backcountry and up in the mountains wilderness, and it was a pretty big part of our lives. I think my first trip on the Smith River, I was five years old, and I don't, it was obviously not permitted back in the day, but it was also a place that people really didn't explore. So, I think that was my first experience and we spent a lot of time on rivers, so had a very deep connection to our rivers and lakes in Montana.

Justin Angle: And at what stage did you decide you wanted to make rivers and water your career?

Wendy Weaver: My dad never talked about engineering. I don't think he wanted us, any of us, to go into engineering. So, I promptly went into engineering. And I wanted, I knew I wanted to do some type of water resources. And back then they really didn't have that type of program up at the university. The closest thing they had was agricultural engineering, which is like a bio

resource program, a lot of irrigation, that sort of thing. So, I went into that program because it was the closest thing to water resources and graduated with that program. Back in that day, I guess mid to late nineties, there really wasn't a field of water restoration and river restoration conservation that really, we weren't looking at our river systems in a way to work with Mother Nature. It was more of a how do we control them?

Justin Angle: Okay, so given that, describe Montana or Freshwater Partners, what is the organization all about and why do you exist?

Wendy Weaver: We were formed in 2011 and there are a number of people, very active conservation folks in Montana, and they had done a bunch of research and had determined Montana was losing a significant amount of our wetland and stream function in the state because of a lack of mitigation options. And so, we were formed as the state's first in lieu fee compensatory mitigation program.

Justin Angle: You're going to have to, you're going to have to define that term for us, that sounded important, but I don't understand what it is.

Wendy Weaver: It's confusing. So, through the Clean Water Act, the U.S. Army Corps has a 2008 federal mitigation role. And what that says is whenever there are impacts to wetlands or streams within a certain threshold, the impactor must mitigate for those impacts. So, it's in line with a no net loss of wetland in-stream functions. So, let's say the railroad is doing a project

and they're going to impact two acres of wetlands. They essentially have to mitigate for that impact. So, there's no loss of function.

Justin Angle: And what are we talking about as far as like an impact and a loss of function? Are we talking about pollutants or sediment or like what kind of does that look and feel like for somebody not familiar with that vocabulary?

Wendy Weaver: Sure. So, an example would be a road, a roadway is being built, and it's being either built over or adjacent to wetlands. So, wetlands are actually being impacted and removed from the landscape. And it's technically any, if there's any kind of fill in those wetlands, it's an impact. So, there's very strict requirements that the Army Corps has and what that is involved with that.

Justin Angle: And then what would be like a mitigation tactic to, you know, help? If a road's going in, it's going to displace some wetlands. What is a typical mitigation?

Wendy Weaver: So, there's different options. The developer or permittee can choose, and we're an option for that. So, they come to us and they can buy the equivalents of the wetland or stream credits that they're impacting. We take that money, and we identify a project to essentially restore that function. So, we might work with the landowner who has some wetlands that have been de watered over time. They may have been overgrazed, the vegetation removed, some type of human impact to those wetlands. And so, we take that

money, and we restore that function back into that landscape so that ideally, they're functioning in their natural, original, natural state.

Justin Angle: And I guess give us kind of the current state of play with Montana's freshwater resources, like how are we doing overall as a state and what are the biggest threats to fresh water in Montana at the moment?

Wendy Weaver: Historically, Montana, you know, in the mid-seventies, our water resources were under pretty significant threat from dam construction to de-watering and other types of impacts. And I would say the conservation movement has been pretty significant in addressing a lot of those concerns. And that said, we're also in the face of probably the most significant climate change impacts that we've seen in the last decade. And with that is coming significant extended drought and as we saw last summer, impacts from floods. So, we're seeing these more extreme intense weather events happening and that is really taking a toll on our rivers and our wetlands and our streams. So.

Justin Angle: Yeah, it seems like climate change is kind of making our rivers warmer and drier and lower flows. But at the same time, we're getting these large precipitation events like we saw last year that are pressuring the water systems in different ways. It's, these forces seem like they're disrupting whatever equilibrium existed before.

Wendy Weaver: Yeah, I would totally agree with that. Last year we were in a significant drought while we've been in extended drought for almost seven years. But our county had been experiencing droughts, pretty severe drought through the winter for four months and then we had this atmospheric river hit, not brought a large amount of rain that we hadn't expected. So, it's those types of events that I think are going to continue to happen more frequently and we're not really prepared to handle.

Justin Angle: Yeah, I mean, let's focus on the Yellowstone floods for a moment. What did you and your colleagues learn about the resiliency of the river and our water systems more broadly through the experience of that event?

Wendy Weaver: We've learned a lot. I don't know if we have built resiliency into our system over time. You know, there was a lot learned in the 96, 97 floods that happened on the Yellowstone, and pretty significant studies and efforts came out of those floods to improve resiliency on the river. And I guess I would say for the most part, those really weren't completed or implemented.

Justin Angle: Okay.

Wendy Weaver: And so now we're here almost 30 years later in a very similar situation, much more catastrophic flood. And looking back, what have we learned? And so, it's really

interesting, right, where a lot of this work has been done. We just haven't had the will or the means to implement what we know we should be doing.

Justin Angle: So, what are some of those things, like you say we have an idea of some of the things we know we need to do and we're not doing them. What are those things that we need to be doing?

Wendy Weaver: The flood was catastrophic in many ways because it impacted people and people's homes and businesses along the river. And so, when you don't have infrastructure, you don't have homes and buildings along the river. When a flood happens like this, it's nature doing her work. And it's only when you have, you know, those things in the way of it that it creates significant damage. So, you know, I think the things that we're focusing on is there's an extensive channel migration zone mapping that's been done on the entire Yellowstone River. So, the river has been mapped. We know where the evulsion zones are. We know where the high erosion areas are. We know where the river is going to go and move when it when it floods. And so being able to look at those tools that exist and getting our decision makers, whether it's local, city, county, state, to look at that and use that when making decisions on where development and infrastructure should go is really important.

Justin Angle: And so, the idea there is that a river will naturally migrate over the course of its life, and we need to have a land use policy and system that allows that migration as naturally as possible. Is that kind of what we're talking about?

Wendy Weaver: Yeah, I don't know if I would say yeah, ideally, we would have a land use policy that is not allowing development to happen in the floodplain. And in that 100-year channel migration zone, that is my opinion and I feel pretty strongly that that would be a great proactive way to go to build more resiliency into the system. Politically, I don't know how feasible that is. So how can we, at least from a voluntary standpoint, have those decision makers understand what that means when we do have development and infrastructure in those areas and how to do that in a way that's minimizing that risk and the damage that might happen when we start to see more of these types of events.

Justin Angle: Sure. So, Wendy, could you walk us through like a success story of where, you know, Montana Freshwater Partners was able to plug in and do some of this mitigation help with keeping the ecosystem as intact as possible? And what would you consider success? Can you walk us through an example?

Wendy Weaver: I guess what I can speak to is our first and second channel migration easements that we completed almost six years ago, and that idea and that concept really stemmed from those 96, 97 floods on the Yellowstone. When the Army Corps was sued, and from a flood of permits that were going to come in and rip wrap or lock up the river, the Corps was sued. And so that catalyzed a 15-year study on the Yellowstone. And from that, a number of recommended practices were developed, and one of those was protecting river corridors in perpetuity. So, if we could protect these areas in perpetuity, the river would always have room

to roam across its floodplain and therefore minimizing impacts and damage from flood and also providing wildlife and fish habitat and just allowing the river to function in its natural way. So, from that, we implemented our first channel migration easement near Sidney, Montana, and a few years later we did our second one near Forsyth. So, the lower Yellowstone and then the middle. And the idea was that we would build upon that, right? So having one in Sydney and one in Forsyth doesn't really do a lot. But if you start to string multiple CMEs together, channel migration easements together, over time, you're going to have this more expansive area that's protected. And so that was the idea. We've had a number of challenges. One of them being funding and a channel migration easement really is a voluntary agreement. A landowner typically is tired of fighting the river. They may have put rip rap in. They may have lost that rip rap in a high flood. It's very expensive. They're losing land. There's a lot of stress, especially as we saw here in Park County last summer. There's a lot of stress for landowners who live next to rivers. And so, the idea around this is that we could compensate them to give up their ability to essentially fight or control the river. And so, if they agree to not riprap or alter that channel migration zone area on their property, they would be compensated to do that. And then that remains in protection in perpetuity.

Justin Angle: We'll be back to my conversation with Wendy Weaver after this short break.

Justin Angle: Welcome back to A New Angle. I'm speaking with Wendy Weaver, executive director of Montana Freshwater Partners.

Justin Angle: How would that affect kind of the landowners, the experience of the land? I'm thinking an agricultural landowner might not be able to plant so close to the river or somebody, you know, if it's more of a recreational property, maybe they have to think about where they put structures and so forth, like what kinds of costs and benefits come with this to a landowner along a river?

Wendy Weaver: So typically, it's always, it's not a one size fits all. So, each easement is really catered to the landowners needs and interests. So, with the two that we did maintaining the landowner's ability to continue their agricultural production is really important. So, we don't limit that production. They are able to farm that property if it's in that area, as they always have. The things that are restricted are controlling the banks, so cutting riprap or hardening of any type of, any sort along the riverbanks. It would be building new roads. It could be they are not allowed to block side channels. So, keeping floodplain connectivity open and those side channels open is really critical. So, they're not able to plug those. And then, you know, each one is really catered for the landowner. So, they may be able to go and riprap right around their home, for example, of a big flood was going to come up. They're able to do that to protect structure, but they may not be able to build a new big home 20 feet off the bank of the river.

Justin Angle: Got it. Wendy, from the perspective of the river, how does the river benefit and all of the, you know, plants and fish and other aquatic organisms, how does that whole system benefit from a river being allowed to flow as freely as possible?

Wendy Weaver: You know, when a river is able to move across its floodplain and when it floods and in the spring and it gets a large volume of water and it moves across and it cuts into banks and it takes trees and vegetation with it, that whole natural process of it moving around is highly beneficial for the river. It has biomass in there that eventually provide food sources for insects and fish that messy structure deadfall that large woody debris is really important for fish wildlife habitat. The more a river is straightened and locked in the place, the more it degrades and the more energy it gets. And it essentially just shoots this power and this energy downstream and builds like a snowball, builds that power and that momentum and continues to impact those down below. So, when a floodplain is intact and a river can move out across that floodplain, it loses some of that energy and that sediment can drop out. And new sediment is very good for vegetative growth. And so, when it can't do that, the power just continues to cut the banks out more than it normally would, as if it could be dissipated across the floodplain.

Justin Angle: That's interesting. And it's something I had never kind of heard articulated that way. So, if a river is kind of constrained and managed and has, you know, riprap and structure banks and whatnot, flooding can be more catastrophic is what you're saying, because the river's constrained, it develops more potential energy and when a flood eventually comes, it can be more devastating.

Wendy Weaver: Exactly. And that we see that all over the place. Houston flooded in the way it did because it didn't have the wetlands. It didn't have those areas that that system used to dissipate across to move into.

Justin Angle: And so, organizations like yours and a lot of ecologists, they use the term resilience. I don't think it's a term that is broadly understood. But what you're describing is the benefits of a free-flowing river are resilience in a way. It can absorb some of the natural, for lack of a better phrase, ebb and flow of the water than a river that's been kind of constrained by human imposed structures.

Wendy Weaver: And there's a balance to that, right? So, we do have infrastructure along our river systems, we have railroads, we have roads, we have bridges. And so, it's not to say that we don't want to protect that infrastructure that's in place because we do. But there's a balance where we can let rivers roam. We really need to do that.

Justin Angle: So, one of the biggest kind of legacies of Montana's resource extraction-based economy is a lot of water quality problems. As we've kind of transitioned or are transitioning to an economy that's based more on tourism in many ways, like tourism is a resource extraction industry of a sort. And some argue that it presents a whole other set of stresses on our natural resources, maybe even more significant. How are you thinking about the balance between giving people access to these natural resources that they want to play and recreate in with the threats that that use that form of use brings to the resource as well?

Wendy Weaver: We're seeing that as a really significant issue. And I think river systems all over are seeing this type of pressure. And unfortunately, Montana doesn't have a funding mechanism to manage our resource in the way we need to handle this increased pressure. Our hunters and our anglers are carrying a lot of the weight with their fishing and hunting licenses to manage our resources, and that is just not working. We're going to figure out or learn the hard way on how to do this in a way that we can maintain the river's natural beauty and the things that draw us all to it in a way that it's not seeing a death by a thousand cuts in this very qualitative opinion. And what a good river experience or outdoor experience is, that's completely different to someone like me who grew up here versus someone that comes from anywhere else and experiences my experience. And what I think is too much pressure is completely different from someone else's. And how do you manage a resource with these starkly different opinions on what's too much and what's a better experience?

Justin Angle: Yeah, it's super complicated and takes good leadership and good faith collaboration. Are there any towns or states or communities where you see this being done? Well, not necessarily in such a way that we want to emulate, but who do you think is doing this as well as it can be done at the moment?

Wendy Weaver: You know, I think we still have a lot to learn. I think there are places that are doing it better than others. You know, I give a lot of kudos to the Flathead Rivers Alliance with their stewardship program and Clark Fork Coalition as well. I think their river stewardship

program, those are great. Honestly, I don't know if anyone is doing it in the way to truly protect and put the resource first. I don't know if we have the ability to set aside our personal interests and the economies that rely on the resource in such a way to put that first. That is my opinion, and I'm sure that's not held by many people, but I've changed my opinion just in the last 3 to 5 years based on the number of people coming and experiencing the backcountry in these places and not having the infrastructure set up to handle it and seeing abused in such a way that's really degrading it.

Justin Angle: Yeah, I mean, that was one of the things we saw brought into sharp focus during COVID was so many, you know, more folks here and limitations on other things that people could do. It's wonderful to see folks outside recreating and enjoying the space in which we live. But it's not without a cost as far as you know, the resource cannot just endure all of us wanting to get our little part of it all the time.

Wendy Weaver: Yeah, I would argue there is a tipping point and how to determine what that is and what are the actions to prevent that from happening. I won't claim to know what those are, and I don't know if anyone really does. And we have the ability to work together on both sides of the opinion to come up with a solution to do that.

Justin Angle: Sure. You know, Wendy, if somebody listening to this wants to kind of be a part of the process to come up with better solutions than we have now, I mean, it seems like achieving perfect is probably, you know, something that could get in the way of achieving

something good. But where would you advise people who want to get involved in protecting and enhancing our freshwater resources?

Wendy Weaver: Yeah, I think there's a lot of opportunities. There are many local watershed groups almost in every watershed in the state. And normally those watershed groups are always looking for volunteers on projects or a river cleanup or stewardship in some form or fashion. And I think that's a great way to get involved. I also think, you know, financially supporting those local watershed organizations in the work that they're doing to protect and restore those river systems is very impactful and really helps out. And then also just being in touch and staying on top of any legislation or policy that may be coming up that could threaten our resources as well. And that's a lot. But there are a lot of ways to do that. You know, one of the things we started to try to address this lack of funding for projects and managing this increased recreational pressure is a give back to the Yellowstone campaign. And there are other campaigns like this happening in the Big Hole up in the Whitefish Lake area and conversations around, you know, in the Bitterroot, I mean how do these local groups come up with funding to essentially tap into the tourism industry and nonresidents that are coming maybe not buying fishing, hunting licenses and having them contribute in some way and protecting these places. And I think that will have a lot of impact in how we manage rivers in the future. So, I think supporting those types of efforts will be helpful.

Justin Angle: Excellent. And if folks want to learn more about your organization, where would you direct them online?

Wendy Weaver: They can go to our web site at Freshwater Partners dot org and sign up for our newsletters. We're also on Facebook and Instagram and do a lot of outreach and education around different events and why rivers are important, those sorts of things.

Justin Angle: Awesome. Well, I encourage people to get involved. Wendy, it's been wonderful learning more about your work, Montana Freshwater Partners and the important role you play in trying to keep our resources as safe and fresh as they can be. Thanks for joining us today.

Wendy Weaver: Thank you for having me. I am happy to share all of this.

Justin Angle: Thanks for listening to A New Angle. We really appreciate it. And we're coming to you from Studio 49, a generous gift from UM Alums Michele and Loren Hansen.

Justin Angle: A New Angle is presented by First Security Bank, Blackfoot Communications and the University of Montana College of Business, with additional support from Consolidated Electrical Distributors, Drum Coffee and Montana Public Radio. Keely Larson is our producer. VTO, Jeff Amentt and John Wicks made our music. Editing by Nick Mott, Social Media by Aj Williams, and Jeff Meese is our master of All Things Sound. Thanks a lot, and see you next time.