Public Trust episode 3: Testing the Waters - transcript

[MUSIC PLAYING]

BONNIE

I'm Bonnie.

WILLISON:

RICHELLE

And I'm Richelle.

WILSON:

BONNIE

And today we're doing a crossover episode of The Water We Swim In and Public Trust. So Richelle, thanks for being here today. What is Public Trust?

RICHELLE

WILLISON:

WILSON:

So I'm a graduate student at the University of Wisconsin-Madison. And I also have experience in radio and in podcasting. And so when I went as a research fellow to Midwest Environmental Advocates, we really wanted to do a storytelling project. And we really wanted to tell community stories. We wanted to hear from people who are affected by the rollback of environmental protections in Wisconsin.

So as we were thinking through what kind of stories to tell, PFAS really emerged as the topic that we wanted to cover in season one. It's an emerging contaminant. And it's getting a lot more headlines lately and getting a lot more traction. And we wanted even more people to know about it and for policymakers and listeners to hear these stories and hear about the impact as opposed to maybe just the science or just the legal side of it. And the title Public Trust, referring to the public trust doctrine here in Wisconsin that guarantees that everyone has access to the beautiful natural resources that we have here.

BONNIE

WILLISON:

Yeah, and it's been really great to partner on this because at Sea Grant, we do a lot of the science behind emerging contaminants. And we're doing PFAS research and funding PFAS research. But it's been really great to go and actually speak to people who have been affected by this issue with you and feature some of those stories, even if they're kind of hard to hear.

So in the last few episodes of Public Trust, we've been to French Island. But today I'm going to tell you about a project that some of my coworkers are working on over here at Wisconsin, Sea Grant.

[MUSIC PLAYING]

The project starts with maple sap, the 11 Ojibwe tribes of the Great Lakes region, and PFAS.

PERSON 1:

Perfect.

PERSON 2:

Yeah, this weather can't make its mind up. It's crazy.

JONATHAN

No kidding. Tonight, again, it's supposed to be cold.

GILBERT:

PERSON 2:

Yeah. And then they're talking--

BONNIE
WILLISON:

So we are gathered in the woods on the Lac Courte Oreille reservation. It's in the Northwest corner of what we now call Wisconsin. We're surrounded by several feet of snow. It's technically spring, but it's super cold for spring. It's around 15 degrees.

REGGIE

: See those icicles there?

CADOTTE:

BONNIE

Yeah.

WILLISON:

REGGIE

I bet that's sap. Sap-cicles. Call them sap-cicles. I bet that's very sweet.

CADOTTE:

BONNIE

We were there to meet Reggie Cadotte on the land he uses to harvest maple sap.

WILLISON:

REGGIE CADOTTE:

So I've been teaching for about over 15 years. Native American studies faculty, cultural coordinator. I've got an Ojibwe culture this semester. Next semester I'll be doing Ojibwe I. I'll have a couple of culture classes and then a Native American literature.

BONNIE

He and Andy Bennett are tapping for maple sap here.

WILLISON:

REGGIE CADOTTE: 40-20 is a temperature range you got looking for. 40 degrees during the day, get that nice melt. And then 20 at night get that freeze, kind of starts that pump because then that water breaks. This is our Anishinaabe new year here when the water returns to the Earth. Life starts coming back, and we get that life through these trees. So--

BONNIE
WILLISON:

So I drove up to Lac Courte Oreille with my coworker Dr. Gavin Dehnert and grad student Eve Milusich. They're scientists who study PFAS. So Richelle, do you ever go somewhere driving around, and you think, there can't possibly be PFAS here?

RICHELLE:

After reporting this story, not really. I feel like it's everywhere. It's the horror story of the season. So my perspective is that it has long, long tentacles and has reached out everywhere. But I guess maybe you can get to some rural area with no agriculture and maybe hope that it hasn't made its way there.

BONNIE WILLISON: I feel that. But at the same time, I'm driving up, and it takes like four hours from Madison to drive up into the North Woods. You just-- you aren't seeing people. You aren't seeing industry. You're in the woods. And it's a beautiful place. And I'm just driving up, and I'm thinking we're going to sample for PFAS. But how would PFAS get here? How could it possibly get here?

RICHELLE:

Where would it even come from, right?

BONNIE

Right.

WILLISON:

RICHELLE:

No, I wonder that too. There's these places that you think of as being untouched.

BONNIE

Here's Dr. Gavin Dehnert.

WILLISON:

GAVIN
DEHNERT:

Today we are taking some sap samples for looking to see if they have some PFAS in it. So PFAS are per and polyfluoroalkyl substances. And this is a family of man made chemicals.

SUBJECT 2: Fas?

GAVIN Fas, P-F-A-S, yeah. Yeah, so the sap is pretty brand new.

DEHNERT:

BONNIE One of the people that was with us was Dr. Jonathan Gilbert. He is the biological services director for GLIFWC, the

WILLISON: Great Lakes Indian Fish and Wildlife Commission.

JONATHAN I've been working here for 39 years. So I feel really comfortable kind of working in Indian country, tribal

GILBERT: communities. But just the white guy from New York, that's what I tell people.

BONNIE My coworker Marie and I sat down to speak to Jonathan.

WILLISON:

MARIE: See you've got Pine Martens behind you, or no, American Martens, sorry.

JONATHAN [LAUGHS]

GILBERT:

Thank you. Good catch. Yes, little models we use for some research project or another. I don't-- I forget.

BONNIE The story of this research project doesn't start with sap or Martens. It starts with wolves.

WILLISON:

JONATHAN So what happened was that you remember the wolf season in February of 2021. Voluntarily, people surrendered their wolf remains. They volunteered these. And so we picked up some, 20 or so. And one of the things we looked at with those wolf remains was PFAS. And it came back about 40% of the wolves had detectable levels of PFAS.

Well, I got this report from the Department of Health maybe, who did the testing for me. And it was like complicated. And they had a lot of terms in there that I didn't understand. And then there were units that were-- I mean I studied Martens, right? That's what I do. I'm not by any means a PFAS expert. But I got all this stuff that had all this terminology and levels and stuff in it that I didn't understand what they meant. And so I was giving Gavin's name as a person who might be able to help explain some of that.

GAVIN So my name of the second second

GILBERT:

So my name is Gavin Dehnert. I am an emerging contaminant scientist with Wisconsin Sea Grant. John Gilbert had reached out to me saying that they had done a few samples of PFAS, particularly in Wolves. And kind of had reached out to say, could you help kind of walk me through kind of what some of these results mean. And so John and I spent about an hour, hour and a half, just going over like which different PFAS had hits, which ones we should be the most concerned about, and whether or not we need to be aware of the differences in concentrations as well.

JONATHAN We had a nice conversation

We had a nice conversation, and he explained all the things that all the questions I had answered, all my questions, educated me quite a bit on this. And I said, you know what, you should come because I'm going to have to present this to the Voigt task force as part of my responsibilities to them.

BONNIE

WILLISON:

The Voigt task force is made up of 10 of the 11 Ojibwe tribes of Wisconsin, Minnesota, and Michigan. And they meet every month to talk about resources, harvest, and treaty rights. What are treaty rights? Well, in the 1800s, Ojibwe tribes signed treaties with the United States government. In those treaties, they ceded, or sold, land in northern Michigan, Wisconsin and Minnesota, but retained the rights to hunt, fish and gather in these ceded territories. The Voigt Intertribal Task Force helps tribes fully exercise these treaty rights.

JONATHAN

GILBERT:

Intertribal coordination of harvests. That's their primary duty. Of course, harvest depends on healthy populations, and so they also concern themselves with the health of the populations, mercury levels in fish for example. I said you should come with me to that meeting, just in case there's like technical questions that I can't answer, you can be there to help answer those questions.

Yeah, actually Gavin came up, and he attended a Voigt Intertribal Task Force meeting with our tribal

KATHLEEN

SMITH: representatives.

BONNIE

Kathleen Smith was in the audience that day.

WILLISON:

KATHLEEN

[SPEAKING ANISHINAABEMOWIN]

SMITH:

So my English name is Kathleen Smith. I'm actually a product of the relocation program. My mother, who is from Red Lake, Minnesota. And my dad is actually from Keweenaw Bay Indian community, located up in Baraga, Michigan. So I'm actually an enrolled member of the Keweenaw Bay Indian community where my dad is from, located in the upper Peninsula of Michigan, and I was born in Red Lake, Minnesota where my mom is from.

BONNIE

Kathy also works for the Great Lakes Indian Fish and Wildlife Commission.

WILLISON:

KATHLEEN

SMITH:

My job title is actually in Ojibwemowin, *Manoomin Ganawandang*, which it translates to she who takes care of the wild rice. So a typical Voigt meeting will open with ceremony first. So we always have to at least put our thoughts and ideas, and utilize our natural medicines.

So we do a smudge, we have tobacco, which is lifted up in our pipes, and to acknowledge those our relatives that come sit with us and really help us cleanse our mind, body, and spirit, you know, beforehand. As we talk about our Natural Resources, to be able to come together in a space to really have great discussion going forward, and everybody's work, not only with wild rice, but fisheries as well, then we have our visitors come in and do their presentations. They do introductions with their work to bring awareness to certain subjects.

GAVIN
DEHNERT:

The first Voigt meeting was a really kind of an eye opening experience. I kind of showed up with a, I'd say about a 15 minute talk to just kind of lay the groundwork for like what PFAS are, what are the concerns about PFAS, why we should care about PFAS, and really like what is unknown about PFAS. And that last part about what is unknown is really what sparked a lot of the conversation.

So for the next, I don't an hour, hour and a half, maybe two hours, there was a lot of questions coming in about what we do know about PFAS, what we don't know about PFAS, just everybody was like well do I have PFAS in me right now, and then should I be concerned about the levels of PFAS in me.

JONATHAN

The tribes were asking about all kinds of things, you know. What about fish? What about wild rice?

GILBERT:

KATHLEEN

Wild rice was mentioned, which is manoomin; ogaa, which is the walleye.

SMITH:

GAVIN How much PFAS is in wild rice in the whole stock compared to just the rice itself, which foods is it suspected to be

DEHNERT:

in?

JONATHAN

What about maple syrup? What about all of these things, deer? What about all these things that they harvest on a regular basis?

GILBERT:

GAVIN DEHNERT: How is it really getting from our environment into humans themselves or into us? So there was a lot of questions that were put out there, and I caught myself saying we don't know yet a lot more often than we were able to kind of answer a lot of these questions, due to the fact of PFAS research is really kind of just starting out.

JONATHAN

Gavin kept saying, well, we don't know, we don't know, and which is true.

GILBERT:

GAVIN **DEHNERT:** So after leaving the first Voigt meeting, I kind of came back a little bit overwhelmed, not going to lie. There was a lot of questions of like we need to figure this out, we need to figure this out, we need to figure this out, and kind of came back with this helpless feeling of saying, like where do we even begin. And then about a half a month to a month later, there was a call for proposals from the USGS for research on PFAS.

This call came out, kind of reached back out to John, and I said there's this opportunity for us to write a research proposal that if it gets funded, we could start to do some of this research, that the Voigt task force proposed. So over the next month or so, we put together this proposal that was mainly focused on trying to answer those first questions that the Voigt task force had kind of come up with.

JONATHAN GILBERT:

He took what he heard from the task force, right? These are not scientists, right? These are hunters and fishermen for the most part. And so they said things in the way they say things and expressed their concern. Well, he took what he heard there and he wrote up this grand proposal to test the waters in rice lakes and in Walleye lakes and to test the sap of maple trees.

Why did he choose those things? Well, that's exactly what the tribes were telling him they were really concerned about.

BONNIE WILLISON: Back at Lac Courte Oreille, we started walking back into the woods. In the woods, I could see a lot of blue bags that were kind of hanging on the trees. They're there to collect the maple sap. And maple sap is one of the harvestable goods that Gavin's team will be testing for PFAS.

GAVIN DEHNERT: One day as you come out here and those bags are just bursting, man. Sometimes you even got to do two a day.

JONATHAN GILBERT:

Ziinzibaakwadwaaboo. Sugar water, sap. [OJIBWE SPEECH] told us the origin story of how it all started. You know how that sap used to come out pure syrup, and then our great uncle thought that'd be too easy for us and didn't want to get lazy, he wanted to make sure we worked hard and all that kind of stuff, so he diluted it. So that's why we have to work so hard gathering wood, getting prepared, making the spiles, the baskets to collect, and all that kind of stuff, getting prepared for the boil to keep us busy and working doing that good stuff.

BONNIE

Here's Kathleen Smith.

WILLISON:

KATHLEEN

SMITH:

Our tribal communities. Well, we really depend on, especially the maple syrup. I have a lot of friends that harvest maple syrup as well. So that's one of our first medicines that really awaken from our long time winter because all of our medicines, they need to know rest. So when it comes awake, and that first medicine starts flowing, of course, there's going to be a great concern with PFAS because you don't know how it's going to impact the maple sap as well.

BONNIE

WILLISON:

So the plan that day was for Gavin and Eve to pour some sap into these jars that they brought in order to take it back and test it for PFAS.

GAVIN

So for the actual sample, it's very simple. Put the gloves on, dip it in, collect it, and that's it.

DEHNERT:

EVE MILUSICH: And then we will test the field blank sample to just confirm that there's no PFAS in the bag or the spout. I'll just shake this in here a little bit. So then I will label this and send it back to the lab.

BONNIE

WILLISON:

So at this point, the team has started sending the samples out for testing. But the project, which is funded by the US Geological Survey, spans from 2023-2026. So the results, unfortunately, won't be available for a while. Kathy Smith will play a big role in this project as the team starts to look at wild rice or manoomin. So I sat down with her to talk about her perspective on PFAS and the rice. When we talked, she had just gotten back from being out on the water.

KATHLEEN SMITH:

So I was able to go out on a landscape just the other day here on Bad River Reservation. I actually went down the Kakagon to kind of check out the rice. I was able to walk into the water and put my hand into the sediment because, man, it's beautiful to smell the rice, to feel the rice and the root system. It's just so thick, when you put your hand into, it that's really, really learn to sit with the medicines. You learn a lot.

Gavin did reach out to me and asked me some questions about manoomin, about wild rice, the ecology of the plant, the depth of the root system, for example, to help with the planning stages of the proposal with PFAS. He talked about it being a forever chemical. So it really kind of, boy, when you hear about it it's like, what the heck is going on here. What's with our rice. And then you start thinking about our other treaty resources as well.

So that was one of my concerns being an avid harvester and gatherer, how does it impact the rest of our beautiful gifts that we have, and really depend on for our food system.

So what we have is like, in our culture, it's the four orders of creation. So our four orders, and when the great mystery, or gichi-manidoo, you know, through our creation stories. So the first order is actually the elements, which is the soil, the water, the sun. So those are really important.

The second order is the *mashkiki*, which is our plants, where wild rice is a part of that second order. So wild rice, for example, it really depends on those natural elements of the first order. Then we have the third order of creation, which is the animals, the ogaa the fish, with the muskie, and the walleye are in that third order, where that order depends on the second order, which is our plants for foods, and then also the animals depend on those natural environments, which is water is a big part of that.

For the fourth order of creation is humans. That's where we come in as Anishinaabe as well. So we depend on the animals, which is in the third order, for clothing, for tools, for food, for sustaining our way of life. And so we also depend on the second order, where wild rice, the natural plants and our medicines. So we depend on that as well, and also the first order where we depend on everything, all the elements of the first order, where all the other three orders, the first, second, and third, do not depend on humans, and humans actually depend on those three orders as well.

So you could see how nibi really intertwines that life giving gift of nibi. Without water we wouldn't be here as a human species.

BONNIE
WILLISON:

So we're going to get into the rest of the sciencey part of the research that they're doing. But when I actually stopped to think about what Kathy told me, I realized that the PFAS project that Gavin is doing is actually looking at these orders as well. So starting with the first order which includes water and soil.

GAVIN DEHNERT: So our first goal, or the first aim of the proposal is to sample different water bodies that range anywhere from Northern Minnesota, through the northern Wisconsin area, and then even into the Upper Peninsula in Michigan. PFAS research is not cheap, and we can't sample all 1,500 lakes. We're going to have to pick and choose.

What we're going to do is go out and actually sample all of these lakes, sample the water concentrations for PFAS, and see what different PFAS we find in each of these lakes, and what concentrations we find in these lakes, and really like are there lakes that are more heavily contaminated or lakes that are less heavily contaminated.

BONNIE

GAVIN

The second order is plants, which is closely tied to the third order, animals.

WILLISON:

DEHNERT:

Once we kind of learn about which lakes potentially are more or less contaminated, our goal is to then understand how PFAS is moving from the water and the sediment, into wild rice, into the walleye or muskie or different fish species.

BONNIE

There is one other animal that they're going to look at for this study, tree swallows.

WILLISON:

Aim three of the grant is really looking at tree swallow immune function, and health in the ceded territories.

CORNELIUS

RUHS:

EMILY

BONNIE One of the partners on the bird side of this project is Dr. Emily Cornelius Ruhs, a researcher at the Field Museum

WILLISON: in Chicago.

EMILY CORNELIUS

RUHS:

And so that's kind of where I came in is what can we look at in the tree swallows to understand how they're kind of coping with these contaminants, and how healthy they are in the ecosystems that we're interested in.

GAVIN
DEHNERT:

The birds were kind of thrown into this in the tree swallow work to start to understand a little bit of health impacts, or some of the immune impacts. A lot of the tribal questions were what are the impacts on humans, right? What is PFAS going to do to us? Are we seeing a decrease in health conditions, like what should we really be concerned about?

Rather than doing research directly on humans, we can use some of these other species out there to start to get an idea of maybe what are some things that we should be looking for. And so we already know that PFAS has the ability to decrease the antibody response, meaning, potentially more susceptible to diseases and everything. And so our goal is to use these tree swallows, and doing some immune function, and health responses on them, and that can start to answer some of these human impacts.

BONNIE WILLISON: Humans. As Kathy told us, humans are the fourth order of creation. An order that depends on every other. The water, soil, plants, and animals.

KATHLEEN SMITH: So my biggest concern is with the knowledge about PFAS, as they call it the forever chemical. There's so little known in how it affects our food systems, and the impact it has on our humans. So I feel that many tribal communities will not harvest the beautiful gifts that we have. Wild rice, you know, is our main concern as our teachings say if we do not use the wild rice, it might go away and not feel appreciated.

I believe that we have to be a little bit more sensitive on how we present it, and to do it in a good way, to bring up these thoughts and concerns and ideas, and, mainly, just to help educate tribal communities as well because we do not want to [? discern?] our people. We want them to continue to exercise their hunting, fishing, and gathering rights. I'm just hoping that we get some answers with this research, and to be able to go forward in our work in how we can really tread lightly on the land as humans.

JONATHAN
GILBERT:

It's a really nice example of tribally driven research that's important and helps fill a void, but it's coming not from academia or us scientist types. There are not many researchers that I'm experienced with that can take that kind of input, and turn it into a scientifically sound research proposal. So good for Gavin too is what I say. Got to give him a lot of credit.

I didn't do much. I just brought people together, right? That was what I did. I feel good about it. I work really hard with lots of professors, and do lots of projects with universities, and people have all different kinds of motivations, right? And they're all different reasons why they want to work with us, but this was a unique example, I think, definitely.

GAVIN
DEHNERT:

First, I mean, it's been a pleasure to work with John. He kind of jokes about half of what he was able to do is just bring people together, and I would make the argument I kind of did the same thing. It really is kind of a team effort where we've brought a lot of really good people in to kind of work together. I like to kind of pride myself on saying, yes, there is always something that I am extra interested in, but if that can't be applied to anything else, what good is it really doing?

So my goal as a researcher, as I kind of continue on is to take what people want to know and what people want to learn about, and incorporate that as much as you possibly can into your research so it can go further than just into a journal article. We want to kind of create this research that, I guess, means something to more than just the academic world.

BONNIE WILLISON:

So as I was doing interviews for this story, talking to scientists, I kept hearing from everyone that this is such a unique project. This is such a unique approach to science because of how it is driven by the tribal communities. This is a unique approach. I wish it wasn't. But I also started asking why? Why is this such a unique approach in science, in academia.

RICHELLE WILSON:

No, it's true. It is unique, and the truth is that the structure of academia is really designed to continue replicating the way things have always been. And so when you get on the academic track as a professional, your CV, which is like an academic resume, needs to look a certain way, and you need to have a certain number of high impact publications, and you need to maybe have worked in a certain lab. And so there's all these things that you're doing to prove yourself as you step into this profession.

And I think there are a lot of younger researchers who are like hungry and eager for things to be different, but they might not get a job by being too different. And so, in a lot of ways, the structure of academia kind of keeps people following these traditions, and doing things the way that they've always been done, and people sort of getting credit for those high profile publications that Gavin's talking about. But in the end, that readership is so small compared to the state of Wisconsin, and all of the people that we're trying to impact with the things that we do at the University.

So I think that part of it is just trying to kind of change the game about what it means to be an academic researcher so that when you reach out into the community that is rewarded within the profession, and that you get the resources that you need to do something like that.

BONNIE WILLISON:

Yeah. And not only that, but academia doesn't have a great history of working with communities, of working with tribal communities. A lot of harm has been done there with-- I mean, first of all, universities are sitting on land that was taken from indigenous people and sold to create a University institution.

RICHELLE WILSON:

: I think that's a huge part of the story because the entire construction of knowledge in the Western world is colonial, and it has the colonizing impulse. And science, absolutely has that, as well as other disciplines.

BONNIE WILLISON:

Emily Cornelius Ruhs, she's the bird scientist from the Field Museum, said it well too.

EMILY CORNELIUS RUHS:

I think ecological and biological research has this background rooted in colonialism, and has had some aspects of parachute science, where you go into an area, and you extract either resources or knowledge, and then you leave without providing them any sort of resources back or giving them ownership over what you've learned by working in the areas that you're working in. I guess just my hope is that moving forward, things start to change, and people start to work together and provide kind of authorship and ownership over some of the things that they do together.

I think that'll be really important. And I think that's really important in this project as well.

BONNIE

Here's Jonathan Gilbert again.

WILLISON:

JONATHAN
GILBERT:

You know, I deal with this a fair amount with this task force. We're always coming to them with issues, problems. Oh, you got mercury in your fish. Oh, you got PFAS in your deer. Oh, you know, you got this thing, or this chemical, or this contaminant, and they just get worried sometimes that all of this is going to lead to people no longer wanting to hunt, or trap, or fish, or whatever - consume these really, generally, pretty healthy things. And, you know, that is just like some state coming in and taking your rights away. It's the same thing. If the food is contaminated, or even if not contaminated, but there's a perception that it's unsafe, I'm not going to feed my kids that fish if there's mercury in it. If there's that perception out there, then that's almost as bad.

And so PFAS, what are the health effects? And it's like everywhere anyhow. So we already got it. I mean, we all probably have PFAS in our bodies already. I'm pretty sure. It's probably in most of our food that we buy in the grocery store. Well, we're not going to stop doing that. So how much is too much and too bad, and those are really, really hard guestions to answer.

And yet, I don't want people to stop hunting and fishing because they're afraid there might be PFAS in the fish or deer. But I think there's just so much unknown about this at this point. People are frightened. I hear that from these tribes, you know, at the task force. They're concerned about that. They don't know what to make of it. Some them is, oh, it's the forever chemical. You can never get rid of it. It causes cancer and all of this, and it-people tend to get really concerned when they hear things like that.

I'm concerned too, but I don't want people to be alarmist. That's the thing. Walleye is good for you, generally. Venison is good for you, wild rice certainly. And your tablespoon of maple syrup every day is probably really good for you.

RICHELLE WILSON:

It's interesting to hear what John just said there because it's a question that we have as communication professionals all the time is like we want to share these stories. How do you get the information out there without just leaving people living in fear.

BONNIE WILLISON: Mhm. Yeah. And I have some fear. I am worried about the results of this project. What are we going to find? And I asked Kathy if she is nervous about this.

KATHLEEN SMITH: So we always have that balance in our culture, the good with the bad. So we try to stay in the middle. We don't try to lean too much in the good or try to lean too much into the bad, but try to stay down the middle with this potential project as well. So what PFAS, that's all it wants to do is just live. So it really just wants to be out there, and just live, and be in our environment because that's what we put there, right?

So with sickness it just wants to live. It doesn't know death. It doesn't know any other thing, you know. So it just wants to be in the natural environment where it really thrives, right? And we don't know what's coming next. We really don't. There could be another forever chemical out there that really could impact the natural environment.

And the sickness, it's only a doorway for what's to come if we do not take care of the natural environment, or to really cut down on utilizing PFAS, which is on our paper plates. It's in the through the drive through for getting fast food. It's on the paper items there as well. It's in rain gear. It's a lot of things.

So what we could do is kind of go back to using our natural, you know, wools or natural fibers. So for example for water, well, we could say no to plastic. So we could say no to PFAS as well, which really could be helpful for the natural environment, and start coming up with thoughts and ideas or new carriers for our food. Use the natural products that we do have to really have a less impact on our natural environment and ecosystems.

BONNIE WILLISON:

Public Trust is a podcast for Midwest Environmental Advocates and Wisconsin Sea Grant. This episode was written and edited by Bonnie Willison and hosted with Richelle Wilson. Original music by Josh Wilson. Visual design by Ryan Stasiewicz. Special thanks to our guests for this episode Gavin Dehert, Jonathan Gilbert, Kathleen Smith, Reggie Cadotte, and Emily Cornelius Ruhs.

You can learn more about PFAS at midwestadvocates.org and seagrant.wisc.edu.