

Intro Music (00:00)

Ashar Mobeen (he/him) (00:18)

All right, it is Thursday, August 1st, 2024. Today we are joined by the amazing Dr. Geneviève Metson, an associate professor at the Department of Geography and Environment at Western University. Dr. Metson's work focuses on how we can better manage nutrients in diverse socio-ecological contexts. Thank you so much for joining us today, Dr. Metson. It's a pleasure to have you.

Geneviève Metson (00:40)

My pleasure.

Ashar Mobeen (00:41)

So you're involved in some very interesting work. Can you tell us more about yourself and your current role?

Geneviève Metson (00:48)

Yeah, sure. So I'm kind of new to Western. I've been here for one year. And before this, I was a professor in Sweden for the previous six. So new to here, but I'm French Canadian. And before I was an academic, I was actually in professional ballet school. So I have a little bit of a weird journey kind of into the sciences. But it's all the work that I have done and I continue to do is very grounded kind of in sustainability and wanting to use data and people's understandings of systems in order to better manage natural resources. So that's kind of the path that I've taken and all my work kind of centers around that, but uses very different methods to kind of get to those questions, whether they be artistic or collecting water samples, doing numerical models, or just interviewing people.

Ashar Mobeen (he/him) (01:40)

Wow, that is such an interesting background. What led you to eventually focus on soil, earth, and the nutrients in your work?

Geneviève Metson (01:50)

Yeah, so a lot of my work centers around one nutrient, phosphorus. It's not the only one I look at, but it's my favorite one. So phosphorus is an essential plant nutrient, but it's also essential for basically all forms of life. So it's the backbone of our DNA, it's in our bones, it's in the cell membranes that we have. So all organic material requires this particular nutrient. So there's all these really interesting issues around how we access this nutrient.

When we use fertilizers, we're often using them from a geopolitically concentrated mind resource. So there's geopolitics, there's just issues of physical economic access. But then maybe if we're in Southern Ontario, where we are, we're more familiar with phosphorus not just as a nutrient for plants, but actually the negative effects of when we poorly manage the resource. So when we have too much nutrients like phosphorus or nitrogen in our waterways,

algae, just like our corn in the fields, they really like these nutrients and then they grow a lot and we have these cyanobacterial blooms that can be directly toxic. And even when they're not directly toxic, the decomposition process that occurs basically requires oxygen and we get what we call these dead zones. So phosphorus is really interesting because we have kind of a scarcity and an overabundance problem at the same time.

And so I really like this element basically as a lens to look at issues of food security, of water quality, of urban ecological spaces. So there's an interesting thing with the element, but it's also like a portal into measuring and understanding more complex systems. And so I'm particularly interested in urban systems because they focus the resource because that's where people are is where demand is, right?

So they basically have this impact on our landscape. But then we also concentrate what we're consuming. So all the food that we eat contains phosphorus. Everything we poop out, that's also nutrients. So we have this kind of concentrated demand and waste production, which can be a problem, right? It can mean that we're kind of these hot spots of pollution potentially, but it also means we could be hot spots of sustainable management. So recovering these organic streams, processing them and then sending them back to agricultural lands to support our own requirements. So that's kind of how I came to it was really as a lens. And I think the reason that's a lens that spoke to me was actually my undergraduate background was not kind of in this contemporary stuff. I actually did like earth science and paleo oceanography. So it was really around like long time scales, isotopes, how are we... how is like environmental change operating on a really large time scale without humans? But I was really motivated, I think emotionally, personally, by like, are we transforming our landscapes? And the idea of focusing on a nutrient or a specific element really carried kind of that weight of something that's on Earth that can't be destroyed, right? But it's moving around in our impact and how we're kind of accelerating where things are going and changing it was like a lens that really worked for me with my background and allowed me to open up to more contemporary spaces and then thinking about future scenarios and climate change, but with this long-term perspective through biogeochemistry.

Ashar Mobeen (he/him) (05:24)

I want to sit with the dance background. How does that inform if, does it inform your work in some ways?

Geneviève Metson (05:31)

Yeah, I think it so the way that I've I've thought a lot about like, why as a dancer, would I go into academia first, right, and then the specific work that I do. And for me, I found that they're very similar when you're at high levels. So you're really in a space where you spend a lot of time learning a vocabulary that's common, that's been well studied, that's very consistent. And then when you get to a high enough level, you're basically asked to innovate. How do I use that vocabulary to make a small indentation and kind of explore a space and maybe have a new discovery? So that happens in dance and I think in most arts, and that's very much what to me happens in academia. So that's always motivated me. It's about creativity, but really like paying

respect to that legacy. And I think like this idea that I really care about movement also probably informs why I care about nutrients and this idea of like, how is it moving through space? How is it moving through time? How is it moving through people speaks to me. I would say more recently that dance and that artistic background, because I've always been quite interested in doing like art-science collaborations. And I've done that myself with dance with friends and colleagues, but also with other visual artists where I'm just the... my only role is as the scientist. And I think we might talk about one example of that a little bit later.

I think my thinking about how dance or arts and science come together, it's not just process based. I've also been feeling it's actually very similar in in our objective, which is often to make people pay attention to something that they might care about, but is invisible. So I was recently in Montreal, and there was like a Georgia O'Keefe exhibit. And there was a quote from her that was something like, "People in a city don't pay attention to flowers, and I want them, I want to give them the gift basically of having to pay attention to that flower". And I thought that's so similar to what we do in academia, right? Like even if you're in the medical sciences or anything, it's this idea of bringing attention to something very important that's instrumentally linked to all these other things that you care about. So I think that's, that's in my more contemporary work, I've been finding more similarities with objectives and also a lot of artists working on the Anthropocene, right? And the impact we're having on the earth and that we can't just connect with that on an intellectual level, it's on an emotional level as well. But we're still trying to do the same thing, which is to pay attention and to ask questions and get people to engage. So yeah, that's how I think my dance background keeps coming up.

Ashar Mobeen (he/him) (08:09)

Yeah, no, thank you so much for sharing. That's such a wonderful way of looking at it. And you've, you explain it so beautifully. I do want to hone in more on that endeavor of interdisciplinary collaborations. I know in a lot of your projects, you work with scientists, gardeners, and as you mentioned, you also have artistic engagement. Well, we'll share some links to your projects later in our show. Could you give us more of an overview of one particular project that we're particularly interested in, it's called "Digging into Nutrients via Urban Agriculture". It was a very interesting sort of collaboration and we were wondering if you could talk more about how that came together and what the goals were and just a general overview of the project.

Geneviève Metson (08:49)

Yeah, absolutely. one of the systems that I, I guess I have a lot of different projects, but I spend a lot of time thinking about and if we were going to say I'm quote-unquote famous for anything, it's going to be this one thing, which is looking at urban agriculture as a type of, of green infrastructure, right? That's very viewed as being very positive, right? Because it has all these co-benefits. We can produce food, we can engage with community, we're engaging with the land differently. And as an environmental scientist, I also sometimes look at these things where there's these really broad positive statements. And I say like, hmm, is that really supported under what context is that true? And I have this lens with these nutrients, right? And I said, those are really essential elements for food production. So that means that they're also essential

for urban agriculture, but urban agricultural practitioners or gardeners, they're not usually trained farmers. Some of them are very good at what they do, right? But it's a different mindset.

And I'm like, okay, you're doing this in a really small space. I know from a hydrology perspective, cities are very different because we have all these impervious surfaces, which means things are cycling and getting lost in different ways. I was like, I don't think we have a lot of information on the nutrient cycling of these spaces. So that's been driving my part of my work since my PhD. When I was in Sweden, I got some funding to kind of like, extrapolate that project a little bit more, and to try to actually measure what's going on in gardens, which is very difficult because in an urban space - and gardeners, there's a lot of variability, right? You don't have one field that's 100 acres of like, we're doing corn and we can sample a little bit. It's like within one square meter, you have four people doing completely different things. So we installed what we call these, they're lysimeters.

So they're basically like water bottles that you put underneath the earth to collect water as it's going through to try to see, what might be going away in the water. And then we would interview these gardeners and ask them, what do you do every year? And take pictures of their soil and take soil sampling. What I was really interested in is how is this varying over time and space? So we did this project for three years.

And so this requires - it's very difficult to do also to engage gardeners for a long period of time. They're kind of like sick of it after one year, but some people stuck with us. So we're doing all this monitoring, we're working with gardeners, we're doing a lot of outreach to both explain why are we collecting data and what might be able to say about it. And one day, one gardener that we hadn't worked with, but had seen a lot of this like media and like outreach stuff came to me she said, you know, I'm a gardener and I'm an artist and I would love to better understand your results." And I was like, that's fantastic. Let's definitely have a meeting. And so this particular artist, she does a lot of stitching work, but also like colours and textiles where she really tries to do only recycled materials. And all pigments are actually from her garden that are in the city that we're studying. So her approach to two things was really like fitting with the project, not just that she was interested in knowing more.

And so as we did this monitoring, this artist, Elizabeth, kind of came in and we had a series of meetings where we discussed kind of what did we find, what was speaking to her as a gardener, as an artist, and then I would go back and like pull different results and I made these graphs. And then we decided that together we really wanted to create an exhibit where the results of the study would be there, but we wanted people to be able to engage with those results and the idea of nutrients in a garden, kind of in a more emotional way.

So Elizabeth kind of came up with these mockups. And at the beginning of that process, the mockups were very much like, I'm going to translate what you've done. But as that process emerged, it was less about translating a one-on-one, and more about what are the feelings that come up about these results? And how do I integrate that more holistically? So for instance, some of our results are around how soils in the areas we were working on already had a lot of

phosphorus, so we probably didn't have to add more. And that for her was more around, "Oh I feel guilty that maybe I'm adding too much," but I'm also hopeful that actually that legacy can help us. It's a very different kind of experience. And she did all these really beautiful stitches that are like from a Japanese style with all these recycled materials.

Or another example is that we found that a lot of losses in the garden were happening during the winter, which is a time when gardeners are often not thinking about what's going on in their plot, because they're not there, right? They're not actively managing. And so this for her brought up this interest in this idea of like, why is the soil bare, right? I wouldn't want to be bare in the winter. And so she developed a series of quilts that were both on the wall and then also that would cover like a raised bed.

So this idea of like kind of engaging with why is it there? What do we cover it with? How are we taking care of that soil? So this kind of emerged and then we made a booklet, which I think you'll link to, that was kind of like our, you can leave with it after the show. And then we had an exhibit at a couple of different venues and it's actually going to change venues in the fall to do another one again. And then there, there's all the art artist pieces and then usually at the openings, like I'll give a talk and then I have another collaborator to explain stuff. And then we also have the graphs. And then we also have like videos of the types of work that we do. So people can see how we're going into the gardens. What are the main tips that we would have? So it's more, it's not about having one output, right? And it's not about beautifying results. It's really about engaging with the process differently. And it's been really fantastic. And I feel so lucky that Elizabeth kind of saw that and then was like really willing to work deeply with us on this.

Ashar Mobeen (he/him) (14:44)

Wow, so would you say that artistic engagement is the main vessel through which you distill your results? One thing I'm really curious about is do these results somehow influence public policy? Do you work with maybe provincial, federal governments to kind of work on different policies and methods?

Geneviève Metson (15:05)

Yeah, so I know I don't think that artistic engagement is like the what I like, let's be honest, as an academic, my main output is usually academic papers. But I think like, in the scale of people who do things with engagement, I do care a lot. So like, I will go I'll do media stuff. I'll like create reports for people I'll do art. And I find them often... Yeah, more... And they're more fun. And I think like they have a bigger impact in terms of like policy relevance and stuff. That's obviously part of where I want my work to go, but it's very delicate. And I think we shouldn't be really cavalier with that. When you're, you know, let's say I studied 10 gardens and I really, can I really tell a policymaker exactly what they should do? No, there's a lot of other considerations, but I do in many of my projects will have some kind of link to government people.

And we're at least starting a conversation on what that would mean. And I've never been in a position where I've said like, you need to put like a limit on these gardens, et cetera, right? Rather what I think my work has been demonstrating is that people who are practicing urban

agriculture really crave freedom, but also they want to do the right thing. Most people actually want to be really environmentally sustainable and they don't always have the support that they need in order to make those decisions.

So I would say it's more about investing in support structures that will permit them to have enough information to make good decisions. The other thing that I'm investing in, and now that I'm in London, hopefully in a longer term relationship, it's about, yes, giving advice, but a lot of it's also changing our relationship to who has data. So this idea of like, we can experiment together and I can assist in like, how do we monitor this stuff? But I might not be able to tell you, "in this specific location, this is the best way to grow a cucumber." I'm not an agronomist, but from a nutrient perspective, I might say, from the results we're seeing, it looks like maybe we could see the same yields, maybe less losses if we did this practice. How do you feel about putting in a test in part of your garden? Let's see if it works for you. And I think empowering people to experiment, but also keep information so you can make an informed decision as you experiment.

And there's some things that are happening at larger kind of spatial scales and people can measure and that can be really helpful to either have a researcher with you or someone at the city kind of shepherding that data management and having more iterative policymaking. So I think access to information and honestly, I don't think it's just like a booklet, right? This is more about extension work and working with people.

And I think being really mindful from a city level. And again, I can't tell you in London what this would mean. I don't have enough data for this. This idea that even if something maybe doesn't have a large impact, because right now it's small scale, if you have policies to increase areas or increase intensity, you might then see potentially negative side effects, even if you have lots of benefits with social cohesion and food, et cetera. So then we want to look for opportunities where if you want that vision, what are ways we can decrease some of the negative trade-offs which might just occur. So having that foresight, and I think it's not about like, think as scientists like prescribing, but more working with communities and with government to see what we can do to support environmentally sustainable, socially sustainable and just practices, I kind of in urban, urban infrastructure, whether that be green infrastructure, gray infrastructure, and surrounding peri-urban farmland.

Ashar Mobeen (he/him) (18:52)

Yeah, thank you so much for explaining that. In terms of when it comes to academic papers, I did spend some time with some of your publications and I know your projects span both local and international contexts. I know you've worked in Montreal, Minneapolis, Oregon. You've even had a co-authored publication of work going on in Pakistan. I know you were in Lundshupen, Sweden the last couple of years. One thing I'm interested to know is have you seen sort of commonalities when you're talking about results and sort of this approach and having an open mind?

And we're talking about policies, have you seen, one thing that really stood out to me in your previous response was this idea that cities are different. That's very true. And so is the sort of geological landscape, but have you been able to sort of pinpoint any sort of commonalities in those studies or something that's really stood out to you? If you could maybe talk a little bit more about that.

Geneviève Metson (19:42)

Sure. So when I was in Lundshupen, I had a student do a literature review on kind of urban agriculture and everything we knew about nutrient inputs and like water quality. And what we found is that in general, people tend to apply a lot more nutrients than what a crop probably can take up in a year.

Now, I want to be really careful in saying that doesn't always result in negative environmental impacts. Sometimes it's because they're actually focusing on organic inputs, which from one perspective are more sustainable. We're looking at circularity, but the ratio of nutrients in an organic material will not match a plant as well as if we use something that's been designed to match that ratio. You can have, know, basically what often happens is too much phosphorus in order to meet nitrogen requirements. This is a really common problem.

So we're seeing a lot - I'm not going to say too much - but likely from a yearly perspective, potentially too much, potentially imbalances, so you're not getting high yields even though you're applying more. And that comes with a potential risk of water quality impacts. It doesn't mean it's happening, but you're putting yourself in a more risky situation. So we've seen that kind of across the board. The reasons for the imbalances though are different across cities.

What we also found is that cities that had more data were cities that had higher averages. So it's not that... we don't think that the high averages are incorrect. Actually, the cities with the best data are the ones that show the most application. But there's also so much diversity. So in any city I've worked in, you have lots of people that are applying nothing as well, right? And that's the diversity that's very difficult to manage and makes it extremely difficult to even give tips to a gardener because people are not doing the same thing.

The other thing that we found kind of across the board is that people aren't really measuring water quality with this particular green infrastructure in mind. There's very few studies that are monitoring and measuring. And if they do, they're not doing it, you know, year round or for long periods of time. And there's a lot of like, logistical and also science reasons why that's not happening. But that's a gap that I'm really interested in filling and kind of the direction of my work also that I'm quite interested in is how are these types of spaces and nutrient cycling kind of contributing to and adapting to climate change as we see more kind of extreme droughts and extreme floods that has implications for nutrients and growing foods in cities. I don't want to say more than rural environments. I just think the challenges are different. But because we have a lot of impervious surface and usually higher temperatures in cities, they're a bit of a microcosm of more extreme things which means that if we learn from these, what the impacts that are

already happening with climate change here, there might be lessons to be applied kind of in rural spaces and spaces that are not as extreme. So yeah, that's kind of the commonality.

And I would say... yeah, but the devil's in the details once you start to want to make a change. But I think the patterns are quite robust. And that's also true in some of my work at other scales when we're looking at nutrient recycling between areas where there's a lot of livestock, and then where there's a lot of crops and there's challenges because transport is very expensive. All of that's like, that happens everywhere. But then we're specifically, how would you change your landscape configuration? Or where would you put a biogas plant to better recycle?

That's where the devil's in the details and you really have to dig in with people locally.

Ashar Mobeen (he/him) (23:14)

And okay, so let's talk about your current work this summer. We know that you're working closely with local gardeners and students in London, particularly students from Western Ontario. Can you tell us more about this project and how it connects to broader global sustainability issues? And one thing we're also interested in knowing is how that connects to Western University's own mandate and push towards a more sustainable greener campus as well.

Geneviève Metson (23:39)

Sure, yeah, so this summer I've had two really fantastic undergraduate students working with me, basically collecting base data about London. So the base data is basically like, what are gardeners currently doing, where are they doing it, And what do our soils look like? So they've been going all over the city. We're almost at 100 interviews with gardeners to basically quantify their inputs, look at their motivations for gardening, their experiences, their concerns.

And then we've been taking soil samples at NGO farms as well as in community gardens to kind of see what are the levels like. So that will result in like some nice reports for people and just kind of understanding we can compare that to Minneapolis or Montreal or Sweden or other places I've worked. Hopefully what will then happen is next year of all those sites, we can find sites that are either outliers or representatives and we're going to start monitoring kind of that water quality bit.

At the same time, if I get the proper funding, what we're also going to do is set up a living lab on campus. So we already have a community garden space, and I've been in contact with facilities management and the sustainability office. And hopefully, if everything goes to plan, we're going to kind of expand that community garden into an area where we're going to be able to put more like high tech equipment that I would never be able to go put in gardens.

What I love about working with gardeners is that you're really seeing real world variability, right? You're not in a lab. This is what actually is happening, but there's also a lot of challenges with that. So I want to pair the in garden work with something a little bit more controlled. So in that case, what we're going to be able to do is we're going to be able to measure the water and the nutrients in the water as it goes down in the soil, much deeper than I can do in a garden, as well

as runoff and erosion. So the losses that might be happening kind of on top of the surface and trying to partition out what's going on there.

Also having like a weather monitoring station and then we can like measure yields. But we'll give that space to community gardeners. So people will be actually eating the food and it will still be kind of part of that garden. So that's a little bit the vision. And the reason I'm quite interested in having a campus space is some of that is for the control.

The second reason is that I'm quite interested in winter monitoring, which I did do in Sweden, but it's difficult to do, and especially if it's far. But the reason for that, as I was discussing earlier, is that in Sweden, we found that actually a lot of losses were happening in the winter. And this didn't used to be a thing, right? Because we'd have just frozen soil. But as the climate is changing, we're seeing a lot more freeze thaw events and rain on snow events.

And that really changes kind of what's going on on top and within the soils. And there's more opportunities for loss and the management strategies for that would be different. So having something close to campus where I can send students is amazing. And we can kind of monitor it all year for a longer period of time. So the winter is the second reason. And the third reason is an educational space, right? That means that I can also bring students out and I can have them test something. I can show them how it's monitored as part of my classes.

We'll hopefully be able to collaborate with other departments as well. So for instance, there's people working on biochar or other amendments, maybe in engineering, they're like, "hey, we'd love to have a test plot and you monitor that, we may be monitoring soil organisms, or we can measure greenhouse gases," right? Things that are different, but we can add onto. So I hope it'll be a hub to kind of collaborate with organizations on campus that care about sustainable food, green spaces, but then also other academics who are concerned with other fluxes and flows and interests that we can come together in a space that's close by, convenient and well monitored.

Ashar Mobeen (he/him) (27:28)

Wow, that sounds like something out of a movie. a graduate student myself, who's always looking to get involved in different projects, I wish you all the best. And yeah, I'm really excited to see how it comes across, because I assume it's a multi -year project, right? This is going to be something.

Geneviève Metson (27:42)

It is yeah. And the other thing I would say that I've learned over the years, I'm like a very gung-ho person and I want to kind of jump in, but often you need to take it a little bit slower. So I have these ideas, some of them are tested, but you know what, let's not rush this. Let's do it one year at a time, build relationships. We can take a little bit more time and that's not inaction. I think that's something I've also been learning is slowness doesn't mean that we're not acting and we're not responding to environmental threat.

We are a little bit, there's some things we need to do now, but to me, the role of scientists is as we, don't want to be paralyzed. We want to be in action, but we also want to be monitoring and then course correcting those actions. And that's kind of how I want to run this interdisciplinary project with the living lab and then the gardeners. And I don't know, hopefully the arts will get involved eventually as well. And we're all just going to be doing stuff together and it'll be fun.

Ashar Mobeen (he/him) (28:37)

I do want to unpack what you just said there in terms of paralysis and climate threat. You mentioned challenges to these projects. One thing you talked about was the winter months. I want to talk more about, so nutrients themselves are linked to the natural processes on the earth and inextricably linked to cosmic processes. And I want to get your thoughts on how climate change might be affecting the work that you're doing? Are you seeing more challenges in terms of data collection or maybe unexpected outcomes and results?

Geneviève Metson (29:10)

Yeah, that's always a really hard one, right? Because the climate is always changing and it's changing faster and faster. So how do you decide what is before and after climate change can be a little bit challenging. But I can talk to you theoretically about the ways that both nutrients are affecting climate change and climate change is affecting nutrients. So a really good example of this and how it's affecting nutrients, sorry, how nutrients are affecting climate change is that as we have, for instance, more biological production in lakes, they have these algal blooms. Actually, that tends to create more methane emissions, which then are actually contributing to climate change. So the issue of eutrophication or adding more nutrients than normal can actually contribute to climate change. Now, the other way around where climate change, regardless of its sources of greenhouse gas emissions, are affecting climate change, there's multiple ways.

One would be as we change precipitation events, we're bound to see basically higher intensity, but less frequent events, right? That tends to increase runoff and precipitation, which makes eutrophication worse, right? Because we're more at risk of losing stuff. Same thing with like more freeze thaw events, rain on snow events. That's a fact that's increasing the risk of us losing nutrients towards waterways, which is not what we want to do.

At the same time, there's a bunch of indirect impacts as well, right? If we have a drought, and then crops don't grow, well, that's affecting our capacity to mine the soil for those nutrients as well, right? And no addition of fertilizer will make up for that drought. Floods can also, right, wash away nutrients. So it's very interlinked and it's complex. And I'm really interested in better being able to characterize the types of events that we think are going to become more frequent. How important are they in modulating circularity or nutrient losses?

Another example in my work that would be... it's like a step removed. What we want to think about it is when we're talking about anthropogenic nutrient cycling, so cycling that's really dictated by humans, even though there's like you said, it's cosmic, it's in the earth, right? There's some stuff we don't control. The way that we manage our infrastructure and how that's going to

be affected by climate change has huge implications for how we need to plan for nutrient circulation.

So if we need to transport nutrients, our food or waste that has nutrients in them, how is our road network or our rail network protected from floods or really high temperatures when we have to slow down trains, for example? We can also think about something that I care a lot about is our organic waste infrastructure, so sewage. So that's a huge source of nutrients that could be great because we can collect it and reuse it if we treat it safely. It can also pollute waterways.

Well, a lot of our wastewater treatment plants are sitting really low, right? Even in London, where we're having to make these climate change plans, how are we gonna protect this infrastructure? So it actually couples really tightly with nutrients. We can also think another indirect thing that I'm quite interested in is if we need to plan for reducing carbon emissions and we're changing our land use, that will have an indirect effect on where sources and sinks of nutrients are. So if we're starting to invest in recycling infrastructure, have we thought ahead of time about where those hubs should be? Is it based on how we use land today or how we need to use land tomorrow, right? Where maybe some lands are no longer productive or they're too vulnerable for floods and we need to be moving away from those areas. So it's all interlinked and I'm all interested in it, but it's difficult to say if like you can see that signature when you're doing, you have this big vision, but you're just in your little garden collecting your soil samples, right?

So it takes a lot of time to kind of make those connections and steps with different researchers coming in with their different types of knowledge.

Ashar Mobeen (he/him) (33:04)

Wow, I could sit here and ask you questions all day. But thank you so much for giving us a glimpse into all the amazing work that you're doing. It was so amazing just to hear you talk about all this great work that you're doing and this vision that you have for especially Western, again, you know, us being linked to the university, a graduate student there. It's just great to see all the work that's been done and that will continue to happen. And yeah, so thank you so much for joining us today and I'm genuinely wishing you all the best with upcoming projects and we really hope you get that funding as well. Because, yeah, you're right, the arts definitely wants to get into the action.

Geneviève Metson (33:45)

Thank you so much for giving me the opportunity to speak to you and I'm really looking forward to hearing the other people that have been interviewed and where they're thinking as well.

Music (33:53)

Ashar Mobeen (he/him) (33:59)

Ecologies in Practice is hosted by Ashar Mobeen and produced by editors Elysia French and Amanda White, with music and audio editing by Adam Wiebe. This season was made possible through the generous support of the Sustainability Impact Fund at Western University, in collaboration with Brock University and the Centre for Sustainable Curating. We'd love to hear from you. Visit our website at ecologiesinpractice.ca to get in touch. There, you'll find details about each episode, transcripts, and further information about our guests and links to relevant projects and organizations. The book *Ecologies and Practice in Environmentally Engaged Arts in Canada* is now available through Wilfrid Laurier University Press.

Outro Music (34:36)