

VIEW to the U transcribed
Season 2, Women in Academia, Episode #4
Professor Tenley Conway, Department of Geography
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Tenley Conway (TC): I do think that there's a lot more interest in understanding resident's role in the urban forest. Municipalities are in the early stages of trying to figure out what residents are doing and then how they can encourage residents to behave in ways that will help municipalities meet their goals.

For instance, I'm on a working group in the City of Toronto that is hoping to develop a tree planting strategy and this is including not only the public land that city urban forestry's traditionally focused on, but really for the first time, they are thinking about private lands, and trying to understand what is it that residents are doing, and hopefully I can add some insights into that. And then figuring out, what are strategies we can use to then, encourage residents to help the City of Toronto to meet their urban forestry goals.

[Theme music fades in]

Carla DeMarco (CD): Seeing the Urban Forest for the Trees: Trees are part of our everyday landscape, even in a big city like Toronto. Sometimes we pass by these plants in the urban forest without giving them much thought. They are, however, of significant interest for today's guest on VIEW To U, Professor Tenley Conway, and have been a preoccupation of hers for the last few years.

On today's show, Tenley talks about her work examining how human environmental interactions impact the urban forests in cities and suburbs, and the diverse group of actors or the residents that end up shaping what she refers to as, our urban ecosystem.

We also touch on the benefits of trees, but also some of the disservices of trees when they cause issues or become problematic for residents. With this second season of the podcast focused on Women in Academia, Tenley also talks about finding balance in a busy academic career.

Hello, and welcome to VIEW to the U, an eye on UTM research. I'm Carla DeMarco at U of T, Mississauga. VIEW to the U is a monthly podcast that will feature UTM faculty members from a range of disciplines, who will illuminate some of the inner workings of the science labs, and enlighten the social sciences in humanities hubs at UTM.

[Theme music fades out]

Tenley Conway is a Professor in the Department of Geography at the University of Toronto Mississauga, and a faculty member in the graduate department of Geography and Planning and at the School of Environment at U of T. Her research aims to explore the role of residents in shaping the urban forest, and more generally, the relationship between human activity and the physical environment.

She considers questions related to the efficacy of current management approaches. The ecology of human dominated landscapes and interaction between urban forest and urban agriculture. Her work has been supported by a Canada Foundation for Innovation Grant. For over 12 years, Tenley's work has been consistently funded with grants from the Social Sciences and Humanities Research Council of Canada.

I know that your research covers a broad range of topics including urban vegetation, urban forests, land use, and also how residents play a role in shaping the urban forest. As I was wondering if you can give a bit more detail about the various topics that you cover in your work, perhaps with a couple of examples of current projects with which you are involved.

TC: Sure. Broadly, my work looks at human environmental interactions in urban areas. The way I define urban areas, it includes both cities, but also suburban and ex-urban landscape. The landscapes where humans are a dominant force and where there's lots of residential land uses.

In particular, I take an urban ecosystem approach to my work, so understanding these urban landscapes as an ecosystem of biotic and abiotic interactions, but of course, humans are a really big component of that system.

CD: When you say biotic and abiotic, what does that mean?

TC: Living organisms and then the physical environment within which they live. Within an ecosystem, we imagine these different organisms, so different species interacting with each other, and they interact with their physical environment with where they live.

In an urban ecosystem, we have that same situation, but then humans, of course, are a very big part of those interactions. But nonetheless, in an urban ecosystem concept, we think of humans as part of or embedded in the system, and not this sort of outside factor that is simply influencing the system.

I'm really interested in how humans interact with other parts of the urban ecosystem where they live. I've done this the last five years or so, primarily focusing on urban forests. Urban forests are simply defined as, all of the trees and other vegetation in an urban area. I'm really interested in what trees are in an urban ecosystem, where are they, how healthy are they, how big are they, what species are they, and of course, a lot of those questions, the answer's

dependent on humans. Humans making decisions about where to plant trees, where to cut trees down, which species to plant, and the level of care that is given to those trees.

CD: Because I'm thinking we're overlooking the Credit River and there's trees outside of my window here, this is considered an urban ecosystem.

TC: An urban ecosystem and those trees are part of the urban forest. Trees in our ravines and our parks, but also individual street trees. If you have trees in your front or back yard, that's part of the urban forest. It's a pretty expansive definition. When we think about that, all of these trees and all of these different settings, it becomes quite apparent that the trees in your yard are very much dependent on the decisions you've made, and the decisions that people who, perhaps, lived in your house before you made, and whether those trees will exist in 20 or 50 years, is also dependent on you and anyone who lives in your house after you.

I'm interested in precisely that. The decisions you and the 100s of thousands of other residents in an urban landscape are making about their trees in their yard. Urban yards are relatively small spaces, but you have this cumulative effects. You have these 100s of thousands of residents making decisions about very small pieces of land, that then add up and really shape characteristics of the urban forest as a whole.

Residents, of course, when we think about residents across the GTA or even just in Mississauga, they are a very diverse group of actors within the urban forest. Obviously, they're diverse in terms of their own individual characteristics, socio demographics, there's sort of broader outlook in the world. When we think about the urban forest, there's also a lot of diversity in terms of knowledge and attitudes towards trees.

How people want their yard to look. Whether people have the time, the money, other resources to make the yard look the way they want or not. We end up with a very diverse group of actors, residents who are making these admittedly fine scaled decisions on one or two trees in their yard, but again, cumulatively, have a tremendous impact on the overall urban forest or larger system.

An example of a project that I've been looking at related to residents' interactions with urban forest is, there's a lot of interest right now in diversifying the urban forest, of planting more species and increasing species richness with a number of species present in the urban forest. In part, because we think that this is a good way of trying to minimize impacts from pests and diseases.

If you have a diversity of trees present, then the likelihood that any one pest or disease outbreak is going to have a major impact is reduced. There's a lot of interest right now in getting residents to also support a diversity of tree species

in the urban forest. Most residents aren't that knowledgeable about tree species and really, aren't that interested in supporting these goals. Or, maybe that's the wrong way of saying it. Maybe it's not that they're interested, but they have other priorities that come first. They're more concerned with making sure that their yard looks the way they want their yard to look. And that they can engage in the activities that they want to engage in their yard.

CD: It's more of aesthetics driving the decisions that they make.

TC: It's the aesthetics and what we refer to as functional considerations. Not only does the yard look beautiful or the way you want it to, but if you want to have room for your children to play, you have that. If you're interested in vegetable gardening, you have that space to do those sorts of activities.

A project that a master student, Vivian [Yepinai 00:09:02] have been working on is, trying to develop a, what we are referring to, as a socially relevant metric of tree diversity. That isn't based on these ecological measures of diversity, number of species, or percent of native species, but rather is related to the attributes, the aesthetic and functional attributes that we know residents prioritize when they make decisions about trees in their yards.

We've developed this metric and we argue that when urban forest practitioners and policy makers are developing strategies to communicate with residents, that they should really be focusing on this idea of aesthetic diversity, because that resonates with most residents in a way that residents may appreciate the need for species diversity, but aren't going to be prioritizing that when they're actually making decisions.

If we can use the ideas and language that we know residents are making decisions on, that we argue it's a more effective pathway to ultimately get that diversity, that experts want to see in the urban forest.

CD: Right. They're also making decisions for, let's say, a tree that would do well in that environment because sometimes I've heard people are planting trees that really aren't native to this region and they wouldn't do well.

TC: Yeah, I mean, that's sort of what you just said, is a complicated idea, because there's a lot of discussion about the value of native species and when we think about maintaining ecological health or ecological integrity, native species and having an abundance of native species is very important. The conversation becomes much more complicated when we're thinking about urban environments because the conditions within urban environments are often quite different than the conditions that existed pre-urbanization.

In some cases, species native to a place are just not going to survive once it's urbanized. In some cases, and in urban forestry in particular, we have trees that aren't necessarily native to the region, but we know do really well in urban

areas, particularly in this poor site conditions along roadways where they're going to be exposed to a lot of pollutants, a lot of road salt, but they're going to survive.

There's a fair amount of debate right now within the urban forestry and broader urban ecosystem literature about how important is it to maintain and promote native species or should we recognize urban ecosystems as what people are often referring to or increasing referring to them as, novel systems.

These are new systems they have developed over the last 100, 200 years. We should recognize them as new systems and so the emphasis on traditional native species is not as important as simply having a diversity of species that fill a variety of rules or functions within the system.

CD: Okay. Gotcha. You just made me think also that I know I've seen a lot of trees cut down around here and I don't know if this is a fair question or even if your work touches on this, but I know that there was this issues of the ash borer beetle. I walk into work and I've seen all sorts of trees that were marked and now they're cut down. You looked at that at all in your research?

TC: I haven't looked at it directly. It's definitely an issue. Different municipalities have taken different approaches, whether to preemptively remove ash tree or not. Right now, across Southern Ontario and really across most of the Eastern North America, so the U.S. and Canada, and ruled ash borer is an invasive pest, but it is everywhere.

I know in Southern Ontario or at least in the GTA, the assumption is that, all ash trees are either currently infected or about to be. It is a big issue and it's a real challenge right now because ash trees represent or have traditionally represented a fairly substantial portion of the urban forest, so we're losing that and we're losing that at the same time that a lot of municipalities have adopted really aggressive goals about increasing the canopy cover. Not only is the challenge to increase it, but really, there's a challenge right now to maintain it because of the removal of so many ash.

CD: I've seen a lot taken down and it has changed the landscape in, I think, quite a few areas around here. One of the topics I was reading about on your website, related to urban forest disservices and I was wondering if you can talk a little bit more about this project.

TC: Sure. Urban forest disservices or ecosystem disservices, is a concept that's related to ecosystem services. Ecosystem services are simply the functions and goods that an ecosystem produces that positively impact human wellbeing. Within an urban context, what we mean by this is, if we think about the trees, or the urban forest, those trees are filtering out air pollutants, they are regulating storm water, they are creating microclimate affects that are creating

more pleasing environments for us. Those trees are providing important services that make the environment around them healthier for us, as people.

There has been a tremendous amount of research looking into documenting ecosystem services, both in urban ecosystems, as well as other types of ecosystems. This is really occurring over the last 10 years or so. There's been a lot of knowledge gained in this area and related to it, a lot of effort then to communicate these positive ecosystem services, hopefully as a way of ensuring that these natural systems are protected. We need to be protecting our naturally ecosystems, not just for their own value and because it is important to those systems, but because they also help us as humans.

We have this tremendous amount of research occurring. At the same time, there are ecosystem functions that negatively impact humans. Again, in an urban context, we could think of them as the pollen produced by many plants that causes allergens. We can think of them as the hazards that are created through a natural processes. Focusing on trees, that can include things like branches falling on your house or on your car. It can include roots going into sewer pipes, or breaking up concrete and making surfaces difficult to walk on.

There is a bit of a discussion right now in the literature about whether or not we should give similar or any attention to these ecosystem disservices. There's a lot of people that basically argue we shouldn't. That traditionally management in urban areas, environmental management, has focused on those ecosystem disservices, often using a different language, talking about risks and hazards. And that we need to give attention to ecosystem services right now, essentially to rectify the long tradition of focusing just on the negatives and not on the positives. That natural features produce for us.

CD: A disservice would be, say, I've got a huge tree in my front yard and I'm worried that it's going to be struck by lightning and going to crash through the roof. Is a disservice then, preemptively taking that tree out?

TC: Well, the disservice would be the tree falls on your roof.

CD: Okay. [laughs]

TC: The question is, when we devise a management plan, when we are doing research into the urban forest, should we be giving equal attention to those risks as we are giving to all the positive things that that tree is also doing for you. Creating shade, filtering our pollutants, helping with storm water in your yard.

We did a particular project looking at the impacts of the December 2013 ice storm that occurred in Southern Ontario. Lots of people who lived through that ice storm also remember lots of branches from trees falling down and then many neighbourhoods, those branches then took down hydro wires. Trees

created a set of disservices as a result to the ice storm, that were very particular to an ice storm. There were of course, then cost associated with the cleanup of those trees, which is also a disservice.

We did surveys of residents who experienced the ice storm and asked them, not only what happened to trees on their property, so what disservices they may have experienced, but also what their attitudes were now, to those trees. What we found now was that the ice storm was incredibly impactful. It was an important experience for people and that many people now saw trees on their property as a risk in a way they hadn't before.

This included trees that were damaged during the ice storm, but also those that weren't. People talked about preemptively removing trees or removing large limbs, so if we had another similar storm, they wouldn't have that damage or that disservice occurring. From this research, we argued that people experience disservices, they don't usually label them as a disservice, but they're part of peoples' experiences with trees in urban areas.

We can't just ignore them or pretend disservices don't exist and only focus on the positives. We need to acknowledge those disservices because from a management perspective, we need to develop strategies that can mitigate them, or that can address them in creative ways. If we just pretend they don't exist, then there'll be this gap between what management expects people to do and then what people do based on their actually experiences.

CD: That's very interesting. I wondered also, if there are any findings or results that you have come across over the course of your work that you have found particularly interesting or surprising?

TC: I think one of the surprising results we found is that, we've done a number of surveys of residents across the GTA. In different ways, essentially asking them about their attitudes towards the urban forest in general and to trees on their property, in particular. One of the consistent messages that we have received through surveys and interviews with various residents is that, older residents are very resistant to planting new trees and are often more interested in removing trees that are already there.

This surprised me at first, because when we look at, say, the gardening literature, gardening activities really peak in those early retirement years, so mid-60s through mid-70s. I guess I had just assumed that interest in trees would similarly peak during this time because it's another type of outdoor yard gardening activity.

In addition to that, we see a lot of the people who are volunteering in urban forestry events and with urban forest organizations, again, tend to be people who are in those early retirement years for the reasons we see that age group

volunteering probably in lots of different ways, that they have the time on their hands and the abilities to do that.

I think that trees are different than other plants you have in your yard. When you talk to older residents about why they're so resistant to them, they recognize trees are larger than flowers in the flower beds, and they last a lot longer, and they require a different type of maintenance than flowers do. Residents are justifiably concerned that they don't have the physical ability to do some of the maintenance, the raking the leaves every fall. They wouldn't be able to take down, prune large branches if they needed to. If they could do that now, maybe they won't then be able to do it in five or 10 years. It makes sense they're hesitant, but it was not what I was initially expecting.

CD: I shouldn't even ask this, but I've heard so much about people who argue about trees on their property because sometimes, they got neighbours, they want to cut the tree down but it's giving nice shade. I've heard there's been Little arguments, or sometimes they're big arguments, about whether or not to keep something. Did you come across that at all?

TC: Yeah. I mean, I think there is definitely an attitude among some people out there that they dislike all trees, but I think a more interesting attitude we've heard expressed a lot is, I love trees, but. That but is usually followed by, I hate that tree, or I have a particular problem with that tree. It's people who in general, like trees, are supportive of the urban forest, but also when you're talking about the particular tree in their yard or in their neighbour's yard, that is behaving in ways that are annoying or require effort, or are stopping people from doing other things they want to do in their yard, it's the particular tree.

It's an interesting thing when we're trying to do surveys and interviews of getting past the widespread, generally positive attitudes people have about the urban forest, yes, I like trees, I like looking at trees, and getting below the surface, which is in part why we focus so much on people's particular yard trees. Because then, you get into these situations where, someone who may generally love trees, also hates the tree in the backyard that's shading their vegetable garden.

CD: Right. I wondered if you could speak a little more about some of the long-standing research partnerships that you have that are with organizations such as Green Infrastructure, Ontario Coalition, and Local Enhancement and Appreciation of Forests, which the acronym is LEAF, as non-academic collaborators. I was just wondering if you can speak to how they shape the direction of your efforts or how they participate in some of your projects?

TC: Sure. Again, because a lot of our research is interviewing and surveying, not only residents, but other people we often refer to them as, different actors, that are within the urban forest. I found it incredibly useful to partner with non-academic organizations because they are frequently comprised of these actors,

but also regularly interacting with them in ways, that as a researcher, I'm not necessarily.

To give an example of that LEAF, who you mentioned, they have a very active backyard tree planting program, originally just in Toronto, it's now expanded out across the GTA. On a daily basis, during certainly planting season, they are interacting with residents standing in their yard, talking about where a tree could be planted, and then helping them plant that tree.

They have a lot of that local on-the-ground knowledge about what are they hearing from residents when they have these discussions about tree planting? For the most part, it's not something they systematically examined, but there's a lot of acquired knowledge with that group. Working with groups like LEAF, it's been very useful in shaping the types of questions or the types of issues that we focus on when we do our survey and interview work.

CD: Okay. I was wondering how you got into this particular field of study in the first place?

TC: I did my graduate work looking at land use, land cover models, and in particular, looking at a landscape that was undergoing suburbanization, so suburban development, and understanding how both paths, but also predicted future patterns of suburbanization was going to impact some of the local environment and local ecologies. The impact in particular on things like water quality, and habitat connectivity.

One of the things that frustrated me or was sort of kept popping up in the back of my mind is that, a lot of the land use, land cover studies I was doing and that I was drawing on, once an area became developed, once it became a suburban house or a more intensive urban area, it was essentially seen as ecologically void, it was empty. It became white space on our maps.

That's not really true. When we look out our windows of our houses or hopefully, where we work, we see trees, we see birds, and we see natural features. Maybe not in the most natural settings and so I became increasingly interested about what is present there and what are the factors that go into shaping it? Why do we have trees in certain places and not in other places? That's really how I became interested in urban forest.

The other thing I say is that, before I went to graduate school, I spent a few years studying bats, which are fascinating and awesome creatures, but I also came to appreciate that trees don't move, unlike other organisms that you spend half your time just trying to find them. Trees are relatively easy to study because they're there. They may be cut down, which is a complication. A tree can disappear overnight because someone comes and cuts it down, but for the most part, you aren't spending your time trying to locate them.

CD: You always had, then, an interest in the natural environment, though?

TC: Yes. Yeah. That is definitely a long-standing interest.

CD: Okay.
What do you feel is the biggest impact of your work?

TC: I think that one of the things, because I've spent so much time interviewing and surveying residents over the last few years, I think that's an important contribution. I hope it's seen as an important contribution from an academic perspective. A lot of the work in urban forestry, focused more on areas that municipal urban foresters have traditionally focused their attention on, so park trees, street trees, not trees on private property.

And then, there is other work that was occurring that was interested in trees on private property and patterns across cities. Most of that work was looking at a neighbourhood scale or above. While there's some really interesting patterns of unevenness when we talk about the urban forest that occur at the neighbourhood level, one of the things that I thought was really missing was, that focusing in on the finer scale, the property level, the homeowner, where decisions are actually made.

That even within a neighbourhood, driving around my own neighbourhood, there isn't an even distribution of trees. Some yards have none, some have many. I wanted to really understand that fine scale dynamics and emphasizing that, if we actually want to understand urban forest dynamics more broadly, we need to really emphasize that fine scale.

In a more applied impact, I think it's ongoing. I hope it continues to go, but I do think that there's a lot more interest in understanding residents' role in the urban forest and municipalities are in the early stages of trying to figure out what residents are doing and then how they can encourage residents to behave in ways that will help municipalities meet their goals.

For instance, I'm on a working group in the City of Toronto that is hoping to develop a tree planting strategy and this is including not only the public land that city or urban forestry's traditionally focused on, but really for the first time, they are thinking about private lands. Trying to understand, what is it that residents are doing, and hopefully I can add some insights into that. And then figuring out, okay, what other strategies we can use to then hopefully encourage residents to help the City of Toronto meet their urban forestry goals.

CD: That sounds wonderful.

[Interlude music]

CD: Coming up: Women in Academia. Tenley talks about the challenges of finding balance in a busy, academic career.

[Interlude Music fades out]

My last question, I think I mentioned to you, this season of View To U is a focus of Women in Academia and there's been quite a bit of discussion lately about promoting and supporting women in all types of careers. I was just wondering, if you personally come across any challenges in the course of your career or if you have any words of encouragement for young women who are just starting to embark or maybe think about embarking on a career in Academia?

TC: One of the things, I think I was really lucky. Right after I finished my undergraduate degree and before I start graduate school, I spent a few years working for a woman, a researcher, as her research assistant. I learned a tremendous amount from her, not only how to do research, but also, I think she was a really excellent model of work/life balance. As I've gone through my career, I've thought about that. I think she made me realize that I could have a career in research and also have a life, so that was a very valuable lesson to experience.

I think the challenges I have had, I'm not sure that they're that unique, and in some ways, they're also tied to the greatest benefit of being an academic, which is flexibility. We have a tremendous flexibility in terms of how we use our time and when we choose to work. When we don't, of course, also then, the challenge is creating boundaries between when is work time and when is not work time.

For instance, before having a child, it was much easier to have less of a boundary, that when I was ready to work, I could work and it didn't really matter what time. My partner, who's also an academic, understood. I took advantage of that flexibility and also it was earlier in my career and so it also meant that I worked long hours and regularly at nights and the weekends. Of course, having a child, suddenly you have these hard boundaries around childcare and you need to leave every day at 5:00 and so figuring out how exactly to do that.

In particular, I ended up taking eight months of mat leave and my partner took three or four, so it was nice that we could both take it. But work demands, in some ways, didn't stop when I was on mat leave, so right away, figuring out what those boundaries were. But then, also going back to work thinking through what the boundaries were.

Again, the flexibility, so in terms of advice, I mean, we are incredibly flexible with how we use our time when we work. I think it's just a matter of figuring out the schedule that works for you because we have the ability to come with our

own schedules, but also making sure that it's okay, and that you are taking time, you know, that you are balancing that there is some.

So with me, personally, this means that I often end work at about 3:30 or four when my son comes home, but then, I do work again in the evening because that's the schedule that works well for all of us right now. If anything, we're really lucky that we have that flexibility. Other people want it and can't because of their job requirements. It also means that we also have work that's not always easy to completely put aside, but that's just the nature of it because we can all do work from home.

CD: Work from home.

TC: Yeah. I think it's also just sort of be a modern work environment.

CD: Absolutely.

TC: I'm old enough that I used to leave work and not check my email at home.

CD: Oh, I know.

TC: And now, I-

CD: It's on your phone.

TC: Yeah. It's never not being tracked.

CD: I hear you. I think that wraps up all think that wraps up all the questions I wanted to ask you today. I just wanted to thank you so much for coming in and speaking to me about your work and I really appreciate it.

TC: Well, thank you very much. It was great to be invited and I really enjoyed this.

CD: I would like to thank everyone for listening to today's show. I would like to thank my guest, Tenley Conway, for coming to speak about her work and her projects in the Department of Geography at UTM.

Thank you to the office of the Vice-Principal, Research for their support and for everyone who has expressed their interest in this podcast.

CD: Please feel free to get in touch with me. My contact information is on our Sound Cloud page, if you have feedback or if there is someone from UTM that you'd like to see featured on VIEW to U.

Lastly, and as always, thank you to Tim Lane for his tunes and support. Thank you.