PLANT PEOPLE Season Three Episode One "Moss with Robin Wall Kimmerer" Transcript

Jennifer Bernstein Narration: The last time you went out for a day in nature, you might have spotted a small fuzzy hill of green growing in the shade. A patch of moss standing out among the foliage, seemingly unremarkable. But if you knew the true power of moss, what it's done in our planet's geologic history and what it's doing today, you might have been a bit more starstruck.

After 450 million years, mosses are some of the Earth's most resilient plants. They've survived drastic weather changes and cataclysmic planetary events. In fact, there's a theory that moss may even be responsible for one of these events. The last mini Ice Age.

Welcome to Plant People. I'm Jennifer Bernstein, CEO, and the William C. Steere Senior President at the New York Botanical Garden.

Today we're joined by Indigenous ecologist and author Robin Wall Kimmerer to talk about nature's abundance, doing right by plants, and the ways that moss can teach us about surviving and even thriving during an era of rapid climate change.

Jennifer Bernstein: Robin, welcome to Plant People. I'm a big fan.

Robin Wall Kimmerer: Thank you so much for inviting me. I'm delighted to talk with you.

Jennifer: Well, I'm so glad you're here. I have read all of your books and I absolutely love the way that you connect plants to the universal story of people and our planet, which is something we're very much interested in promoting and exploring here at the New York Botanical Garden. To get us started, tell us a little bit about what sparked your lifelong path in the wonderful world of plants.

Robin: Oh, you know, Jennifer, I like to think that I was actually born a botanist. I cannot think of a time in my childhood when I wasn't out looking at plants and wanting to know who they were and what they were all about and what they tasted like. So, it is an extension of a childhood passion because I had the great good fortune to grow up out of doors.

My parents encouraged me. My mom gave me my first wildflower book and sat on the grass with me and taught me how to use it.

Jennifer: Yeah, I really do think that so many people's journey loving nature begins in childhood, which is a reminder to all of us who have little ones in our lives to reveal to them the wonder of nature as well.

So, you have several things in common with Elizabeth Britton, who is NYBG's co-founder. Britton was a bryologist, she studied moss. And, of course, you wrote Gathering Moss, which I thought was a captivating book about these tiny but mighty plants. What is it about the tiniest of plants that inspires ambitious thinking about how we can be better stewards of biodiversity?

Robin: For me, some of the captivating nature of mosses is that they are doing their work just at the limits of our attention. If you pay attention to mosses and start to understand their role, they're like a miniature forest. And it is that curiosity, that wonder about what is happening in a forest that is only an inch tall that really drew me into the study of mosses.

Jennifer: Moss and people are moving on very different timescales. So, how do you think that should inform our thinking about moss?

Robin: You know, as you said in your intro, mosses are the most ancient of plants on land. And human beings, compared to mosses we are a pretty recent innovation. And the fact that mosses have built the very land that we inhabit today, that they have withstood all the climate changes that have ever happened since they colonized land billions of years ago, in a time when biodiversity is threatened, when our own actions threaten the nature of the living world, shouldn't we be asking the oldest beings on the planet, "How did you do it? What is your secret to successful life on the planet?" And I am so interested in what they have to tell us in that regard.

Jennifer: Can you tell us what is your favorite place to study and be with moss?

Robin: Well, almost anywhere there are mosses, right? But I'll tell you, one of the groups of mosses that I particularly love are the mosses that grow on glacial erratic boulders. Those big granite boulders in a shaded forest that just become absolutely coated with multiple forms of moss. And when you look at the rock, you realize, "Oh my gosh, there are 10 kinds of moss just on this one rock." So, you can kind of see the ecological dynamics and patterns of relationship between different mosses when they're all growing together on these big rocky outcrops.

Jennifer: There's a theory I mentioned in the introduction that moss may have influenced the last mini Ice Age. How could such unassuming plants manage such a huge swing in our planet's climate?

Robin: Well, it's thought that perhaps when the moss successfully colonized land, which was just bare rock at the time…There was no soil, there was no other kinds of vegetation, and when mosses successfully adapted to colonized land, they had a profound effect on biogeochemistry of the land.

Suddenly, there are these tiny little beings that were interacting with that bare rock and they were beginning to dissolve nutrients, and send those nutrients not only into their own bodies, but into the ocean, and this cumulative incremental effect of rhizoid by rhizoid, degrading the rock and enriching the water, helped fuel more algal growth in the oceans.

And of course, all of that growth, through photosynthesis, was taking CO2 out of the atmosphere at such a rate that it actually was the reverse of global warming and created global cooling is one of the hypotheses. The mosses themselves on land contribute to that carbon sequestration as well. But, both of those factors probably led to this mini Ice Age.

Jennifer: It's fascinating. There's so much to learn about the history of the way that plants have influenced and shaped our world. How do you think we can engage more ethically with moss and other plant life?

Robin: Wow. There's so many dimensions to that, but two things. First of all, mosses thrive in cool, moist habitats. And our activities through burning fossil fuels are causing the diminution of cool shady places. And so there are some predictions that mosses will suffer in a hotter, drier world. And so our own actions are jeopardizing this whole world of moss beings.

In a more perhaps direct and immediate way, there's a lot of illegal harvesting of mosses for uses that don't respect those lives at all. They're used as if they're a fake green carpet or something. I see them dried out, sprayed fluorescent green, and stuck on the walls of a hotel for a touch of nature, as they say. And to me that's a real moral affront to the lives of these beings.

And, of course, there's a tremendous impact that comes from harvesting these wild beings because they play such important ecological roles. When they're taken from their habitats, there's a lot of consequences to that.

Jennifer: Hmm. Yeah. I really loved also one of your recent books, The Serviceberry. I have a serviceberry in front of my home, but for our listeners, could you please describe a serviceberry tree?

Robin: Oh, what a beautiful tree. An understory tree, graceful gray, multiple stems, and in the springtime, just a froth of white flowers. I think around where I live, they are the first to flower and such a welcome to spring right after the ground thaws. We get that beautiful bloom and then in late June, early July, they're sometimes called juneberries. They have these marvelous fruits. They taste like a cross between a blueberry and then apple.

They're so delicious and Indigenous people have used them as a food source, since time immemorial really. Because they're really nutritious. They're used to make pemmican. You can use them to make fruit leather and heck, you just want to eat them by the handful. It's a very generous tree.

Jennifer: You talk about the serviceberry teaching us about the abundance that's all around us and the ways in which that can conflict with the scarcity mindset that we have in our market-driven economy. Can you talk about the gifts that you think the serviceberry have to offer our modern way of thinking?

Robin: Sure. You know, I chose the serviceberry when I was invited to write an essay about economics.

And I chose the serviceberry, because partly of its name. That economics is all about the delivery and distribution of goods and services. And so the serviceberry seemed like a really good companion in that examination of our economy, but also because I wanted to use essentially a kind of cultural biomimicry to think about how does the economy of nature as evinced by the serviceberry contrast with the human market capitalist economy that we have created. And because serviceberry is such a generous plant, it seemed to me, again, a really good model of the abundance of nature.

Because when you think about it, the serviceberry, of course, is taking water and sunshine and turning it into flowers in the spring to feed all those hungry flies that are coming out right after the ground thaws…which then yield berries, which are just feasted upon by catbirds and bluebirds and thrushes and wax wings and robins.

This plant is involved at every stage of its life in giving away the common resource of sugar or plant parts. The service period doesn't hoard its production. It shares its abundance, so serviceberries are simply one example of the ways in

which fruit bearing plants are models of a circular economy where nothing is hoarded, nothing is wasted. And again, that notion that when the gifts of nature are shared with bees and birds and me as I'm picking serviceberries…

Those gifts are the currency of a gift economy. It's not money, it's energy and the gifts of the plants, it's in contrast to the model of human thriving where we say we're going to get abundance by hoarding it and keeping it away from somebody else which creates scarcity.

Or you can create food security by giving everything away and creating such good relationships that those birds will always be back. Those birds are gonna fertilize the soil that lets you make more berries.

So, it's simply an examination of the economy of nature and asking, “Hmm, how could we amend, tweak, utterly change our materialist market economy so that it aligns better with the sustainable economy of nature?”

Jennifer: Yeah, it's hard. Because the economies of nature are more immediate and connected physically to one another and our current global economy, the players, the stakeholders are very removed from one another, so it's very easy for them to become invisible to each other.

I don't know how we deal with that exactly. Any ideas?

Robin: Well, I think our way out of this is greater engagement with the natural world so that we remember where our food comes from, that we remember it's a gift from the land and that it doesn't come from some big old warehouse out there. This is coming from the Earth and the only way we really remember that is to pay attention to the living world in gardens, in the forest, in parks, in our daily lives.

Jennifer: Yeah. I think that's right. Cultivating that appreciation for nature has been really core to our mission since we were founded in the late 1800s. The site was selected because there's an old growth forest at the heart of the Garden. It's never been cut, and we've been responsible for protecting that forest for about 130 years.

For the first century or so, we had a let-alone policy, which was the thinking of the time in the scientific community. Over the past few decades, we've practiced science-based, active, ecological restoration to mitigate the anthropogenic changes that we're seeing, and the threats to the biodiversity of the forest.

You advocate for a ‘Two-Eyed Seeing’ approach to ecological restoration, so I was wondering if you could explain what that means, particularly in the context of an ancient but altered ecosystem like the Thain Family Forest.

Robin: Mm, yeah. ‘Two-Eyed Seeing’ is a metaphor that was put forward by two Mi'kmaw educators. And ‘Two-Eyed Seeing’ because it acknowledges that so much of our understanding of the world comes to us through one lens, and that is the lens of the Western worldview and particularly the Western scientific worldview. Which is powerful, but that's not the only lens out there.

The Indigenous worldview is quite different in many ways, particularly as regards relationships with the natural world. So ‘Two-Eyed Seeing’ is an invitation to everyone in education, in research, and engagement with the natural world to look at the world, not only through the lens of Western science, but also through the lens of Indigenous science and philosophy.

And when we do that, we get to a really different relationship with the land. Oftentimes in Western conservation, we have this notion that human beings and nature are a bad mix. And so, what we need to do is put a velvet rope around nature, keep people out so that nature can thrive.

Well, in many cases, we're coming to understand that human beings are part of nature. Human beings have an active ecological role to play that fosters biodiversity, that fosters the wellbeing of plants largely through manipulation of ecological succession that literally magnifies biodiversity. And so, I'm really interested to hear that you all are adopting a more tending relationship with your forest.

Because there's so much good evidence both from Western and Indigenous sciences that suggest that biodiversity is enhanced with the right kind of human interaction.

Jennifer: Yeah, it's a really important perspective to bring to bear and to remember that this relationship between humanity and nature wasn't always as distorted as it has become in the Western world since the industrial revolution. That there was a time and there still is in practice in many places a much more reciprocal and productive relationship between people and nature.

And the invitation to think about the positive role that people can play in nature can allow us to reset the terms in a really beautiful way. So, it's a good development.

Robin: It sure is. In fact, oftentimes when people hear about Indigenous land management, people will say to me, “Oh, are you wanting to go back in history? And live in some atavistic past?” and what I try to tell them is, no, no. Indigenous knowledge and philosophy are a way to live into the future. We see this in an amazing study that came out of the UN biodiversity reports that showed while biodiversity, as we know tragically, is crashing all over the planet, that there are places where it's not.

And those places are in Indigenous homelands, where this different worldview and this different relationship to the living world is promoting biodiversity. And so again, it's ‘Two-Eyed Seeing,’ isn't it? You say, what can we learn from this relationship to the land?

You know, as scientists, our training tells us to consider all potential hypotheses, to consider all these beautiful streams of evidence that might enhance our understanding. And so, I think we're just doing way better science when we use ‘Two-Eyed Seeing.’

Jennifer: Well, more than 80% of the world's population now live in cities and towns. What do you think about the ways that we can forge this lasting connection with nature for people whose lives and livelihoods are rooted in these very urban environments?

Robin: I think that places like the Botanical Garden play an incredibly important role. And other green spaces in urban environments. I've been talking lately to some of the folks who work on things like tree equity, also known as the tree justice movement, that recognizes that the benefits of a green, leafy canopy and access to nature are not equally distributed in our communities. There is tremendous injustice in access to nature. And so a lot of city planners are now adopting the standard that says that every citizen in the city should have high quality nature within a 10-minute walk of their homes. And so, I think we have a big job in design and education and engineering to make it so because we know that that is not the case right now.

Jennifer: Absolutely. I mean the benefits of cities are significant. You're concentrated with all of these other people, and being with other people is a great engine for prosperity, for knowledge creation, for creativity.

That's why people are drawn to these places so we have to find a way for cities themselves to be additive to biodiversity and for the experience of living in a city to not be at odds with people staying connected to nature.

Robin: Yeah, and you know, all the things that you just mentioned, these wonderful assets of the city are also ways that people can be in reciprocity with the land, even though they're not necessarily planting trees or gardens. But that ferment of ideas and political activity, this is the gift of urban environments that can really be activated for nature protection that reciprocates the gifts of nature with votes and words and art and science. It doesn't all have to be with a shovel and seeds.

Jennifer: Right. So, your career has been as a botanist and as an educator. But, of course, since your book Braiding Sweetgrass, you've also become a public figure and someone that people from across this country and beyond look to for guidance about how we can repair our relationship with nature.

I'm interested in what that journey has been like for you, and whether you've seen nature differently as a result.

Robin: I think it has taken me, this arc of my career from research and teaching, to get to the place where I understand the power of storytelling to change our relationship with place. You know, working with restoration ecology, for example.

I came to realize in a pretty pivotal way that it's not only the land that is broken. It's our relationship to land that's broken. And so restoration ecology is a set of tools that help us heal the land. But if we don't heal our relationship with land, we're just gonna replicate the same damage over and over again.

So I've become really deeply committed to the ecological storytelling, which I call ‘restoryation’, a term that the wonderful botanist Gary Nabhan first coined decades ago. So, that's where I see my niche now. To help change the story of our relationship to plants from an exploitative one to a regenerative one.

Jennifer: That's a wonderful journey that you've been on, and I expect that it's led you to your newest project, which is the “Plant, Baby, Plant” movement. So. I was wondering if you could tell me about that. What spurred it, what is it?

Robin: Yeah. As a result of Braiding Sweetgrass and other work, I'm in contact with audiences every week, who are alight with love for plants and love for land, and it's gratifying. It's exciting. But it's also heartbreaking, because there is this deep longing to do right by plants.

And so when people are laying that in my lap and I have the gift of people listening to me in this moment, I want to help answer that question of where

does this longing and love for the land go? How do we translate our love for plants and the land into action? And so “Plant, Baby, Plant” is catalyzing this movement to inspire people toward acts of regeneration. The name comes very clearly from that alternative worldview, of “Drill, Baby, Drill,” which says, “Well, we know that attitude is going to destroy the climate and jeopardizes human life and biodiversity. But we're gonna do it anyway.” Well, I think not. Couldn't we have a counter narrative? We don't have to buy into that. And so this is hopefully a gathering place for people who are committed to these ideas, to both do what we call raise a garden and raise a ruckus. And those, those twin acts of caring for the land, restoring and ‘restorying’. That's what we're trying to catalyze is a movement that will counteract this notion that “Oh, it's all doom and gloom and there's nothing we can do.” Well, there is a lot we can do both through ecological action and political action.

Jennifer: Robin, it's been such a joy talking to you today. I hope everyone will read all of your wonderful books, including Gathering Moss: A Natural and Cultural History of Mosses. And don't forget to visit plantbabyplant.com to learn more about this exciting new initiative.

Thank you so much for being here.

Robin: Thanks for inviting me.

Jennifer Narration: Plant People is a co-production from NYBG and PRX Productions. From PRX, Plant People is produced by Ali Budner, Courtney Fleurantin, Genevieve Sponsler, Adriana Rozas Rivera, and Pedro Rafael Rosado. The executive producer of PRX Productions is Jocelyn Gonzales.

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