

**LEARNING**

**HOW**

**TO**

**SEE**

with

**Brian**

**McLaren**

Season 6, Episode 3  
Seeing Nature as a Scientist (Part 2)

feat. Susan J. Twiet

Brian McLaren: In our last episode, we had a conversation with an astrophysicist, learning how to see nature, this created, beautiful, rich world, as a scientist. And in today's episode, we'll meet another scientist, this one a botanist, who'll help us to see nature as one community of interconnected living beings. I know you're going to enjoy this conversation.

The first time I ever went to a library and checked out a book on mysticism, I read the introduction to this book by the poet Auden, W.H Auden, and I remember he talked about the mystical experience very often having to do with a sense of the interconnectedness and oneness of all things. I know some people, when they hear the word mystical or mysticism, they think about visions of angels or some ecstatic frenzy. But I really appreciate what Auden said, and he's right, that for many people, this experience of the connectedness of all things, the deep unity, the deep wholes, W-H-O-L-E-S, that we're all part of, that this insight comes often very quietly and sometimes it even comes through the study of science. Today, you're going to meet a botanist who also just loves the outdoors and loves the natural world, and through both her science and her walking of the Earth, she has become a person who feels that deep interconnectedness. I hope you'll get a deeper sense of what she and so many have come to see in this episode of Learning How to See.

One of my favorite places on Earth over the last 10 or 12 years has been a place called Ring Lake Ranch in the high desert of Wyoming in the Wind River Valley. When I was there several years ago, I took a hike in the badlands near Ring Lake Ranch with a botanist. And as we walked along through what a lot of people would see as a harsh environment, even in some ways a lunar kind of environment, and people would think there wasn't much life there at all, this person guiding our hike, this botanist, helped us not only learn the names of the living things that we encountered, but let us know the service that each plant or animal contributed to the whole ecological community, and then the relationships that one had to another.

I remember by the end of that walk just feeling that I had been in the presence of a sacred community of giving and receiving, of one breathing out another, breathing in, of one presenting pollen, and another pollinating, just this beautiful inner change, inner connection, really interbeing. And what struck me is a lot of people wouldn't expect a scientist to give you a sense of awe and mystical connection and deep insight, but that's what I gained from this gifted hike leader and naturalist and scientist and artist and writer. And that is who we have as our guest today. I'm so happy that Susan Tweit could be with us. Susan, I wonder if you could introduce yourself and tell folks whatever you'd like them to know about you and your background, and if anything I just said was inaccurate, you can correct it too.

Susan Tweit: Brian, first, I am so honored to be here. It's such a delight and a pleasure to be part of this amazing effort you have with this podcast, Learning How to See, and I don't know what there is to say after that great introduction. One of my fondest things about that walk was, I believe, your grandson's first time seeing one of the endemic, meaning a species that's not found many places other than that badlands, horned lizards, horny toads.

Brian McLaren: Oh, my. He will always remember that.

Susan Tweit: Such a delight. We were talking about the horned lizards and how they're dependent on the

ants, and I said, “Look at the ant mounds. Look at the ant mounds.” And sure enough, there was a horned lizard, and I just remember his whole face lit up when we found that little horned lizard, and these are tiny ones there. It’s the high desert, and so their season is short and they don’t get very big. They’re smaller than the palm of my hand, and his whole face lit up when I put that horned lizard into his hand. He was just thrilled, and I thought, “Yeah, that’s what wonder and awe is about. That’s what the sacred is about. That’s what the spirit within us responding to the spirit with all other creatures is about,” and that is my mission in life is to encourage that kind of thing.

I am, by training, a botanist. I studied the way plants and landscapes and animals and other creatures relate to each other and how they form the communities of life that some people call creation on this Earth, in which we are an integral part of, even if we don’t always think of ourselves that way. I found I love telling the stories behind the data I collected as well as I did collecting the data, and so I moved into writing. I evolved, I like to say, into writing some years back. And when we met at Ring Lake, I was actually working as the hike leader and housekeeping coordinator at this marvelous spiritual retreat center in Wyoming, which is where I’m from. It was such a delight to get to take you and your family on that hike. I felt like, yeah, this is what I’m meant to do is tell these stories and write these stories, and reconnect us to the community of the land.

I believe that humans innately have an affiliation for and a connection to this living Earth and all the other beings we share the planet with. I call it terraphilia, philia for love, terra for Earth, and that word motivates my work and has for decades. It’s only recently that I’ve started to write about it, and that’s a source of great excitement to me to realize as a scientist, oh yeah, I can talk about awe and wonder, and I can talk about things about which I am not an expert as a scientist. I’m trained to only write about what I know, and to not have opinions or adjectives and adverbs.

Brian McLaren: Yes.

Susan Tweit: And so, it’s been just a delight to free myself to write about what I speculate about, this idea of terraphilia and how to reconnect ourselves and how to belong to the Earth again in meaningful ways.

Brian McLaren: You have 13 books.

Susan Tweit: I do.

Brian McLaren: And most of them, or maybe all of them in one way or another, are books about love and love for this beautiful Earth. I was so deeply moved by your book, *Bless the Birds*, which was a book about a letting go and a saying goodbye, and with a love for nature in the background of every page. I wonder, could you just maybe tell a couple of your titles and the landscape that that title is connected to?

Susan Tweit: Well, I actually have some sitting here because I was thinking I might read tiny snippets if there’s an opportunity. I’ve written two memoirs. *Bless the Birds*, that you mentioned, is one of them, and that one is set mostly in South Central Colorado where my late husband and I lived for two decades. I am a creature of the sagebrush country of the West, the places where big sagebrush, once the most common shrub across the West. It’s an aromatic shrub with a

fragrance that people either love or hate. I love it. I'm a creature of that part of the West, and so all of my books are set in that part of the West because that's where I've lived my whole life.

Another memoir is *Walking Nature Home: A Life's Journey*, which is about, oddly enough, a scientist relearning wonder and awe and magic after being so involved in science that she lost, that's me, lost her connection, the heart connection, spirit connection to nature, and having to relearn that voice and that relationship. One of my other favorite ... well, two of my other favorite books are, one is *Barren*, Wild, and *Worthless*, which is actually a quote from [inaudible 00:09:21] feature about the Chihuahuan Desert in New Mexico, which most people regard as flyover country.

Brian McLaren: I love that title.

Susan Tweit: It's very difficult, very harsh, very open, and not very friendly country, and I lived there for seven years and fell in love by design because I was living there. I have to love a landscape I live in or I can't live. And so *Barren* is about learning to love that desert and about its history and natural history, human history and natural history. It has chapters like *Weeds* about the people we decide who are expendable and not allowed to cross our border, and also about the plants we decide don't belong. It has chapters called *Sanctuary* about the tuberculosis epidemic of the last century, the previous century, and finding home in landscapes that no one else loves. So that's very much a memoir, natural history.

And then another one I love is called the *San Luis Valley, Sand Dunes and Sandhill Cranes*. It's a chapbook-size book, and it came to me as one of those wonderful assignments that freelance writers crave. University of Arizona Press called me one day and said, "We have a desert places series where we let an author and an artist loose on a particular area of desert that they pick, and let them write, the author just write 45,000 words of whatever they want about the place. Just has to include nature and some human history, and you can pick the photographer or artist you want to work with." And I was like, "Yes, please, sign me up."

I picked the San Luis Valley in Southern Colorado, which is Colorado's empty quarter. It's the size of the State of Connecticut and has less than 50,000 people living there. It's a big, wide empty space where the average wind speed year round and year out is 35 miles an hour, day and night, so the wind blows a lot. There's huge sand dunes, the tallest sand dunes in North America, and these days, a lot of dope firms. It's heckishly cold in winter and heckishly hot in summer, and bordered by mountain ranges that are formidable. And it has a flock of 20,000 sandhill cranes that spend two months in the spring migration and two months in the fall migration doing their pair bonding there in the valley, dancing and ... to each other to renew their pair bonds, a lovely thing I think humans could do to emulate.

Brian McLaren: Yes.

Susan Tweit: So, that's another one of my favorite books.

Brian McLaren: Oh, that's so great.

Susan Tweit: And there's others.

Brian McLaren: Oh, that's so great. Well, I want to ask you one question, and then I would love to hear a couple of passages that you'd like to share with us. It seems like we have some people in the world who are just oblivious of the natural world. They don't ever get a chance to get out of the city or a neighborhood where they live, or they may have the chance, but they would never want to. And in fact, many people really are afraid. As soon as they get off of concrete and as soon as a leaf might touch them, they feel very, very anxious because it's unfamiliar. It's as unfamiliar to them as Mars or Venus, because they've just never, literally, never been there. I mean, people would be surprised how many people around the world have never been in any place close to a wild place. And even, of course, all wild and natural places are relatively so.

But then we have other people whose lives are spent studying the natural world, but are given a kind of objective, distanced view from it where they lose that sense of connection, and they feel embarrassed to talk about their love for it. And suddenly we're in this moment. We know for the world to be saved, it has to be loved and cherished, and so reclaiming that sense of connection and love that's part of your own story, it seems to me super important right now. So, I'd love to just hear a little bit about how that struggle unfolded for you and how you broke through it as you tried to reconnect with the Earth as a scientist.

Susan Tweit: First, I have to say I had no choice about belonging to nature as a child. I grew up in a family that ... Oh, I have to read this little passage because it's so evocative from *Walking Nature Home*. I grew up in a family that I would regard as eccentric in a very, as an adult, a very good way. As a child, I just wanted to be like everybody else.

"In my childhood home, drawers in the basement cabinets held collections of neatly labeled seashells and rock specimens. We had a blacklight for fluorescing minerals, a garden of native wildflowers rescued from development sites, roadkill held for study in the freezer, much, I must say, to the chagrin of one of my friends when she opened the freezer in my childhood kitchen, thinking to get a popsicle out of it, and there was a full spread-out dead hawk right on top of the popsicles. She never opened our freezer again. She wouldn't even touch the door. We had binoculars on a shelf of nature field guides close at hand. Our family car was a tradesman's van converted for camping, our family lexicon rich with the names of wild plants and animals. My first language was science. Other kids' heads were filled with G.I. Joes, Barbie dolls, and the opening bars of *Goldfinger*. Mine held the courting songs of robins, the habitat of Ladies' Tresses orchids, and the physics of sand dune formation.

Brian McLaren: Oh, I love it. That's from which book?

Susan Tweit: *Walking Nature Home: A Life's Journey*.

Brian McLaren: Oh, *Walking Nature Home*

Susan Tweit: I literally grew up in a family where our family culture was nature study and science. One of my grandfathers was a botanist. He studied deserts the world around in the early 1900s, starting in Tucson in 1903. Brand-new minted PhD from Columbia

University in New York, and he got off the train in Tucson on September 12th of 1903, and you can imagine the shock that was. Never been to the West before that.

That's the culture I grew up in, and I truly had no choice about belonging to it. But what I had a choice about was, as a child, like all children, I had a mystical relationship with the trees in my neighborhood and the wild country that we spent our summers camping and backpacking in. I was never afraid of any of the other beings that lived there, although sometimes I was pretty shy around humans.

I am a plant person. I grew up in a family of bird watchers, and as a defense, I think, I turned to loving plants because they don't get up too early and they hold still when you want to identify them. They don't fly off, and they're never found in places like the sewage lagoon. I was out at 6:00 one morning with my family, and it was very fragrant, because there was some rare sandpiper there that had seen the dot of water, when migrating after a storm, had seen this dot of water in the middle of the sagebrush and landed in the sewage lagoon. And birders from all around were there with their spotting scopes to see this red-legged hoo ha, whatever it was, and I was in the camper with my nose buried in a book, because, "Really, bird?"

I was fortunate enough to grow up in that love. And then I went into science, and had to learn, as a female in field science particularly, I had to learn an objective distance. I had to step back. I had to stop talking about the fact that I listened to trees and that I love to sniff sagebrush. Instead, I was to snip branches off the sagebrush and crush the leaves and soak them in alcohol and let them spread out on a piece of filter paper, so that the different organic compounds that make up their scent would show up under different lights, and I would be able to determine which species they were. All done very clinically. I couldn't say out loud to the sagebrush, "Sorry, I'm clipping off half your branches." That was not okay. I would never have made it through school or grad school or through work for the Forest Service or the Park Service or anything if I had allowed my inner nature mystic out.

And then I got sick. In grad school, I was so ill with what we now know as lupus, a autoimmune condition, that I was given three to five years to live. I'd like to say, in that diagnosis, I woke up and went, "Oh, I've lost my heart and spirit's connection to what nurtures me, and that's what's making me ill." No, it took me like 10 years or 15 years to realize, oh, right, I'm a scientist, but I'm also someone intimately connected to nature at the heart level, and that's what's making me sick is the trying to split myself into two and only be the left brain logical me.

And so, I made some changes in my life. I left field science, never completely, but I thought, "Well, I'll just become a writer," because that would be a great way to make a living, but what it did allow me to do was step back into the intimate picture. I couldn't write about spadefoot toads in the Chihuahuan Desert without being the lyrical me, the poet who could hear them at night after a thunderstorm from the floodwater retention pond across the busy road from my house going ... as they called for mates while floating in the water, the guys inflating their necks to make this sound. This, what was obviously attractive to the females, and the females swimming over and them mating, and you can't write about that without the lyrical poet self, without the heart self coming in.

Brian McLaren: Yes.

Susan Tweit: And so, it was writing really that saved my relationship, and it was writing about nature where I lived, not in the wild country I love to go to.

Brian McLaren: Mm-hmm. Yes.

Susan Tweit: As a scientist, I worked in the back country. I worked in the wilderness. I was out away from people in roads and cars and radios, which were then the means of communication, for days at a time, and I loved that. I loved that work. But as a writer, I couldn't do that all the time. I wrote about nature in my backyard, nature around my house, and that's what reconnected me, and that's what I think all of us can do.

I often tell my readers ... The other week, in fact, I gave them an assignment on my Practicing Terraphilia newsletter and said, "All right, I want you this month to go out and learn 10 creatures in your neighborhood, or plants, that you don't know. Learn their names, spend some time with them, get to know them as neighbors. Get to know your neighbors." And you can be in the inner city and there will be 10 creatures to learn. I can tell you, there are lichens on the side of the buildings. There are mosses in the cracks between the sidewalk. There's what we call weeds, meaning plants growing out of place, coming up between the fence and the sidewalk. There'll be rock doves on the ledges and then there'll be peregrine falcons nesting on the ledges and diving through the air and hitting a rock dove with their closed fists and breaking its neck, and catching it before it hits the ground and tearing it apart and leaving a shower of feathers behind. That's the exciting stuff about nature in the city.

There are other than human beings everywhere we live. We just have to stop and look for them. And so I say very often to my readers, or if I'm teaching workshops, "Just learn 10 in your neighborhood, and see if you can stop there." It's like eating the best potato chips. Can you stop with two? No, you learn 10 and you realize, oh, but there's that one. I didn't know that plant over there, or I didn't know that bird, or there is a lizard in my neighborhood. What's that about? Or, whose tracks are those in the snow on the sidewalk? It's like 10 are the gateway drug for learning nature wherever you live. And the truth of it is, our heart's and spirit's connections are with what's closest to us, the other beings with whom we share our intimate surroundings.

And I just want to say to those who are naturephobic, nature lives in you. There are 10 times as many microbial cells in your body of other species than there are human cells.

Brian McLaren: And they're good for you too, right?

Susan Tweit: Well, here's the cool thing. One of the most fun aspects of studying community ecology these days is studying who lives on and with us. And the whole field of study of your gastrointestinal ecosystem, got to love that, which means all the microbial critters who live in your guts, that whole field of study in the last 10, 20 years has taught us that not only are many of those creatures good for us, they help us digest our food. In some cases they actually do the digestion and we get the goods, but they also regulate our moods. They tell our brains how to feel, and then our brains, in a feedback loop, make our guts more hospitable to the beneficial bacteria and other microbes than if not. So, we now know that our physical

health, our nutrition, our brain health and our emotion and now psychological health is actually largely regulated by those microbes who live in us, in the gurgling stew of our guts. How cool is that?

Brian McLaren: Oh, my. Oh, I mean, it's awesome. It makes you realize we are not only part of an environment, but we are an environment.

Susan Tweit: We are.

Brian McLaren: Yeah, and we are interlaced with all of life in this amazing luminous web of life. Oh, Susan, people already have gotten a taste of your magic and the gift you have in helping people. You're kind of a matchmaker to help people get connected to nature's magic, and that's why I love the name of your Substack, Practicing Terraphilia. We'll put links for that there in our show notes and people will be able to find out about your books and other great resources there.

I have a final question. I think something that has to be added to a conversation like this is that when you love this natural world, you not only increase your wonder and your delight and your joy and your connection and your sense that you aren't alone and all of these amazing things, but you also increase your grief, because things that you love are being bulldozed and overheated and bleached and poisoned out of existence. And I wonder, I think we all have some deep sense that love and grief are deeply connected, and that if a person wants to avoid grief by loving less, they just reduce their own human experience, and they reduce themselves. But I wonder if you could talk about holding love and grief, because I know a big part of your professional life has also been helping people restore damaged habitats. So you've lived with the grief, I know, and sustain the joy and the love. I'd love to hear about that.

Susan Tweit: I like to say that grief is the measure of love. The greater the love, the greater the grief. And I have a great deal of grief about this living world and what we have thoughtlessly done as the human population has increased and our load on the Earth has increased, and that doesn't make me love it any less. It just makes me realize that in order to leave this world in better shape than I found it as best I can, and I'm going to steal from a Carrie Newcomer song here, Within Three Feet or So, it's a song where Carrie basically says, "We can only affect what is nearest to us. We can't affect the entire globe." But by affecting what is nearest to us, by practicing our terraphilia, by living with love for this Earth, battered as it may be, we can effect change, like the stone dropped into the pond where the ripples spread outward.

So, a thing I've done on the side all these years is work with restoring blighted pieces of land, usually urban ones. From making wildlife habitat pollinator and songbird habitat on the grounds of a coal-fired power plant in North Denver, much to the surprise of the union employees who thought that was a really bad idea and then fell in love with the hummingbirds and bluebirds that were drawn in, to spending 20 years restoring a block of urban creek that ran next to the industrial property that my late husband and I lived on in downtown Salida, Colorado, in the mountains in Colorado. I didn't set out to do that kind of work. It just calls to me.

When we bought, what we called, our decaying industrial empire, it was a piece of open



land where we could ... well, open once we cleared the industrial junk off, where we could build our house, Richard could build our house, and it had a historic building he wanted as his sculpture studio on it. When we bought that piece of property, he was intrigued by the building opportunities, and I fell in love with a block of channelized, dredged, and completely weed-choked and trash-choked creek that lined one side of that property.

And I just sort of said, "Huh, wow, I wonder if I could maybe just pull some weeds, and seed in some native plants and see what happened?" Well, 20 years later, the creek has sinuosity, and it's trout-quality water, and Northern Dippers, which are an aquatic songbird only found in the mountains, sing in the culvert under the street to practice their warbling songs. It's a laboratory for the local school kids, and it inspired the restoration of that entire rest of that small urban creek. I didn't set out to do that. I just had a creek running by my property, and I love creeks, and I wanted to do something nice for it. And so in my spare time, I pulled weeds and planted native plants and hauled out trash, and talked to people as they walked by wondering what the crazy lady was doing.

In the end, the creek took me in as much as I took the creek in. I think that is the antidote to grief over what's happening with this planet is to get to know your neighbors, learn what they could use from you, how you can reciprocate, as Robin Wall Kimmerer writes about in her brilliant book, *Braiding Sweetgrass*, how you can form a reciprocal relationship with nature in the world where you live, in your neighborhood. What small things can you do that will just give a healthy nudge to nature there? And it starts with getting to know those neighbors that aren't human, just a few of them. Get to know their lives, get to know their names, and fall in love. As soon as you open your heart to that world, it alleviates the grief, because you've become part of it, instead of this unwitting participant in destruction. You've become part of the community.

Brian McLaren: Mm, mm, mm. Oh, my goodness. Oh, my goodness. Thank you. Thank you.

Susan Tweit: Can I read one little thing about what I believe humans are capable of? It's very short.

Brian McLaren: I would love that. That would be a beautiful way to close. Thank you.

Susan Tweit: It's from the San Luis Valley, Sand Dunes and Sandhill Cranes. I didn't start out to write about where humans belong in the world, but that's what happened. "In comparison with other species, humans are not particularly impressive. We have no fins to propel us from stream to ocean and back again, no wings to power us thousands of feet into the air, no jaws strong enough to crack deer vertebrae in one bite, no idea of how to metamorphose from caterpillar to butterfly, much less wait out inhospitable decades as seeds. We have big brains, but they can be as much curse as blessing. What we do best comes not from our heads, but from our hearts, from an ineffable impulse that resists logic and definitions and calculation, love. Love is what connects us to the rest of the living world, the divine urging from within that guides our best steps in the dance of life."

Brian McLaren: Thanks so much for investing your precious time and attention in Learning How to See. I'm especially grateful to have you along this season as we learn to see nature in new and deeper ways. I believe a transformation in the way we see the Earth and all her creatures will deeply enrich your life personally, and I also believe that our shared future and the future of

our planet depend on more and more of us learning how to see nature in a new way. This change in seeing isn't just a matter of enrichment, it's also a matter of survival.

As a result of our being part of this season of the podcast, I hope we will learn to see ourselves not only in relation to nature, but also as part of nature. I hope we will learn to encounter the spirit or presence or glory of God incarnate in nature, to see the divine in all creatures and all matter and energy, including ourselves, as part of one sacred web or cosmic dance of life. I hope we will all be converted from destroyers or consumers of the web of life into its lovers and healers. If you're interested in learning more, be sure to check out the show notes for links to our guests and the resources they offer, and you may also be interested in my upcoming book, *Life After Doom: Wisdom and Courage for a World Falling Apart*.

Thanks as always to Corey Wayne, the skilled and kind producer of this podcast, and to the whole CAC community, staff, faculty, students, and supporters, and I'd also like to thank Sound Off Studios for all their work in post-production. If you'd like to leave us a question, brief message, or story, you can write us an email or send us a voicemail, and you'll find instructions in the show notes. If you enjoy this podcast, I hope you'll share it with some friends. Again, I thank you.