**Episode 50: River Guides and Freshwater Science Part Two: Getting everyone on board**

[intro clip]

Hello, my name is Susan Washko, and welcome to Making Waves, brought you by the Society for Freshwater Science.

In the last episode, Episode 49, we established the connections between river guiding and science as we heard from experts about how guides collect data and how guiding facilitates the spread of traditional knowledge. Now, I want to dig deeper into how river guiding connects to recruitment into river-related science and diversity, equity, and inclusion efforts in science. I know a lot of scientists that have spent time as guides, and I’ve been wondering if river running is a good recruitment pathway into science. In my mind, the more river guides from diverse backgrounds, the more diverse the recruits into river science will be. To learn about whether that notion might have some truth to it, I chatted with Maddie Friend, a former river guide on the Salmon River in Idaho and professional hydrologist/geomorphologist, and Alexa Young-Yee Spielhagen, a sociocultural anthropologist and outdoor professional who is an expert on the experiences of underrepresented groups in river recreation. These two rad river runner-scientists helped me to better understand the connections between guiding and scientists interested in conservation.

**Susan:** Alright, so thank you Maddie and Alexa for joining me, and I just want to start off by asking both of you, how did you get into guiding and did guiding bring you to your kind of natural science, anthropology, outdoor rec careers that you currently have?

**Maddie:** um yeah, I'd say mine is like, inextricably intertwined. The condensed version of the story is that when I was in high school, I went on river trips with a nonprofit called Grand Canyon Youth, which is a really lovely organization that Alexa and I are both affiliated with now even as adults. We do trips for ages for kids or I guess youth ages 10 through 19 and the Colorado River and Grand Canyon, San Juan, Verde River and few other places, but the cool linchpin, as we partner with USGS, National Park Service in the past, other organizations and so youth are doing what a lot of people call ‘citizen science,’ but I like to call ‘community science’ because citizenship isn't necessarily a prerequisite for that. So that's how I got into doing science on rivers, specifically, I was doing trips, you know with USGS working with the people who are later did my master's degree with. You know, and every youth had to do our own kind of little science project or educational project, and I did mine on what I at the time called hydrology and which I now knows is fluvial geomorphology, which I got my master's degree in at Utah State. So yeah so mine is super close right in there just I mean, and then you know we can always talk about how landscape works and how I always loved the water and growing up with that my family but yeah GCY, doing trips with them and USGS was it for me.

**Alexa:** Alexa here (she / her / hers). Um, I don't have a very good story, like there isn't a neat narrative. I don't know why I started paddling, I just really wanted to, for some reason, and so I learned how to kayak when I was in college at New Hampshire. The legend canoe club [laughing], which is nowhere near us. Anyway. But. So, like my parents are both immigrants to this country. They're not traditionally outdoorsy, at least not in that kind of like American model that you think of, you know, like going hiking in the woods, with the right apparel and that kind of thing. You know they love the outdoors but, you know, they would have never encouraged me to paddle by any stretch of the imagination, very safety-conscious. And then from there, I finished undergrad, was going to go to grad school had a quarter life crisis and went to guide training instead in my hometown and just kind of went from there. And anthropology and outdoor recreation or anthropology and river running had like absolutely nothing to do with each other at all, and I did not want them to have anything to do with each other, I didn't really want to wind up in this line of work, but this is, it's the line of work that wound up happening to me, and then it kind of got born out of like a sense of obligation to engage with it because I, from looking around and who I've run into I'm pretty you uniquely positioned with like my analytical tools and my background in the commercial river industry to be able to analyze it in an academic, rigorous way.

**Susan:** Now that's a cool way to think about it. It connected with tools that you had and tools that you gained along the way, I love that. So, what I'd like to know from both of you about the river industry and guiding is what kinds of bias did you face as women in river guiding or what kinds of things, do you know are problematic in terms of river guides in their inclusion.

**Maddie:** Easy questions.

**Alexa:** Keeping it light.

**Susan:** Light and breezy!

**Maddie:** Alexa and I both swim in this stuff all the time, literally.

**Alexa:** Metaphor, yeah.

**Maddie:** First for me as just as a side note is, I am a non-binary person, so I use pronouns she and they, say my experience isn't just womanhood but also as a like a trans-nonbinary person. But I'm very much perceived as a woman I'm very much perceived as a femme, so I think, and I think that's I mean that's one issue right there. Like a white woman that I think also you know brings in different things that that's kind of read as acceptable in the outdoors then femme is, I think you know traditionally not as but anyway yeah so. I think that's one thing is like you know a lot of gender discrimination and those different things, like most of the time you know I don't, I'm not super out with my pronouns to a lot of people, although I guess I'm putting it on a podcast right now. Which is fine, you know, but like on a trip, you know I think I always wait to kind of read the room, you know before I talk about it with people. Because yeah, I mean you know there's huge rates of violence against trans people

**Alexa:** very valid.

**Maddie:** yeah so yeah I guess experiences on the River um, I think the river is reflective of a lot of things in our western us society, and it has this faulty perception that people say that it's like ‘away from it all,’ and everything, but it's still very much like a hegemonic environment, meaning it's very focused and was only designed for able-bodied cis-gender white men with economic privilege. So I think coming in, for that I've had a lot of been very fortunate as compared to I think a lot of women and femmes, which is horrible, is that coming up through an environment like Grand Canyon Youth, it really does focus on, you know justice, equity, diversity, inclusion, even though those are buzzwords and like obviously there's still a ton of work to do, but I always felt very welcome based on all of my identities and then I got super fortunate when I started working for commercial use for a man called Curt Chang in Idaho and he was just an incredible boss, and really fostered you know a lot of at least for us like gender diversity and like diversity and like clearness like. You know I've worked pretty much every trip was at least you know, a mix of men, women non-binary people, I always felt really supported in that, and I know that's not everyone's that's not even close to most people's experiences with guiding. But, I think, yeah, then again, there's, you know, for a while it was always issues of but then of course you'd have your guests issues of like gender harassment and sexual harassment anything just from like, the kind of comments you get used to like, “Oh you're the trip leader” to you know more blatant you know, sexism and different issues and, yeah I mean I think all those things still persist and they make it incredibly hard for people to become river guides. I mean with you know the whole raft of other (haha raft) you know other things.

**Susan:** yeah, I think that you did a really nice job of explaining that, I love the part about away from the world, but the constructs are still there. I think that’s really important to remember.

**Alexa:** I just want to add to that that that's a huge like folk theory that people carry in America about so-called wilderness, is that it is an entity outside of politics when it is very much something that is constructed within and with politics in mind.

**Maddie:** And I feel like side note I didn't know what a folk theory was before you, an anthropologist, introduced it to me as I feel like this is like, you know, proving the point of this podcast bringing it together.

**Alexa:** But yes, in terms of bias, I have faced as a woman in guiding, so I am cis-gendered, I am also mixed race and, for me, my experience, you can't, it's inextricable, you know, I am really light-skinned, I'm half white half Asian so that's like you know, not that different, but I am visibly mixed race and it has followed me and been an issue I think just about everywhere I've ever been. Whether I understood it at the time is one thing, but when I look back and kind of start to understand and apply a lot of the things I learned in grad school, I was like oh that's what that was [laughing]. Um. Yeah, you know, it runs the gamut and it's really interesting, like I’ve talked to Maddie about their experiences I talked to some other friends about their experiences, and I just assumed that everyone had it really rough because I had it really rough because I came up in a company where when I trained, I was the only female in that company, so I only worked with men. I was, and that was you know I just didn't really think anything of it at the time I was a lot younger, but you know you getting screamed at by someone trying to make you miss the takeout, you know, getting screamed at by older guides like in front of passengers, I mean that happens so many times in different places, right? Like just kind of, and then, like Maddie indicated, it runs the gamut all the way up to sexual harassment and discrimination in it's like classic legal forms, you know we're not just talking about like I mean, actually, you know sexual jokes can be, and are used as evidence, you know of a hostile work environment in a lawsuit. But I mean, I think, and we talked about this in another podcast that I recommended to you about how the ways that, like the things that make river culture / river community so magical kind of that free-wheelingness also are really the right conditions for people who are predatory, and definitely run across that behavior and the more honest I am about it, the more and more women and non-binary folks have been like disclosing to me personally or publicly so it's definitely a big issue.

**Maddie:** yeah I think yeah, thank you for sharing Alexa I know that's I mean, I think, obviously, for neither of us it's not like it's like a super easy topic to talk about, you know, especially public-facing, but I think, for me, you know I mean I know Alexa really cares about it, too, but I just you know I want to, yeah I mean share my experience, and certainly not define anyone else's experience, this is all my own, but one thing that I always come to with both guiding and science actually is, all the time I'm like I wish it could be just a river guide or in my like a scientific career like I wish I could be just a geologist like if I didn't have to deal with like, the sexism, the cis-sexism, the like you know, like misogyny like all these things, I could just be a river guide. I mean just be a geologist, like that would be amazing like not having to do with sexual harassment like not having to, you know, deal with all these other things, and like I know I have you know a lot of privileges and like being a white person, being a femme-passing person like you know being like you know, like financially privileged and different things, and I think it's like, yeah, man, you know, if I could just do that, I think about how cool that would be I could just be our guide just be a geologist or...

**Alexa:** yeah, or just an anthropologist.

**Maddie:** or just an anthropologist. Yeah, I didn't want to like to say that for you, but...

**Alexa:** Oh, I've been wishing that really hard lately. Yeah.

**Susan:** I really appreciate you both sharing, I think it, it does really help me understand how the industry works and thinking about the way that science works, to me it's a lot of back and forth.

**Maddie:** You know Alexa and I have conversations often about, do we, you know, people like one thing we talked about like diversifying the guide pool or like people are like that's great, but like do we want them to come into these unsafe environments, but then also, at least for me, I think I’m like there is no fully safe environment, this is in every single industry, you know in different ways. It’s nice, is like honestly like I work in a different industry, right now, I did stop guiding during COVID and who knows what will happen, but I, you know I'm not sexually harassed, every day, and like it's a near daily thing like definitely from guests, and you know some of it is you just, you know, like the standard sexism, but, it's just I mean... I had one trip last year (or I guess 2019) that was all either lady or non-binary guides and all like lady or non-binary people, and it was amazing we all talked about it and, like just not having to like the latent sexism, and all these things that were there just not having to deal with it.

**Susan:** I’d love to talk a little bit more about the guests. So, I know in a lot of guiding tours there's some sort of citizen science aspect where, I know Maddie you've talked about you had these little cards and you would talk to people about the salmon in the river and I know there's, as we talked about in the last episode, there's light trapping for emerging aquatic insects on the Grand Canyon. So, if you both wouldn't mind telling me a little bit about the citizen science you do and kind of how you think that that helps your guests and what they learn from it, that'd be great.

**Maddie:** Yeah that's a great question, so I actually do a lot of that on my trips. The light trapping that Anya who, if you listen to the previous episode, works a lot with, that's really awesome. And so, for me, there's kind of two different branches, so I work commercial trips, which is what Alexa also works, what people think of you can just sign up to go, but then I also work for this nonprofit, Grand Canyon Youth. And that's you know, like youth can sign up, but it's slightly different than the commercial world as far as like permitting and different things go so, not the hugest difference in the world, but worthwhile to talk about, especially because we approach them differently. So, for Grand Canyon Youth trips, I can talk about, GCY is you know intended explicitly to be an educational experience. So youth from all over are coming on our trips and we're talking about, you know, citizen science or community science, rather, is what I like to call it, you know so that's either projects like on your talked about with the light trapping we do sandbar monitoring too with USGS, different data collections, you know some with the park service, with different tribes, you know, on plant removal, like all sorts of stuff we work with fish biologists many, many things. So, the cool thing about these, is these are, you know actual science work and research that's being carried out by these agencies are different organizations and our youth and us by proxy are contributing to that. So that is, I think you know the hands in the dirt actually doing the field work and that happens a lot on these GCY educational trips. We also do like service and they all do presentations all these things. So that's one box, at least for me. Another is commercial trips, and for me personally, I haven't had any community science explicitly on commercial trips where we're like gathering information. I know like the light trapping and stuff, they do do that, but that's like the guide having to take it along in that trip are doing like adopted beach photos, like photo monitoring. So, what I see you know commercial boating more is my opportunity to give a really well-rounded like holistic education so I'm constantly you know, sometimes just called ‘interp.’ You know short for interpretive talks and that's what I’m doing all day. You know I love chatting about the place in the landscape and making it connect to people and getting their feet in the sand and like taking in Idaho taking them up to a tree and making them smell that it smells like vanilla you know. And talking about, I mean I'm a fluvial geomorphologist, which means I study how water changes landscapes, and so that's you know it's perfect we can talk about the rapids, I can talk about the formations, I can talk about the sediment transport, high water. T hat's I mean yeah that's what I love to do so, for me, I view that as more as a lot more of a like an educational piece.

**Alexa:** I only commercially guide right, and you are always walking a very fine line as a commercial guide, between being ruled by the threat of trip advisor and all the like other things that you're bringing like a need for safety and like how you want to present the like, for me, now the Canyon, etc. Citizen or community science might go over well with some groups, but a lot of groups, you know this is their vacation and they want to sit on the beach and have a beer, you know chill out, that kind of thing. And also, primarily in Grand Canyon our guests are a lot older and wealthier and just not in that same, you know, they're not youth where you’re like, ‘learn things!’

**Maddie:** Although with youth, you kind of are like, I mean not like you have to do it, but it's a participatory experience, you are like, ‘okay guys, like we're all participating,’ you know. They're on, it's just like a totally different vibe than commercial which, like. You know it's not wrong it's just different they're like on their vacation you know so they get a little more space.

**Alexa:** That being said, they definitely I mean every time we get to run across a science trip, guests always seem to love running across them and getting like a lecture or something like that about what's going on in Grand Canyon that's definitely very popular.

**Susan:** I think that was a good explanation of kind of like the mindset of your guests, because something I’m really interested in understanding is, if you think that people that are on those trips could be introduced to science or the possibility that they could be a scientist through these experiences.

**Maddie:** For me, guests no, because honestly, most of them are retired. I think you know there's certainly top of it like informs conservation of caring about a place, although I don't actually have any research about that. But yeah for Grand Canyon Youth, like for sure that's where we're at like I mean that's how I came up that's how a ton of us came up and also, I think, for both being a scientist, but also being a guide a lot of us youth, who came up in Grand Canyon Youth are now guides for Grand Canyon Youth or other companies.

**Alexa:** So, not in a standard sense, like Maddie pointed out, they’re mostly retired or kind of end of career probably not going to suddenly become a scientist unless they already were one. But being in the Canyon specifically, it's really different from other trips I've done. So, I came from dailies, so like half-day trips, full-day trips, but you don't spend the night out. That's a completely different game from this two week immersive experience in Grand Canyon and there's a really high premium placed on interp from the guides to the guests. And I just what I did want to say is that there tends to be almost like a script to interp, kind of a cultural memory that's been passed down over generations of guides-- it's very standard. But, the really brilliant thing is when we have guides who are especially invested in some facet of the Canyon, so sometimes you have guides who are actually trained geologists, a lot of science guides different kinds, some more in biology, etc. Guests love that, they love actually having like detailed quality knowledge. And for myself, actually, though I found that kind of standard script of interp really alienating. I had a really hard time engaging with it, remembering it. I... this is a dirty secret; I don't care about John Wesley Powell. I truly don’t care.

**Maddie:** Right!

**Alexa:** I know that's like blasphemy, but

**Maddie:** It’s like these faulty bullshit white narratives that are placed aren't (you can put that in the podcast) like you know, like john Wesley Powell it's just like, more manifest destiny like white hegemonic colonial space in these that persists in how over land and water yeah so.

**Alexa:** It so it took me as like, as a guide who had all this like social science background, who comes from a different you know I’m at least a third culture kid. Sometimes I think about the math like maybe I’m a fourth culture kid, I’m not sure how many cultures I’m from. It took me a long time to learn how to make interp that was true to what I know and how I move through the world and is a unique offering. And it took actually one moment of like really quality mentoring from one of our senior guides, Kevin, love that guy. We were just talking one night and he was just asking me about like how I saw access conflicts and this and that, and then, at the end of our talk, he said that would make an amazing talk for the guests, I think they would be really into it. And I then I stayed up late and turned that into a talk and now it's a talk that I give every time. And it's been really powerful and because, you know, when we have a script of knowledge that is a moment of knowledge production right like we are passing on stories about a place passing on, this is how your relationship to a place to be, and so that is a moment where we can intervene and start to shift how people know what they know, how people process something, what kind of questions they ask, what kind of questions they stop overlooking. So that's what I tried to do, then, with my interp once I realized, I could do that and it was okay. And I find that to be a really useful way for introducing you know, hard science. It's pretty easy, it's pretty non-threatening you know. But you started talking about social science concepts and colonization or the construction of wilderness or whatever, that gets a lot more threatening because we're starting to talk about people's identities. And so, kind of pulling back the curtain on some of that and then showing people how to process thoughts has been really fruitful and it's been really gratifying to see how many people really enjoy having that kind of engagement in the Canyon.

**Maddie:** yeah, I mean I think it's tremendous work that you do, Alexa. And I feel like I’ve learned a lot from those things as a, you know, someone who's doing you know, a physical science. Yeah it can be it's for me it's a really easy entry point. I'm like, you want to talk about these rapids, let's talk about these rapids, you know. And I always try to like to make it bigger picture and bringing those social things.

**Susan:** This is really great to know, that when guides feel like they can teach the guests something you think they can learn better from you; I think that's a that's a cool tie-in. And I feel like what we're getting from this is that, while we might not be recruiting scientists out of the guests unless it's a nonprofit trip, you're at least, perhaps, increasing support for conservation, for equality and equity, and I think that's a really nice really nice thing that I didn't think about in this. So, let's go to our wrap up question about what does being on a river bring to you, and what feeling, do you wish everyone could experience being on the river.

**Maddie:** First of all, I love this question, this is amazing. I think it's a beautiful question of what do you get from the river and you know the big why. For me, I just feel like I get to be my full like authentic like unbridled self, it's really beautiful. I think that's a function of place, and of the people there and I think there's a lot of trips, you know, touching back to what we talked about earlier with like harassment and issues where you don't get to be that. And that's really, really sad, for I mean as myself personally, as experienced but, like the beauty is in you know the place and then sharing it with people that you love and no one can take the place away from you. And I think yeah that's really beautiful and I hope that everyone, you know gets to feel that way in their lives, whether it's on a river or not I wish I hope at least you know the big the big goals big hairy audacious goals to be had is that everyone who wants to be on the river, can, you know, and like has options too to learn about it to go to become a scientist if they want to become a guide if they want you know, to have all these open avenues, you know that aren't necessarily reflective or available right now. I think about myself and my career as a guide, I’ve been a guide for like, this will be my 12th season and I’m more part time now. But that's you know, I just want to open it up access-wise for people for everyone to get to share and have this opportunity if they want.

**Alexa:** What I love about being on a river is, it's this perfect moment or series of moments, like when everything clicks together there's like deep, deep focus, being deeply present. And there's this balance of flow and aggression, you know. And a sense of becoming one with a disparate collection of entities. So, there's like me, the oars or the paddle, boat, the different currents, all those things. I think that's also why I really love paddle guiding because it's like this extra challenge because you're taking this group of usually highly individualistic- and in our society we're very, very individualistic, part of how we conceive of ourselves as humans- and you're turning them not just into a collective but into a unit, you know, into an entity that's connecting with the current with the river with everything in their immediate environment. And it's just when it's right, it's just so beautiful and perfect. And just more generally, especially on Grand Canyon, that feeling of things just slowing down and again being like really profoundly present, and I’ve noticed that this is actually carried back into my regular life where I’ll just sit and I’ll be like wow look at that bird, look at all the weird little things it's doing, and just zone out onto some like tiny facet of what's going on around me and I don't think I really used to do that before I was in Grand Canyon. But being that's the luxury of a 14-day trip and I just so highly recommend a 14-day trip to anyone who can, who has the opportunity, honestly, also the privilege of doing one. It's so different from anything else that we tend to experience in our daily life here in the States. And to echo Maddie, this is what really I mean this is why I’m doing this anthropology why I’m doing my dissertation research project, which I’m going to give a little shout out to you I’ll give you the link-- I am currently like interviewing nontraditional outdoor professionals and their experiences working in the outdoor industry. But like that beautiful moment, that perfect moment or series of moments, those events. I mean they mean so much to me, they're one of the most important things in my life, and it's one of the things that has harmed me the most in my life, and I don't want that for other people. No one deserves to have the thing they love the most be the thing that harms them the most. And it's not just rafting, you know. I’ve seen this-- you'll follow a lot of different like diversity and justice influencers in the outdoors a lot of them talk about the same thing, like losing your fire, your love, or just being exhausted, because you have to deal with all these other things and, ideally, we can be in a world where we can just love this thing and be in this thing and not have to juggle other things that suck.

**Maddie:** Perfectly said.

**Susan:** Well, I want to thank you both so much again for sharing your experiences and sharing your thoughts and what you love about the river and I hope that this podcast does it inspire a lot of people to get out there and find that joy and inspiration, so thanks so much.

**Maddie:** yeah Thank you Susan.

**Alexa:** Unmute! Thank you. [all laugh]

Though this was a heavy interview at times, it was definitely a lot of fun. I learned that

making river guiding a safer place could lead to improved DEI in river science. Most importantly though, I learned that river experiences encourage youth to seek out river recreation and river science. Giving young people these experiences can be logistically challenging, but luckily, pathways are emerging to get us there. I encourage you all to check out the River Field Studies Network and Grand Canyon Youth to learn more about river education efforts and get involved. To have the best science, everybody has to be able to get on board a raft.

I’m Susan Washko, and thanks for joining me for this episode of Making Waves.

[outro clip]