

Episode 55: Changing views on watersheds in the field

[intro clip]

Susan: Hi everyone, welcome to Making Waves. My name is Susan Washko, and today I'm going to speak with some amazing undergraduate students.

This past May, I attended the 2022 River Rendezvous on the James River through the River Field Studies Network. With the ultimate goal of becoming field course instructors on rivers, we learned river safety, talked about trip planning, and practiced teaching lessons in the field. We, the participants, were lucky enough to partner with a field course from Virginia Commonwealth University (VCU) called Footprints on the James to practice teaching to real students. The students in the Footprints course were paddling their way around the James River watershed, learning along the way about the ecology, hydrology, geology, sociology, and the history of the river. While those of us from the River Field Studies Network only got to spend a couple days with them, we were so deeply impacted by how passionate these students were about the river. So, I followed up with them to do an interview to learn from them about how their field experience shaped their view of what a watershed is.

I asked the students, "How did your view of a watershed change from before you started your journey to when the experience ended?" This is what they had to say.

Student 1: My name is Anna and I'm a fourth-year environmental studies major at VCU and I just completed Footprints on the James. I think before this trip, I didn't really totally think about watersheds as a very multifaceted system, I think I thought about them, mostly, just as the water and not as the social and environmental impacts that they have around them. Since going on this trip, I just sort of learned how every piece of, everything that touches the water is impacted by it and the water is impacted by all those as well, so every person that lives near the water is impacted by it and every plant and critter and piece of dirt in it is impacted. And it really it really shapes like the way our society is built, even. You know Richmond and Jamestown and these big cities that are on the river are on the river because of where the river is and how it's built and the resources that the river provides. And that was really interesting to get a better understanding of. As well as just learning about the river history from the people who, you know, have gone down it and lived on it and worked with the river for their entire lives. Just made me have a much greater understanding of appreciation of what the river and a watershed is.

Student 2: Hi I'm Peyton, I'm a junior at VCU, and I'm studying environmental studies. Before 'Footprints' I wasn't very familiar with other sections of the river outside of Richmond. Or like I'd been to Jamestown before, but like I wasn't really familiar with what's living there, and particularly with the upper section of the river, I was really unfamiliar with it had never been to any part of the upper section before. And I was having a bit of trouble picturing what it was going to look like, so we were given some papers before the class started going over the river continuum concept, so I was aware of, like the river was going to be more shallow and the water will be moving faster, but I wasn't sure, I couldn't really picture what it was going to look like. And that actually ended up being my favorite section of the river. I was really amazed by it, and I remember the first day when we were canoeing, I was just staring in awe like at the mountains like as we were canoeing, and it was just beautiful out there. I was definitely staring up at the mountains, maybe got a little sidetracked from the river, but it was fine. This experience really. I

guess, like added to my appreciation to the river. I've always been like really drawn to water, and so to see all the like wildlife there and to see all like the land from the mountains to like getting closer to the ocean. It was just really beautiful and I can say that I have a greater appreciation for the river and all of its beauty.

Student 3: So hello, my name is Kiki, and I'm a biology major at VCU. My view of the watershed has changed immensely because I didn't really know about anything about water or rivers starting this course, and watersheds and outdoor recreation weren't things I was accustomed to. I think that's why it intrigued me to try out this class. The classroom sort of thing taught me how to memorize facts and basic concepts, but the field class and lessons helped show me that life doesn't always fit into those perfect boxes and categories that we make up in the classroom. And I learned that the zonation of the river as told through the river continuum concept really helped me a lot when hypothesizing why life organizes the way it does in each section of the James River, which is where this class took place. Having Dan Carr float alongside us and James Vonesh following behind with the cameras, pointing out life around us in real time kind of taught me to apply the academic knowledge to the river and the ecosystems, and I find myself better able to slow down and appreciate in a way a biologist would as I go on into just life, if I ever find myself outdoors or maybe even finding connections in a future class

Student 4: Hello, I'm Olu Johnson, I go to VCU, my major is environmental science, and the part of Footprints on the James I liked the most about this was simply being able to discover how the James affected not only the towns and cities across our river, but just America and Virginia as a whole. Particularly, just learning about the batteaux and the upper and middle part [of the river] and being able to like actually getting on it and travel across the river. And just learning how much it affected different cities like Lynchburg or other small towns. I didn't even know at the time how useful it was back in the colonial era where colonists were on this boat traveling tobacco up and down the river and trading it to different cities and even countries as well. It was really an economic powerhouse before the train and I just found that really fascinating to be honest. And a small other part was simply the lower part of the James and how useful it is to the city of Richmond and the lower part of Virginia with just different power plants and shipping containers shipments/ships coming through it from the James.

Student 5: Alrighty, my name is Joi Coleman, I am a second year student, and I will be transferring to VCU to pursue an environmental studies degree. Before the trip, I generally thought of a watershed as like this huge like basin, with a drainage point that had like a focal point. I was really focused on like the culmination of the watershed but never really the separate pathways. But that became really obvious to me after the trip, like the importance of the individual within the watershed. And that was really, really obvious with like importance of runoff and the difference in water quality above Richmond at the fall line* and below Richmond at the fall line. So, for example, when we were paddling in the water below Richmond, even though, like the paddle is like four feet, like only four feet in the water, you can't see the end of the paddle in the water, there's so much sediment runoff and pollution. But in the upper James, I mean, you can see the bottom of the river itself, it's just like such a stark difference. And it really gives you an idea of how all of those like different pathways have come together. Like, by the time it gets to the fall line and all of that pollution is together and it gave me a greater sense of the importance of emergent properties within the James. And so all those cattle farms, all the storm drains, you know you never really think about how important they are to the river until like after heavy rain and it's all like flowing into the same source. So that was something that was

that was really enlightening and really helped me get a better grasp of everything that goes into watershed.

*the fall line is the geologic separation point between the piedmont and the coastal plane, demarcated by a wide, channel-spanning waterfall in the river

Susan: Thanks so much to those students for being willing to talk about their experiences on the river. What I was hearing from the students is that traveling throughout the watershed helped them understand how dynamic watersheds are. They were so interested in human impacts on the river and how they change from the headwaters to the Atlantic Ocean, and how historical uses of the river shape today's James River experience. The interdisciplinary approach to watershed exploration allowed each student to explore their interests regarding the river while learning about all the other aspects simultaneously. It's so great to hear that these students valued their time in the field!

I encourage you all to check out the River Field Studies Network if you're interested in undergraduate education on rivers and if you have ideas about water-related field courses (like Footprints on the James!).

Thanks for listening, hope to catch you in the next episode of Making Waves.

[outro clip]