

Tim Cline:

You're listening to Making Waves, fresh ideas in freshwater science. Making Waves is a monthly podcast where we talk about new ideas in freshwater science and why they matter to you. Making Waves is brought to you with support by the Society for Freshwater Science. Hi, I'm your host, Tim Cline. This month's podcast is a little different than usual as we shift from a focus on outstanding scientific research to an interesting story of how concerned citizens who care about their local waterways can take action into their own hands to improve stewardship, educate, and even monitor those waterways that they care about most. My guest today is Kelly Stettner, the director of The Black River Action Team, the grassroots watershed organization in Vermont. Kelly's going to tell us a little bit about how she started The Black River Action Team, how they've grown and what they're doing now. Well, thanks for agreeing to do this. I'm excited about this topic.

Kelly Stettner:

Well, cool. Yeah, I'm excited you guys are interested, so that's very cool.

Tim Cline:

I guess how did you get started with The Black River Action Team?

Kelly Stettner:

Well, that's actually one of my favorite stories. Back in 2000 my husband John and I had just moved to Springfield, Vermont and we had a little daughter, she wasn't even two yet and we were walking across a bridge over the river near our new house, our new home. And I always like to look in the rivers. I always love to see if there's fish turtles, beavers, ducks, anything down there. And instead what was looking back at me was shopping carts and tires and cinder blocks. So I made the mistake of saying out loud what I was thinking, which was that, man, that's really terrible. Somebody should just do something about that. Because my husband was right there and he elbowed me in the ribs and said, "Well, you're somebody." So that pretty much got things started, that got the ball rolling on the river cleanups.

Kelly Stettner:

But I'm a secretary by day, been with the same company for 20 years. So anything I was going to do on the river was going to end up being in my spare time. But I got together with a couple of my coworkers, my husband and our daughter for ... I had them for about an hour and a half before she had to go home for a nap, which I had, but we managed to clean about 200 feet of riverbank and pulled out a dozen shopping carts, a handful of tires, some yard sale signs, a few bags of household trash. It took us about four hours and boy were we tired when we were done and I kind of thought, "That's it, we're done." But the next year one of those coworkers gave me another elbow in the ribs and said, "Hey we doing that river thing again."

Kelly Stettner:

Okay. Well let's pick a Saturday. Let's do it. Because this is all spare time. It's all grassroots. It's all volunteers. And we did it again and we had about a dozen high school kids coming to help us. And a couple of more before you know what, this has become an annual event. People bring their kids, I've got one family, they bring their grandkids, scout packs come out to help. We've got football players, the rotary club. One of my favorite photos is a wet, muddy, rainy, cold day and we had the guy running for local representative from the Democrat party and the guy running for representative from the

Republican party working side by side, almost hand in hand, to pull a shopping cart out of the mud. It was great.

Tim Cline:

So what started as this river sweep has now evolved into much more, and I think you mentioned you were doing some educational outreach using bugs, and using bugs to teach about water quality?

Kelly Stettner:

We are, and that's kind of ... Being a part time thing that I've really had to do in my spare time with no money, I've had to get very creative and outside the box. So looking at water quality, I wanted to do something with water quality since our second cleanup in 2001 but I had no money, no volunteers and no real knowhow. How am I going to get these samples to the lab? How am I going to pay for the tests? No idea what I was doing. What would I even do with the results if I got the tests back? I don't even know what that means.

Kelly Stettner:

So I got talking with the guys at the state and they said, "Start looking at benthic macroinvertebrates." I said, "What?" But they explained how river bugs really do provide an overall sense of the water health and they explained why, I'm looking at ... And I needed it in layman's terms, for myself as a self-taught person and also for the people that I do bug hunts with, I needed to be able to talk to them about how to tell a stonefly larva from a mayfly larva when you're looking at it in an ice cube tray under a magnifying glass.

Kelly Stettner:

It's been really, really interesting for me to take river bugs to everything from the local wildlife festival to I bring them into schools sometimes. We homeschool our two kids and our older daughter who is now 17, she's been coming with me to this school since she was about eight and doing bug hunts in the classrooms with the kids. And we use them for everything from learning about the food web to learning about physical adaptations of these creatures and how they inform water chemistry concepts for the older kids. And it's kind of led to even more, because even though we started a water quality monitoring program, since tropical storm Irene hit, we'd been using the river bugs to look below the surface. And just this last ... It's taken me about three years worth of research and prep work to line up a more detailed study of the bugs. We're looking not just at what's on the ... Below the surface of the water on the river bed. We're looking at what's under the river bed. I think that was something that kind of piqued your interest too.

Tim Cline:

Yeah. Yeah, definitely. If you want to talk about that, that'd be great.

Kelly Stettner:

Yeah. Yeah, that would be awesome. And I get rolling because I get excited. This is ... Well, it's been super fun for me because I'm a desk jockey by day and I guess river superhero by night. I'm going to ... Planning workshops and then going to events and doing storm water outreach and all this other stuff in my spare time and on my lunch breaks, and whatever I can do to spread the word about what we're doing is a lot of fun for me. So a few years ago I got contacted by the regional planning commission and they said, "Look, Springfield's got this old industrial history, lots of chemicals and solvents and stuff used

to be kind of poured out in the trench in the backyard behind some of these old factories, were stored in being tanks underneath the factories or in big vats or what have you."

Kelly Stettner:

Now 20, 30, 40 years later, the factories are empty. They're not doing anything anymore. And even the owners and developers have dissolved and they're not even around to be held accountable for what's left behind once they vacated the premises. One of the biggest brownfields in Springfield, possibly even in Vermont, is the old Jones and Lamson building. It's right on Clinton street in Springfield, right, right in the outskirts of town and it's about maybe 100 feet in the black river and they had all kinds of solvents that they would use to degrease the machine tool parts and those things would get ... I don't think at Jones and Lamson they were necessarily dumped into trenches, but they were stored in underground tanks, which of course over time are going to leak, degrade and basically just break down and release these things into the ground water.

Kelly Stettner:

So what we're trying to do, I can't afford chemical tests. I can't afford the equipment and I don't have the time and I can't afford the testing of the water samples if we were to try to collect, let's say, pour water, where the groundwater is going to seep up into the river. That's where we're going to be looking for impact. Because if it's out of sight, it's out of mind for most people. So what we've been trying to do, and this is what's taken me about three years to figure out, is how best to use river bugs to look at what's coming up out of the groundwater. So we had to start looking below the actual bed of the river at the toe of the contaminated bank. Of course the planning commission said, "Gee, share with us your water quality information but don't go near the contaminated site yet. We really want to have some time to try to out what's happening in that groundwater before volunteers are allowed to go poke around in there."

Kelly Stettner:

So we worked with the planning commission and we worked with the developer who owns the building and the site and we started doing ... We built colonization tubes. I built four of them and we planted two of them in the bed of the river at the toe of the bank, about a hundred feet upstream, more like 200 feet upstream from the contaminated bank. And the other two were installed about 300 feet downstream of the contaminated bank. And the point of this to start with was, hey, let's make all our mistakes now before we're looking at the contaminated sites, see how we can tweak the study and make it more effective, and refine our goals. The real focus is to allow the [inaudible 00:09:50] to colonize the sediment that we install in these tubes from the groundwater so we can then collect it and start looking under a compound scope and see what's actually there, what might we expect to find as we move closer to the contaminated site.

Tim Cline:

So have you collected any of your bugs or is this ongoing?

Kelly Stettner:

Well, we planted the four tubes in July, went back six weeks later and pulled three of the four tubes. One of them was actually we think vandalized because it was too close to a swimming hole upstream. Couldn't find the tube anywhere so we presume it's gone, and the furthest one downstream was vandalized by raccoons. The duct tape did not hold and we collected it anyway just on the off chance

that it wasn't completely useless. But we did get two good samples and they are right now sitting in my basement with rubbing alcohol and some rose bengal dye to stain the sample, and I'm just waiting on a compound scope, which I should have by the end of the week. And we're going to start looking and right now I'm going to start with my two homeschool kids and we're going to start drop by drop and see what we can find.

Kelly Stettner:

To me, it's citizen science at its best because we don't have quite the constraints of the quality control rigors that that folks in a strict scientific community have to adhere to. But we basically want to learn about what's down there, see what we can find, see where we messed up, make it more raccoon proof and more vandal proof and do it again next summer and do it better and get more samples, and the more we do it the better we'll get at it. And then in a couple of years when we're able to access the [inaudible 00:11:44] of a contaminated site, we'll have some level of population data to know what we're going to compare it to.

Tim Cline:

Speaking for yourself and also talking to your volunteers, what makes you guys passionate about this project, about the team and continuing both the monitoring efforts and the cleanups year after year?

Kelly Stettner:

Well, it's funny you should ask that because I've had ... The cleanup is really the main ... It's like our signature event. A 100 people turn out for this thing across five different communities. We've got local sponsors, we print up tee shirts for everybody. It's a big ... It's almost like a party. We even had a live music where we played music on some of the trash that we brought in. Seeing the kids banging around on tires and shopping carts and trying to make musical instruments out of them. We really do have fun with it, but somebody asked me after the last one, the last cleanup, "Man, look at all this junk we pulled out. Look at all these tires over 40 tires in a two mile stretch of river. Doesn't just make you mad. How do you not get disheartened? How do you not get discouraged by it?"

Kelly Stettner:

It occurred to me ... I had to think about it for a while, but it occurred to me that it's not that I have a goal for a trash free river, it's that I have a goal for people. I want to toss the pebble in and see how many people I can bring in to taking an interest in the health of the river. It really is our river, stewardship just happens in the backyard. And I think that's really the impetus for me.

Kelly Stettner:

That's really the crux of it for me, the passion comes from my story. I decided to step up and be somebody and I want to try to encourage and inspire, I hope, other people to step up and say, "Geez, she could do it and look at her, she's a secretary. I can do this. I can do that and be somebody. I can clean up tires and I may not know much about river bugs, but I can learn." And just kind of be the example for other folks and try to get them to join me in taking care of this river. It's beautiful, it's got a lot to offer and it really is ours to take care of.

Tim Cline:

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