Transcript | Episode 4 | March 3, 2026

Rivers Reconnected: Healing Waterways and All They Support

JAY FEINSTEIN: So, these are some of the types of weeds that cause blockages?

TOM BARRON: Oh yeah. These phragmites, the problem with them is their root system goes down three feet and the problem is disposal because if you take 'em and just put 'em anywhere, they'll grow.

JAY FEINSTEIN: Oh, look at that, is that an otter?

TOM BARRON: Could be an otter. It could be—

MAREA GABRIEL: Muskrat?...Muskrat.

TOM BARRON: That's a muskrat.

JAY FEINSTEIN: That's a muskrat?

TOM BARRON: Yeah, it's got the long tail and they, when this is all a pond in the spring, they swim back and forth a lot. And that's where the blue heron—but you can see how overgrown this is. That's why we need to do something down here.

MAREA GABRIEL: You're listening to *Nature is the Solution*, a podcast from The Nature Conservancy. It's a show about how nature could solve some of our biggest challenges. Because doom isn't the whole story. I'm Marea Gabriel, senior freshwater manager for The Nature Conservancy in Massachusetts.

Today, after three episodes on the coast, we're turning inland to focus on our rivers and the ways connected waterways support both people and nature. Rivers stitch together landscapes and help communities and wildlife thrive.

In Massachusetts, The Nature Conservancy's goal is to protect, restore or connect 1,000 miles of rivers, which is part of TNC's global goal of 620,000 miles. But only 1/3 of the world's rivers remain free flowing—and only 2% in MA! Freshwater plants and animals have declined 83% since 1970, and half of all people on earth now live in water-stressed areas.

To get a closer look, our podcast producer Jay Feinstein traveled to the Taunton watershed in southeastern Massachusetts with me and my colleague Alison Bowden, director of conservation science and strategy for The Nature Conservancy in Massachusetts. There we saw firsthand the life contained in these waters.

ALISON BOWDEN: And the number and variety of insects that you see on a rock like this helps you understand how healthy the water is.

JAY FEINSTEIN: Most people would think rocks are lifeless, but clearly not.

ALISON BOWDEN: This is a life-full rock [laughs] and that's one rock I just pick—I just picked up.

MAREA GABRIEL: But we also saw the barriers that interrupt a river's natural flow, such as invasive species and sediment deposits that block waterways, and old dams that disconnect habitats.

TOM BARRON: See this herring run? Couldn't tell it was here. We're gonna bring you up here and get you to the dam, close and personable.

MAREA GABRIEL: We'll get back to our day in the field in a moment. But first, let's get into why river connectivity is important in the first place. Jay talked to me about this in the recording studio.

JAY FEINSTEIN: What does river connectivity actually mean and why are we talking about it?

MAREA GABRIEL: Okay, so, I like to use an analogy. I think of rivers like arteries for the earth and so, like our circulatory system that carries blood, oxygen, and vital substances to sustain human life, rivers carry water, oxygen, sediment, nutrients that sustain healthy, fresh water and ultimately sustaining all lives, people and nature.

When you have blockages to arteries—like if you have a blockage to a river such as dams, culverts and other restrictions—they can have significant consequences such as catastrophic declines in migratory fish, degrading water quality, increasing floods and increasing costs to communities.

JAY FEINSTEIN: So, we have rivers everywhere. Most people have seen a river, have been to a river, live close to a river, but river connectivity probably is not top of mind for

most people. Most people do not look at a river and think, oh, how connected is this river? But I wanna ask you, how connected are most rivers? Is this a huge issue or is this certain rivers that we should be concerned about?

MAREA GABRIEL: No, it's a worldwide issue. In Massachusetts alone, we know there are over 3000 dams—and there are more than that—and many of them are old, they're no longer serving the function that they were originally built for. Only about 10% of them do serve that function—which is for water supply, for power and for flood control—and because they're in degraded conditions, they can lead to breaches, dam failure and flooding downstream. So, there are—some of them are—hazards to public safety.

JAY FEINSTEIN: What happens when a river is disconnected? And you had a great list to start with.

MAREA GABRIEL: I just wanna share an example, actually, this is a very personal example—a story. So, before I joined The Nature Conservancy, I was an aquatic biologist for 20 years and I spent a lot of that time diving and snorkeling underwater, and really kind of had a fisheye view of the difference between free-flowing rivers and those that were blocked with dams and got impounded behind the dams. The system changes dramatically, and with that, you see dramatic declines in species presence and diversity.

Once you would be swimming along and you'd get into an impounded area. The water becomes stagnant, sediment builds up behind the dam, you could try to walk in that and sink two to four feet in all that sediment that's built up there, water temperatures get warmer and that's, you know, cooler water holds more oxygen.

So, water temperatures get warmer as nutrients fill into these more impounded, slow-moving stagnant areas. Invasive plants, it becomes more prolific for plants and algae, and so, right away without even looking up that there's changes in the system. Just, those are indicators, they're kind of like [a] "canary in the coal mine" type of thing.

[music]

MAREA GABRIEL: I'm just gonna throw that back behind you guys.

UNKNOWN SPEAKER: Yeah.

MAREA GABRIEL: And then AC in the back…

MAREA GABRIEL: Alison, Jay and I made our way to the Taunton watershed to witness it firsthand, up close, why connected rivers matter and to talk to someone who spends his days thinking about connectivity. Our field visit started in Lakeville, Massachusetts, home of the Assawompset Pond Complex.

ALISON BOWDEN: Good morning, Tom!

TOM BARRON: Did you text me?

MAREA GABRIEL: I didn't, I'm so sorry [laughter] I just said that, I said, "oh no, I forgot to text."

ALISON BOWDEN: She was gonna text you from the car and I said—

TOM BARRON: I'm gonna say—my God, come on in—I'm gonna say, I have the phone right by me.

MAREA GABRIEL: I'm so sorry.

JAY FEINSTEIN: Nice to meet you.

TOM BARRON: I'm Tom.

MAREA GABRIEL: We were there to meet up with Tom Barron, member of the Middleborough-Lakeville Herring Fishery Commission and Assawompset Pond resident. You might recognize his voice from the top of the show.

MAREA GABRIEL: Should we take our shoes off as we step in?

TOM BARRON: Oh my God, this is a cottage.

MAREA GABRIEL: Okay. Okay.

[laughter]

TOM BARRON: Do you know how many people come in here and say, "ah, Marea, did you see this? His wife lets him keep fishing rods in the house."

[laughter]

TOM BARRON: Okay?

MAREA GABRIEL: We met at his house, perched right on the water, with big windows and plenty of natural light. From there, you can't miss the water, the views pull you in.

JAY FEINSTEIN: This view, by the way, that is such an amazing view right out your window.

ALISON BOWDEN: Unbelievable.

TOM BARRON: Do you know, every single day, how many times my wife and I say we're blessed? And we got this cottage the old fashioned way—we inherited it. My mother-in-law used to live here for so many years and when she passed—my wife's an only child—that's how we got this. But the whole thing about this Assawompset Pond Complex, it's really special. You know, it really, truly is.

JAY FEINSTEIN: Oh, for sure. I mean, do you ever get used to that?

TOM BARRON: No.

[laughter]

[music]

MAREA GABRIEL: We all sat around his kitchen table to talk about his perspective on the connectivity issues facing the Taunton watershed.

JAY FEINSTEIN: And thank you for letting us just put a microphone in your face [laughter] as soon as we enter your house.

TOM BARRON: That's fine.

MAREA GABRIEL: I told him—

TOM BARRON: We can sit down right over here.

MAREA GABRIEL: I warned him.

TOM BARRON: Oh no, that's fine.

JAY FEINSTEIN: Yeah, but like, there will be microphones.

[music]

MAREA GABRIEL: So, this is the map Alison and I were referring to. So, if you look, you'll see the map here of Massachusetts, this gives you a sense of where the Taunton watershed is in Massachusetts.

If you're not familiar with the term watershed, I like to kind of think of it as a watershed is like a bowl or a funnel, and no matter where you place a drop of water, it's gonna trickle down the sides and collect at the bottom of the bowl. So, a watershed is an area of land—like that bowl or the funnel—that drains water from rain, from snow melt, from roadway runoff, uh, down slope through lakes, wetlands, rivers and streams, [and] groundwater.

So, the Taunton River watershed itself is the second largest watershed in the state at over 570 square miles. For context, that's 160 square miles bigger than Cape Cod, or almost almost half the size of Rhode Island, and all the land uses in that watershed are draining down into the fresh water systems.

JAY FEINSTEIN: So, is that right here?

MAREA GABRIEL: Jay's pointing to a particular area of interest to Tom, the Nemasket River. It's a place where he has seen damage to fish populations. The Assawompset Pond Complex is the headwaters for the Nemasket River, a major tributary to the Taunton River.

TOM BARRON: That's the Nemasket River, yes.

JAY FEINSTEIN: Wow.

TOM BARRON: That's where we had our last weed removal, and it happens yearly, but the problem is there’s so much weeds there, you can't kayak it down. Well, maybe you guys can, 'cause you're young [laughter] but really, you can go about 400-500 feet and all you paddle in is milfoil.

ALISON BOWDEN: It’s really good exercise.

TOM BARRON: It's wonderful exercise.

[unintelligible]

TOM BARRON: It is.

JAY FEINSTEIN: Wait, so what is it that kills the fish?

TOM BARRON: What is it [that] kills the fish? Well, the milfoil plants give off oxygen during the day and carbon dioxide at night. So, this stuff is so thick they get in there and once the CO_2 happens, it depletes the oxygen, so then they die. And yeah, it changes the pH—[it's] more acidic.

MAREA GABRIEL: At the top of the show, we saw some of the invasive species and unnatural build up of sediments that block river systems. The Nature Conservancy has worked with Tom, the regional planning agency and other community groups on weed removal and channel restoration projects here to help connect the waterways.

TOM BARRON: So, once you clear all the sedimentation out, and once you get rid of all the invasive weeds, now you're gonna see how the system works.

MAREA GABRIEL: The other major impediments to connectivity are dams, but as Tom says, it's all connected.

TOM BARRON: I mean, the dam has the river—everything's related—and that's how you have to view it. This whole system is a whole. At normal pool, this holds 1.7 billion gallons of water that's gonna drain through the dam that we're gonna show you.

MAREA GABRIEL: This is a good point to mention that river connectivity isn't just about a river flowing downstream with impediments. It's also about the floodplains on the banks of the rivers. Alison can explain more.

ALISON BOWDEN: When you think about when it rains a lot, you see water rise up and it can spill out onto what we call the floodplain—so, the edges of the river. Fish and turtles and other species that live in rivers use those habitats on the sides, as well as moving up and downstream in different parts of the year, to find different things to eat, to find mates, so it's really important rivers to be connected both to themselves and to the lands around them.

MAREA GABRIEL: This podcast is about nature and people, and floodplains have a particular impact on people, especially after heavy rains.

ALISON BOWDEN: So, in October of 2005, after several days of heavy rain, the National Weather Service issued a flood emergency for the city Taunton. There were four dams in close succession within about a mile of each other on the Mill River, which is right in downtown Taunton, and those dams were not serving the purpose for which they were built.

MAREA GABRIEL: That is, they were no longer in use. They were more of a hazard than an asset at this point

ALISON BOWDEN: One in particular, that was called Whittenton Dam, the fear was if that dam broke apart under the pressure of the water that it would cause that whole series of four dams to fail, and all the water behind all of the dams would end up as a wall of water running through the city Taunton. Fortunately, the dam was able to be stabilized, shored up and it stopped raining, so that wall of water that was feared didn't take place.

But the fact that there was such extreme flood risk along that river, which occurred in 2005, had occurred in 1968, had occurred in 1886, but in the earlier flood events, the dams were being used. They were important to the industry of the city. By 2005, where they weren't needed, that actually allowed the conversation to start about dam removal, which was not a conversation that really existed in the state or really much in the world. That this infrastructure that was constructed hundreds of years ago for a purpose that society and the owners had at the time, does that purpose still exist? And if it doesn't, can we actually think about an alternative future for this community and for the river?

MAREA GABRIEL: A lot of work went into answering these questions and in the end, three dams were removed and a fourth was reconstructed with fish passage. After the dams were removed, fish swam up the Mill River for the first time in 200 years. But dam removal can be a touchy subject. In the case of the Mill River dams in Taunton, it took a lot of community engagement to generate support for the dam removal projects.

JAY FEINSTEIN: In a way, I do understand some of the initial concerns that residents had. It's hard to imagine things changing when they've been the same way for such a long time.

ALISON BOWDEN: I grew up in East Providence on the Ten Mile River, which is very similar to the Mill River. I used to ride my bike out to a dam in Rehoboth that I called a waterfall. I didn't know [laughs] it was having any kind of impairment to the river. There hadn't been migratory fish in my watershed, which was right next to the Blackstone, in hundreds of years.

I didn't know it was missing because all those dams were there in the watershed. So, as someone who went on to study aquatic ecology and understand the effect that they have on rivers and the effect that they have on communities, I actually totally get why people—it's just part, it's part of the landscape, it's part of what's familiar. Some towns have dams on their town seal.

It's just, it's part of what you expect of your community, and so, it really does take thinking about it differently, like, what was here before the industrialization? Who lived here before and what was their relationship to the river? We don't paddle here because the water's dirty and you can't get very far, but what if the water were clean and you actually could get somewhere when you put your boat in the water?

What if you wouldn't have to freak out if your kid fell in the water? Those are the kinds of things that really did change the conversation, but we had to get past the, you're trying to kill me part [laughs]. Which is totally understandable, I get that [laughs].

JAY FEINSTEIN: So, this conversation in Taunton started over flooding risk. Did you find that people were able to think and care about other factors other than flooding? Were people able to think about the fish habitats and the ecology in the nature to the same extent that they were thinking about their own safety?

ALISON BOWDEN: No. I mean, honestly, no. And that's where it's actually so important to be able to demonstrate the benefits to the community based on what they actually value. If all we did was bring back fish, that would've made some people happy and add some benefit, but it wouldn't have solved the problem that brought us there in the first place.

And that is becoming such a pervasive problem, not just in Massachusetts but everywhere. I mean, sadly, just this summer every day, if you turn on the news, something is flooding somewhere. So, in order to get to this goal of ecological restoration, our whole approach—The Nature Conservancy's whole approach—is using nature to provide benefits for people. It’s not one or the other. Or it's really what set of solutions can we bring to the table that we can prove will actually create the benefits that the community wants? And some people will be really interested in the fish, but everybody is interested in safety.

JAY FEINSTEIN: So, helping people helps nature and helping nature helps people?

ALISON BOWDEN: Yes.

JAY FEINSTEIN: That's sort of the thesis here?

ALISON BOWDEN: Yes. We are absolutely reliant on healthy, fresh water systems for water supply. We all drink every day, but we also all live in a watershed. So, if that watershed is healthy, it's much more likely to be able to protect us instead of being a flood risk. We can't stop flooding, but we can reduce its impacts to people.

[music]

MAREA GABRIEL: In addition to the three dams on the mill that were removed, four additional dam removals in the Taunton watershed have been completed, alongside three new fishways—and still, there's more work to be done.

And I want to mention one more thing. We spoke about water blockages impacting fish and flood risk but as Alison mentioned, waterways are also a source of fresh drinking water for our communities. In fact, the Assawompset Pond Complex, the body of water behind Tom's house, is the largest natural pond system in Massachusetts and provides water for about 250,000 people in New Bedford, Taunton and numerous other nearby towns. We went out with Tom to take a closer look by boat.

TOM BARRON: Just be careful in those steps. You're not used to 'em.

ALISON BOWDEN: They are very short.

TOM BARRON: They are. Coming up, you can take two at a time.

MAREA GABRIEL: We walked down to the dock behind Tom's house and, of course, said hello to the neighbor's dogs along the way.

TOM BARRON: Charlie, come on over.

[laughter]

JAY FEINSTEIN: That's a beautiful dog.

TOM BARRON: I'm training him to go after ducks.

[laughter]

MAREA GABRIEL: From there, we stepped on the boat. There are benches on both sides of it and we all fit pretty comfortably.

TOM BARRON: Alright, you can start walking. Be careful on the left, there's some dried duck stuff there that I wash off almost daily.

ALISON BOWDEN: Shocking your ducks aren't toilet trained.

MAREA GABRIEL: Of course, like any boat, it was pretty loud. So forgive us for the audio in this section.

TOM BARRON: That's what I mean, my motor's loud, so it's tough to hear.

MAREA GABRIEL: The boat has a special screen—a depth finder—that shows you how deep the water is and although the pond looks very large from the outside, Tom made sure to mention how shallow it really is.

TOM BARRON: When I told ya, all this is less than 10 feet deep. It's, you look out and say, "oh, it's big", it's not, it's shallow.

MAREA GABRIEL: And that matters because it is a public water supply. The less water in the pond, the less secure the water supply is. But that also means there's less water to flow into other parts of the watershed that are important for fish passage, wildlife, water quality, recreation and much more.

TOM BARRON: Look at how far we're from the shore. And over here. And we're gonna go out there past the church, it's gonna be five feet and then it'll drop down.

JAY FEINSTEIN: It's funny how shallow it is, yet, it still supplies water to so many people.

TOM BARRON: Well, I told you from that house back there all the way over, it's less than 10 feet. There's some deeper water out here. Years ago they used to mine iron ore, so there's one spot that's like 44 feet deep. That's where they used to mine it. But the only deep water is just around this shore a little bit and over there. Everything from there over, like I said, 10 feet. People say, "oh my god, that's so big and deep out there." No, it's not.

MAREA GABRIEL: Tom made sure to mention, too, that his community in Lakeville does not get to benefit from the fresh water here.

TOM BARRON: But, we have all this water and not a drop of it we can use.

JAY FEINSTEIN: You can't use any of it? That's interesting. Even though it's literally in your backyard.

TOM BARRON: Water, water everywhere, but not drop to drink.

MAREA GABRIEL: Still, Tom enjoys being able to experience a firsthand view of the watershed and the ways that it's all connected.

TOM BARRON: But, it just gives you such a different perspective, how big this is.

JAY FEINSTEIN: Yeah, it's huge.

TOM BARRON: Oh, it's—but they're all connected, when you see how they're all connected, it's crazy. But my wife and I feel so blessed to have people come down and to see this and to share it. You can tell the people that live here, they really appreciate it.

[music]

MAREA GABRIEL: After we got back from the boat ride, we sat around Tom's table again to talk about the impact of the low water levels and how this is a connectivity issue too.

ALISON BOWDEN: So, Tom has laid out here for us, he has lots of records that he's kept and just the headlines that I'm looking [at] here. So we have a headline that says, “Pond levels approach 2016’s record lows” and there's a photo showing historically low water. It shows a stream gauge and the water is at the very bottom of it.

JAY FEINSTEIN: So, we talked a lot about the flooding, but I do want to get to that other side of the coin. What happens when there is a drought? How does that impact people? How does that impact the environment?

TOM BARRON: Well, the major impact is the Nemasket River, because again, that's the headwater, so when you have 20 feet of shoreline and no water can get there, the only water that feeds the river is being drained from the swamp.

But in August right now, there's hardly any water in the swamp because it's evaporated, all the plants have used it up, so there's nothing to go into it. So again, we have a lot more fish kills. So, that's what happens continuously. Only, people can't get out there 'cause they can't paddle through the milfoil to go up and down the river.

After we did the last weed removal, we had so many fishermen and people tell us, thank you so much, we can paddle the river. And again, we're doing it from a herring perspective, but it's for all the fishermen, it's for all the kayakers, it's for all the canoeists and all the people that use that river. There's an awful lot of people locally and out-of-town that use the river.

ALISON BOWDEN: Yeah, I live about a half hour north of here and I paddle it all the time. It's one of my favorite places to come.

MAREA GABRIEL: So, what can be done about the water levels? It's complicated. We have to consider and balance the different needs for fish passage, flood risk and drinking water—everything is connected. This isn't just a water-level issue, it's a river connectivity problem. That's why it takes community engagement and project by project, dam by dam, culvert by culvert, reach by reach to get closer to a water system that functions more naturally and works for both people *and* nature. That's why we're approaching this holistically at a watershed scale, because not one project fixes all the problems, but these cumulative actions help restore the system with multiple benefits for nature AND people.

JAY FEINSTEIN: I mean, I think it's just so interesting that so many of these issues are happening in such a small location, really. I mean, you drive 20 minutes and then you have another story that's eerily similar, and then you drive 20 minutes, you have another story that's eerily similar. It's everywhere multiplied by thousands.

ALISON BOWDEN: This absolutely is a microcosm of something that's relevant across the Taunton River watershed and exactly that same kind of thing is playing out across the US and across the world as the climate changes, and we're seeing these more extreme swings between flooding and extreme drought. We really need to be thinking about the whole system and connectivity and balancing all of those needs.

[music]

MAREA GABRIEL: *Nature is the Solution* is a podcast from the Nature Conservancy. In our next episode we further our conversation about connectivity, as we head to the

Appalachians. We talk about how a connected landscape matters for wildlife, people and the climate.

HEATHER FURMAN: Our birds and butterflies move across the landscape and migrate from the northern climates of Canada all the way down to Mexico or the Caribbean. They're moving up and down the Appalachians. The habitat that exists right now within our eastern forests is what is supporting that migration and that movement.

MAREA GABRIEL: For that episode and more, follow our show on Apple Podcasts, Spotify or wherever you listen. Thanks for listening to *Nature is the Solution*, I'm Marea Gabriel.

[music]